Museum Pedagogy and Learning Experiences: An Investigation into Museum Education from Instructional Perspectives

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I certify that except where due acknowledgement has been made, the work is that of the author alone; the work has not been submitted previously, in whole or in part, to qualify for any other academic award; the content of the thesis is the result of work which has been carried out since official commencement data of the approved research program; any editorial work, paid or unpaid, carried out by a third party is acknowledged; and, ethical procedures and guidelines have been followed.

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‘Striving for success without hard work
is like trying to harvest where you haven’t planted.’
- David Bly

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ABSTRACT

The study investigated the education programs at three museums of Museum Victoria (MV) and the National Gallery of Victoria (NGV) in relation to the corporate and management’s strategic direction; and the roles and responsibility of museum management in the development of the education programs; as well as the roles and responsibility of museum educators in the execution of the programs. Specific focus was given on the pedagogical aspects of the education programs which involved the examination of the instructional theories, approaches and strategies employed by the museum educators. Semi-structured interviews, teaching observation and document analysis were the methodology for data collection utilized. Four museum managers and eight museum educators participated in the study. The findings demonstrated the significance of museum management in influencing the culture of program planning, development and implementation, as well as the instructional practice of museum educators. One of the key findings to the study was the influence of museum focus and its distinctive collections on the use of pedagogy and instructional strategies that were unique to each museum, and the emphasis each museum placed in its learning tasks and activities. The educators considered constructivism as the most appropriate framework for teaching and learning in museum setting, however, it was found that both constructivist and behaviourist approaches were employed in lessons. The findings also reveal that the MV and NGV educators utilised similar instructional theories, approaches and strategies in the implementation of the education programs. It is interesting to note that the manner in which they were executed, however, was unique to each museum and were highly influenced by the museum’s focus and the nature of its collections. Challenges faced by the museum educators and the expectations that they have on the roles performed by teachers during school excursion were emergent themes from the study. The implications of the study, recommendations and directions for future research were discussed based on the derived findings.

Keywords: Museum Management, Museum and Gallery Education, Museum Pedagogy, Museum Educators, Education Programs
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<tr>
<td>CoI</td>
<td>Community of Inquiry</td>
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<tr>
<td>DEECD (of Victoria)</td>
<td>Department Education and Early Childhood Development</td>
</tr>
<tr>
<td>MV</td>
<td>Museum Victoria</td>
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<tr>
<td>NGV</td>
<td>National Gallery of Victoria</td>
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<tr>
<td>OBL</td>
<td>Object-based Learning</td>
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<td>ZPD</td>
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CHAPTER ONE
THE STUDY DEFINED

1.1 INTRODUCTION

Over the past century, museums’ roles and functions have experienced tremendous change, from a repository for the collection of artefacts to an interactive centre of learning (Filippoupoliti & Sylaiou, 2015; Innocenti, 2016; Lythberg, Newell, & Ngata, 2015; Samihah Khalil et al., 2000). In line with this view, the roles of museums have also evolved. Objects are no longer exhibited only for viewings (Barbour, 2008; Filippoupoliti & Sylaiou, 2015; Leinhardt & Crowley, 2002); rather they are positioned to provide educational advantage (Ang, 2005; Glaser & Zenetou, 1996; Lythberg et al., 2015); and in doing so providing a more interactive learning experience (Feher, 1990; Glaser & Zenetou, 1996; Hooper-Greenhill, 2002). In relation to this, museums have established their own education department or education unit (Isa & Forrest, 2011; Isa, Salim, Zakaria, & Forrest, 2015; Samihah Khalil et al., 2000), staffed by education officers (Kley, 2009; Nolan, 2009). Objects in the museum are utilised optimally to allow for more effective museum learning experience academically (Hooper-Greenhill, 2000, 2002, 2002; Lythberg et al., 2015), socially (Dierking, 1991; Falk & Dierking, 1992; Fyfe, 2006; Matusov & Marjanovic-Shane, 2012) and culturally (Chin, 2013; Halpin-Healy, 2015; Karp, 2012; Pieterse, 1997; Xanthoudaki, 2013).

The current study is sparked by the researcher’s experience as a school teacher and past involvement with the education programs in museums and galleries. Teaching within the boundaries of the classroom potentially limits students’ creativity and imagination, and there are fascinating objects in museums and galleries that could inspire, encourage and enhance learning experiences. In the countries where museums and galleries have been long established, and the educational role of these establishments are recognized by schools and authorities in education, it is common for teachers to bring students for visits to museum and galleries and the education activities are conducted by the museum or gallery officials (Kley, 2009; Nolan, 2009; Samihah Khalil et al., 2000). However, the extent to which museums embrace this educational role differs between one establishment to another (Isa & Hashim, 2006; Kasiman, 2010; Khalil, 2007; Mohd Yusoff, Dollah, Kechot, & Din, 2010; Samihah
Khalil et al., 2000) with many museums functioning traditionally (Isa, 2012; Mohd Yusoff et al., 2010; Samihah Khalil et al., 2000). Isa (2012), Ahmad (2014) and Isa and Zakaria (2007) indicated that these museums were satisfied with the current role as venues for the repository and display of objects. Khalil (2007) and Kasiman (2010) attributed the resistance to adopt a more proactive museum education model to a number of primary factors including insufficient financial means and support (Kasiman, 2010; Khalil, 2007); interference of political agenda (Kasiman, 2010) and the lack of resources and expertise (Isa & Forrest, 2011; Samihah Khalil et al., 2000).

Museums with education programs view their collections as having unique educational potential (Ang, 2005; Glaser & Zenetou, 1996; Huber, 2009; Lythberg et al., 2015). In relation to this, the function of museums and galleries has seen massive changes, from being a repository of static presentation of artefact collections into active learning environments for visitors (Barbour, 2008; Marty, Rayward, & Twidale, 2003). With vast collections of artefacts and creative planning, museums are transformed into locations of exciting learning environments (Glaser & Zenetou, 1996), infusing new and more meaningful learning experiences (Lythberg et al., 2015). Museum Victoria, for example, offers both online learning as well as face-to-face interactions with its educators through programs that link directly with the school curriculum (Museums Board of Victoria, 2014). The museums under Museum Victoria provide a wide range of education programs and resources for teachers and students of all ages (Greene, 2006; Melbourne Museum, 2018).

Countries such as United Kingdom, United States of America and Australia have realized the potential of museums in enhancing student learning (Samihah Khalil et al., 2000). Education programs in museums create a shift away from the regular classroom. Vast collections of objects found in museums provide opportunities for students to interact with real objects (Isa, 2004). In these countries, education has become part of a museum’s organisational objectives. Strong links are built between museums and schools and the exhibition halls in the museums become the students’ classroom. With education programs in place, the long term effects on younger generations are invaluable in nurturing young active minds that appreciate their cultural differences yet embrace this cultural uniqueness (Greene, 2006).
This study investigated the education programs carried out by two selected museum institutions in the State of Victoria: Museum Victoria and the National Gallery of Victoria. The education programs studied were confined to those designed and delivered for primary and secondary school students, and data was collected through the means of interviews, observations and document analysis. The 6P model of museum learning proposed by Kelly (2007), consisting of person, purpose, process, people, place and product, was utilised as the theoretical framework of the study. The model was employed in examining six main aspects: the organisational and administrative roles, the related policies, the implementation and evaluation of education programs, the educational theories and approaches utilised, and the educators’ view of museum learning and of teachers’ roles during museum visits. It was flexible in its use which encompassed museums and galleries of any themes and nature across a diverse range of content areas at varying complexity levels. The model assisted in the characterisation of museum management, museum education and museum educators within a sociocultural context (Kelly, 2007).

1.2 PROBLEM STATEMENT

Traditionally, museums and galleries were dependent on museum officials such as the curator, exhibition officer or other personnel to provide learning activities (Glaser & Zenetou, 1996; Kotler & Kotler, 2000). The guided tour approach and public talks, mostly in a series of mini conferences, were among the common approaches undertaken by these officials in offering education to the public, mainly school visitors (Hein, 2004; Hooper-Greenhill, 1994). However, visitors’ interaction with objects was mostly one way with passive engagement between the visitors and objects displayed (Bowen et al., 2008; Lee, Lorenc, & Berger, 2010; Mayer, 2005; Witcomb, 2003).

Even though the efforts for the provision of formal learning experiences in museums have been around for 50 years, (Hein, 2004; Kotler & Kotler, 2000; Rensselaer & Alley, 2008) the review of literature indicated a number of aspects worthy of acknowledgement. First, there is a lack of standardisation in the roles, functions and tasks performed by museum educators from one museum institution to another (Gorman, 2007; Herz, 2015; Hicks, 1999; Munley & Roberts, 2006). Herz (2015) stated at least seven different positions held by the leadership of various museum education departments. She argues that many museums are unsure of how education departments fit within the
existing structure or its primary role in museums. In addition, the question of whether museum educator
is a profession is still largely discussed by scholars, particularly when most developed countries
acknowledge teaching as a profession (Dobbs & Eisner, 1987; Woollard, 2006). It would appear that in
utilizing museums and galleries as centres of learning, with clear roles for education officers are very
much needed to provide variety in learning (Bedford, 2003; Dodd, 2002; Falk, 1999; Falk & Dierking,

Second, in many developing countries museums are still operating traditionally (Isa & Forrest,
2011; Samihah et al., 2000). The visiting experience is often passive with one-way engagement (Bowen
et al., 2008; Lee et al., 2010; Mayer, 2005; Witcomb, 2003). School excursion activities involve students
going around objects and occasionally reading the information tag without much meaningful learning
taking place (Hein, 2004). Even with the awareness and ambition for the establishment of an education
department, often this effort is futile (Samihah et al., 2000). This is largely due to the lack of expertise,
funding, trained personnel in conducting educational activities in museums and galleries, as well as
unclear policies on education programs (Bulduk, Bulduk, & Koçak, 2013). Khalil et al. (2000) stressed
the importance of museums assuming more proactive roles within the community. As such, the
establishment of an education department in museums and galleries is viewed as a departure from
traditional role and increases the relevance of museums and galleries in the society. Khalil and his co-
authors added that in order to accomplish this, museum staff and education officers need to be highly
qualified, especially in the field of education. This clearly indicates the need for sound academic
qualifications, which helps in improving the educational credibility of museums and galleries.

Third, museums and galleries face various challenges in the 21st century: changing visitor
demographics, social attitudes, legal requirements, economic conditions, technological innovations and
socio-political landscapes (Fuller, 2005; Kotler, Kotler, & Kotler, 2008) are some of the barriers
identified that could potentially limit museum management from being effective. In addition, limitations
in the forms of policy, expertise, appropriate funding and planning (Kilgour & Martin, 1997; Kotler et
al., 2008; Talboys, 2016) restrict museums as educational hubs. Many authors (Fuller, 2005; Greene,
2006; Kotler & Kotler, 2000; Newman & Tourle, 2011; Paroissien, 2006; Shaw, 2016) agree that the
most prevalent challenge for museums is the limitation of funding. Museum management has to assume
a more progressive role in their leadership and managerial approach (Paroissien, 2006). Though success stories of museums raising their own funds were reported, there were also museums that had to close down due to budget pressure (Newman & Tourle, 2011; Rex, 2015). Sydney’s Museum of Contemporary Art and the Art Gallery of New South Wales, for example, managed to turn the organisations around from closure through the assistance of philanthropies and sponsors of mutual interest (Paroissien, 2006).

There were also museums which experienced funding crisis and had to shut down, Museums Association United Kingdom (2017) reported the closure of 64 museums in the country between the period of 2010 to 2015, with 15 museums closed in 2016 due to reduced public funding.

Fourth, studies that attempt to document the full sequence of teaching processes which involve the development of education programs, lesson planning, lesson delivery and reflection are scarce. Many studies with a focus on issues and challenges faced by museum educators placed emphasis from the perspective of management and administration of education departments (Fuller, 2005; Greene, 2006), the survival of museum and the education departments (Fuller, 2005; Kotler & Kotler, 2000; Newman & Tourle, 2011), and the role the department plays within the learning society (Fuller, 2005). Literature that addresses specific issues and challenges faced by museum educators in the implementation of education programs lack sufficient detail that adequately portrays the struggle of museum educators during their instructional sessions (Ames, 1992). Detailing the development process of education programs is relevance in measuring the extent to which the programs meet the school curriculum as well as the considerations given in program development. Examining the full process of teaching, including the process of lesson planning, provides information in relation to museum educators’ preparedness in teaching, as well as shedding insights on the similarities and differences between teaching in museums and teaching in schools.

Bulduk et.al (2013), Gorman (2007) and Hicks (1996) stressed the lack of professional standards in museum education even though various efforts had been put in to develop best practice in the field, and the absence of cohesive guide in the evaluation of education programs. Hence, unclear roles, the lack of professional standards for museum educators to comply, and comprehensive resources for reference in museum education practice restrict museum educators’ effectiveness. Therefore, there is a need to document current practices in museum education, with an emphasis on specific aspects of
instruction in the delivery of education programs, as a cohesive guide for museum practitioners. The findings derived from the study extrapolated from interviews involving museum managers and museum educators, teaching observations and document analysis may serve as a reference for museums and galleries particularly for the establishments which are in the initial stage of venturing into museum education. A comprehensive documentation of museum management and leadership, particularly in relation to the managerial and administrative aspects of education department, is timely.

1.3 RESEARCH OBJECTIVES

The study was framed by the following research objectives:

1. To examine the organisational structure, vision and mission of the Museum Victoria and the National Gallery of Victoria, and the strategic directions that supported the implementation of education programs in these institutions.

2. To identify the division responsible for the education programs at the Museum Victoria and the National Gallery of Victoria, and the management and sustainability aspects of the human resource, marketing, budgeting and funding of education programs.

3. To investigate the types of education programs carried out by the Museum Victoria and the National Gallery of Victoria and the target audience.

4. To analyse the way museum educators view the difference between museum education and classroom learning as well as their expectations of teachers’ roles during museum visit.

5. To examine the development, management and evaluation processes of education programs at the Museum Victoria and National Gallery of Victoria.

6. To explore the planning and implementation of education programs by museum educators of the Museum Victoria and National Gallery of Victoria.

7. To investigate the educational theories, approaches and strategies employed by museum educators in the implementation of education programs at the Museum Victoria and National Gallery of Victoria.
1.4 RESEARCH QUESTIONS

The study investigated the following research questions:

1. What were the organisational structure, vision and mission of the Museum Victoria and the National Gallery of Victoria, and the strategic directions that supported the implementation of education programs in these two institutions?

2. Which division was accountable for the education programs at the Museum Victoria and the National Gallery of Victoria, and how was the division managed and sustained in relation to its human resource, marketing, budgeting and funding?

3. What were the types and the target audience of education programs carried out by the Museum Victoria and the National Gallery of Victoria?

4. How did the educators at the Museum Victoria and the National Gallery of Victoria distinguish museum education from classroom learning, and their expectations on the roles of teachers during museum visit?

5. How were the educational programs developed, managed and evaluated in the Museum Victoria and the National Gallery of Victoria?

6. How were the educational programs planned and implemented by the museum educators in the Museum Victoria and the National Gallery of Victoria?

7. What educational theories, strategies and approaches were utilised in the implementation of education programs in the Museum Victoria and the National Gallery of Victoria?

1.5 SIGNIFICANCE OF THE STUDY AND CONTRIBUTION TO THE BODY OF KNOWLEDGE

Museum education is a field that is widespread and is increasing in its implementation (Burnham & Kai-Kee, 2011; Eisner & Dobbs, 1988; Freedman, 2000; Talboys, 2016; Yellis, 2012) Museum leaders engage in the establishment of education departments to increase museum relevance to the community, however, without a clear understanding of the functions and roles of museum educators and museum departments (Czajkowski & Hill, 2008; Hudson & Boylan, 1992; Munley &
as well as the knowledge with regard to research-based museum education practices, it is difficult to sustain effective and efficient practices. The main significance of the study is to inform museum professionals of current museum education practice and increase understanding of community partner organisations and teaching community of the increasing roles of museums in the scholarship of knowledge and commitment towards education. The latter, is hoped, to bring about increased engagement and participation from members of the community in museum education programs and activities.

A comprehensive study of education programs within museum and gallery settings provide a cohesive guide and reference specifically to the museum practitioners, teacher education providers, school leaders and teachers. It promotes ambition for museum operators who function within traditional museum design to seek and explore the potential of establishing education departments, hence increasing the relevance of the museum within the society. The departure from a model that encourages passive engagement between school visitors and objects to a framework that places greater emphasis on formal learning experiences presents an added value to the roles played by museums and builds closer ties between museums and society. Museum organisational models, structures and policies, the establishment of education departments, as well as planning, development and the implementation of education programs serve as a reference to traditional museum operators in setting the organisational direction towards a niche area in education.

The establishment of education departments in museums and galleries help in diversifying career options for teachers, in addition to the improvement of teacher training competitiveness. With pedagogical knowledge and teaching know-how, graduates are able to plan and conduct effective education programs with museums or galleries and tighten museum-school collaboration. More importantly, it enhances the graduates’ portfolio by having vast career options besides being assigned to schools as teachers.

Comprehensive documentation of current museum practice also diversifies museum and school pedagogy. Museum education promotes interactive teaching and learning styles and with little background knowledge of school visitors, museum educators have to be more creative, adaptive and critical in their approach. Hence, museum educators need to engage in continuous learning to update
themselves in the most current and appropriate pedagogy in meeting the demands of the visitors in the changing social, political and economic landscape. Teacher exposure to museum pedagogy may lead to a shift in the way they view teaching and learning processes. Motivated teachers with a thirst for lifelong learning may be encouraged to improve their own instructional skills in learning exploiting objects in their lessons. Teachers might also be encouraged to conduct their lessons within museum and gallery settings and to utilize more interactive approach to teaching, for example object-based learning, constructivist theory or even aspects of Piaget’s theory of development, in ensuring that teaching is relevant with the purpose, context and realia.

1.6 LIMITATIONS OF THE STUDY

There were several limitations while completing this study.

The study investigated the education practice in museum and gallery in relation to the aspects of museum management and its instructional practice. The findings of this study, however, were derived from data gathered from three museums and only one gallery: the Melbourne Museum, Immigration Museum, Scienceworks as well as the National Gallery of Victoria. An equal sample of three galleries would have provided a more reliable foundation for comparison of managerial and education practice in both museum and gallery institutions.

Time limitation also affected the manner in which the methodology of the study was structured and carried out. The participants of the study were museum managers and museum educators and their data were instrumental in measuring the effectiveness of museum education practices in the institutions investigated. The participation of school teachers who were involved in lessons organised would shed greater insights on lesson effectiveness, particularly in relation to the degree to which the lessons met teachers’ expectations, scaffolded student learning, supported classroom learning; and whether teachers were more likely to repeat their visit. Teachers’ feedback would present a rich perspective to the findings, enabling the study to also investigate the aspect of museum-school collaboration.
1.7 OPERATIONAL DEFINITIONS

The following terms are relevant to the study and are repetitively utilised. These terms are defined and their context of use is explained.

The term museum originated from the Greek word mouseion which refers to ‘the Temple of the Muses’. In Greek mythology the Temple of Muses is a location for the Goddess of Inspiration and Learning to reside and the venue for patrons of arts (Gould, 2008; Kotler et al., 2008). The modern word museum, however, carries complex meaning with various authors assigning various interpretations. Malaro (1996) described a museum as having two natures: first, the unique nature of teamwork which requires every person to work collaboratively with one another; and second, the nature of governance which involves policy making and implementation of the policy. Talboys (2016), on the other hand, described museum in relation to two perspectives: the people who work within the field of museum and the people who are outside the museum community. For the purpose of this study, the word museum is used to refer to first, a physical establishment with object displays, spaces for public galleries, rooms for specific museum activities and areas for personnel and management; and second, an organisation within a community with specific purposes and goals for the development of its personnel, its establishment and betterment of the community in which it resides.

Museum education describes any activities organised by a museum with a view of facilitating knowledge or experiences for public audiences. Museum education has the task of connecting the audience with a richer and more meaningful educational experience (Johnson, 2009). Museum education focuses on presentations offered to school children to supplement or enrich, or both, their classroom instruction emphasized on the local area history (Committee on Education, 2002).

The term gallery, also known as art gallery or art museum, is simply defined as a place where works of art are displayed for public viewing, maintained and preserved by curators (Boylan, 2006). Gallery education, on the other hand, is described as the formal learning experience facilitated within gallery settings with artworks as the content for learning (Hudson & Boylan, 1992).

Museum educator is defined as a person who is involved with the overall process or practice of facilitating learning. An educator often specializes in specific content areas or an academic discipline (Nolan, 2009, p. 8). A museum educator is also any member of the museum staff who has specific
responsibility for organizing and delivering educational services, as well as ensuring that education as a function of the museum is kept to the fore in discussion and planning (Talboys, 2016). Highly skilled museum educator is described as possessing an ability to lead in variety of settings including leading their department, up the institutional hierarchy, across the institution and outside the institution (Nolan, 2011, p. 32).

The discussion in this study takes the perspective that the term museum represents both museum and gallery. Similarly, the term museum education is also used to include gallery education. Museum educator also denotes gallery educator and these terms are used interchangeably due to very close similarities in the characteristics of educators and qualities of education programs implemented in both museum education and gallery education fields.

1.8 SUMMARY OF THE CHAPTER

The chapter sets the context for the study which aims to examine the education programs at Museum Victoria and the National Gallery of Victoria in relation to its administrative and implementation aspects. Even though the field of museum education has been around for half a century, there has yet to be a serious attempt to document museum pedagogy particularly in the educators’ attempt to link their lesson planning to school curriculum, provision of meaningful learning experience and the achievement of learning outcomes. Issues and challenges faced by the museum managers and educators are also investigated.
CHAPTER TWO
REVIEW OF LITERATURE

2.1 INTRODUCTION

This chapter explores the literature that is relevant to understanding the teaching and learning processes within museums and galleries, particularly the roles and functions played by these two types of establishments in facilitating learning experiences of school students. The chapter is structured around four key themes: development of museology: museum management; museum education and museum educators. First, the historical perspective of museum and gallery development is presented and the connection to education is examined. The discussion of the second theme, museum management, examines the managerial types, issues and challenges to museum management as well as program evaluation. The review of literature for museum education emphasizes the roles performed by museums and galleries in communities, types of education programs and theories of learning. The fourth theme, museum educators, involves the discussion of effective attributes and their roles and responsibilities in the implementation of education programs.

The study is carried out with the aim of producing a comprehensive documentation of the administration, planning and implementation of the curriculum-linked education programs which would serve as a reference for museum practitioners, particularly museum executives, who wish to embark on the development of an education unit and the provision of curriculum-linked programs to school visitors. Specifically, the study explores the education programs carried out in museums and galleries from five perspectives: the support of the organisational top management in relation to mission, vision, strategic direction and planning; aspects of administration and the resources required; the types of education programs available and the target audience; planning, implementation and evaluation of the education programs; as well as the educational theories, approaches and strategies employed. They are represented by seven research questions which frame the study.

For the purpose of this study, the discussion from this point onwards assumes the term museum and museums as inclusive of museums and galleries, unless stated otherwise. This is to facilitate a
smooth discussion as there are close similarities between education programs run in museums and galleries.

2.2 DEVELOPMENT AND EVOLUTION OF MUSEUMS AND GALLERIES

Johnson (2009) described museum education as any activity organised by the museum with a view of facilitating knowledge or experiences for public audiences. Museum education has the task of connecting the audience with a richer and more meaningful educational experience. The process is said to be complex and difficult as it seeks to enrich the experience and make a visit to the museum evocative. Thus, its implementation requires skill and knowledge which is owned exclusively by particular groups.

Talboys (2016) described a museum in relation to two perspectives: the people who work within the field of museum and the people who are outside the museum community. He argued that the way a museum was perceived is mainly influenced by the level of involvement that a person had with the museum. He elaborated by explaining that a museum was perceived by the public as having the primary function of preserving and displaying of artefacts with archaeological and historical values. On the other hand, people who were directly involved with museums viewed the establishment as being more complex with multiple and interdependent roles to perform (Talboys, 2016). Talboys added that the kind of role museum play was relative to individuals, ‘a curator, for example, would give an answer with emphases and biases that differed from those of a conservator or a designer. In the end, however, they too were likely to agree that museums exist, in part, to walk and display historical artefacts or an archaeological interest’ (Talboys, 2016, p. 5).

An understanding of the nature of museums would lead to a greater understanding of museums as a whole (Malaro, 1996). Malaro viewed museums as having two kinds of nature. The first was the nature of teamwork in museum operations. Malaro explained that the unique nature of teamwork required every single unit and individual in museums to work closely with each other for the more effective delegation of jobs. The second was the nature of museum governance: governance involves policy making and the administration responsible for carrying out the policy. Understanding these concepts, according to Malaro, would enhance the understanding of the day-to-day activities of museums.
2.2.1 Museums: Terminologies and Functions

There are various definitions of a museum. An extensive literature review showed that there was no consensus on the interpretation of the word museum. The disagreement about the term museum by many scholars is still ongoing, and in many ways, can be viewed from a scientific perspective. Murphy (2004) felt that a museum should be defined in a way that it could be easily understood by the public yet transcends all agencies involved, including government and non-governmental agencies, and serves as a moral benchmark of the non-negotiable values of the museums.

The most common way of describing what a museum is, obviously includes looking at its functions in acquiring and conserving objects as well as the educational and research role that it plays (Hooper-Greenhill, 1994). The disputes and differences that exist in defining the word museum are evidence of disagreement among scholars. Many agree, however, that the easiest way to understand what a museum really represents is by recognizing the functions and types of collections that museums have (Caston, 1989). Museum functions, however, were far more complex than the kind of exhibitions that they kept. Museum was also explained through the collection of its owners (Snyder-Ott, 1974). Therefore, the strength and existence of the museums were also subjected to special collections and this distinguished the difference between one museum and another (Barbour, 2008). Barbour added that the special collections that museums have often created magnetic attraction that pulls in the visitors.

Despite the disagreement, a definition that is most commonly accepted was proposed by the International Council of Museums (ICOM), a body responsible for and committed to conserving the world’s natural and cultural heritage and communicating its value to society in tangible and intangible forms (International Council of Museums (ICOM), 2010, p. 26). During the Council’s 22nd general assembly in Vienna in 2007, museum was defined as ‘a non-profit, permanent institution in the service of society and its development, open to the public, which acquires, conserves, researches, communicates and exhibits the tangible and intangible heritage of humanity and its environment for the purposes of education, study and enjoyment’ (International Council of Museums (ICOM), 2007).

There were three main elements presented in the definition by ICOM. In narrative order, the first element described museums as non-profit organisations with the role of serving the public. The second element described museums in relation to their activities involving acquisition, conservation,
collection, research, communication and exhibition of the tangible and intangible heritage of humanity achievement. The third element described the eventual effects that museums have on its visitors.

2.2.2 The Development of Museums and Museum Education

Looking at its literal meaning, the word *museum* comes from the Greek work *mouseion* and can be translated as ‘the Temple of the Muses’. According to Greek mythology, the Temple of Muses was a place where the Goddess of Inspiration and Learning and the patrons of arts were located. One of the earliest museums was built in Alexandria, Egypt around the third century BC, by Ptolemy II Philadhalphus. It is believed that Philadhalphus was the most accomplished Ptolemaic King who ruled after the Alexander the Great. Alexandria then became a pre-eminent city of learning in the Mediterranean world and this Ptolemaic Museum functioned as a library for scholars, a research centre, and a contemplative retreat (Kotler et al., 2008).

Meanwhile, in ancient Rome, during the second century, museums were established to store and display collections which had been acquired from colonial and military campaigns. After the imperial campaign, the Roman generals returned to Rome, and Fulvius, a military general of Rome, for example, had collected thousands of bronze, marble statues, and silver pieces from various colonies to be displayed; and Rome became a place filled with objects from subdued nations (Kotler et al., 2008).

During the medieval period in the West, the Roman Catholic Church became the pre-eminent intellectual centre and patron of the arts. This led Pope Sixtus IV to collect ancient Roman artefacts at the end of the fifteenth century. The beginning of the Renaissance era in Italy in the late fourteenth century marked the rise of humanism and secularism in society. The Renaissance brought strong interest in the study of nature, inventiveness and artistry (Kotler et al., 2008).

By the sixteenth century, Italy was home to great private collections and museum-like buildings that housed botanical and zoological specimens, historical artefacts, skeletal remains, curious shells, collection depicting the range of world habitats and cultures were also highly sought after becoming known in the eighteenth century as a *Cabinet of Curiosities* (Glaser & Zenetou, 1996).

Glaser and Zenetou (1996) demonstrated the evolution of museums, in relation to the roles they played in education, according to five different stages or periods of development, making its start in the
eighteenth century. These periods are known as the age of the private society, the age of ‘popular’
commercial museums, the age of the academic museums, the rise of the public museums and the
emergence of educational museums.

During the age of private society, individuals became collectors mainly imitating a popular
practice in European countries at that time (Glaser & Zenetou, 1996). The authors added that much of
the influence came from the European concept of the cabinet of curiosities and the public had very
limited access to these collections. Access to these individual collections was a privilege to the elites
and certain groups who were perceived as having high social rankings.

Glaser and Zenetou (1996) stated that in between the 18th and 19th centuries, after the age of
private society, museums were embraced as ‘popular’ culture. This period saw museums being
transformed into profit-making institutions in which the public embarked on self-education through the
means of entertainment. Museums were exploited for commercial purposes and the major attractions to
the museums were in the form of entertainments and public performances.

The late 19th century saw a shift in museums from its role in entertainment to a more scholarly
pursuit. During this period, objects in museums were used for scientific explorations and scholarly
research in colleges and universities. The museums were seen as learning institutions, places for adults
with opportunity (Glaser & Zenetou, 1996). This was the period where compulsory schooling policy
was initiated, and flexible learning environments were appropriately accepted. The museum became an
interesting place to visit and the number of visits by school children increased due to a change in
learning environments offered by museums. Relatively there was cooperation established between
schools and museums. There was great demand for the opening of new museums. This era marked the
application of object-based teaching as a method of instruction (Glaser & Zenetou, 1996; Hooper-
Greenhill, 1994). Glaser and Zenetou (1996) explained that objects were arranged according to themes
and were categorized based on topics.

The trends continued until the 20th century in which museums continuously offered programs
for adults and children, however, with slightly different educational inputs (Glaser & Zenetou, 1996).
The education programs available for school children were in the form of teaching sessions which later
on continued in schools. Object loan services provided by the museums enabled teachers to have follow
up teaching sessions in school. Meanwhile activities for adults were in the form of guided tours and lectures (Glaser & Zenetou, 1996).

Educational activities in museums around the late 19th and 20th century served as added value to the actual activities of the museums. During this period, the museum placed great emphasis on the activities of collecting and preserving, while education activities received less priority, mainly as the result of the Industrial Revolution. The industrialisation became the more important factor, where industrial key players showed high interests in museum collections and were involved as members of a board of trustees. This resulted in the value of museum collections to rise, leading banks and other funding companies to invest huge capital to own artworks. Museum collections were no longer confined to the elite, anybody with good fortune could become collectors. This era is described as the rise of democratic public museums (Glaser & Zenetou, 1996). During this period, education was seen as an activity separate from the main role of the museum, which was to collect and conserve (Hooper-Greenhill, 1994).

Hooper-Greenhill (1994) explained that education in a museum was only an adjunct, viewed by the public as serving an insignificant role to the process of collection, which was seen as an end in itself. This type of educational practice in a museum was also translated in work divisions. For example, permanent senior posts such as the curators were given a say in shaping museum policies. Meanwhile education staff who were seconded from other institutions (mainly schools) worked on a temporary basis generally at low level posts. Hence the education officers or staff in museums had minimal input into policy-making and management-related decisions. Education in museums during this period had not been well understood (Glaser & Zenetou, 1996). In this case, museums were only viewed as places to loan and supply object and artefacts. The methods of teaching during this period were also unstructured and far from being refined (Hooper-Greenhill, 1994). The development of progressive educational methods developed by highly respectable scholars such as Dewey, Pestalozzi and Montessori, who focused on the use of experiences and real objects, were treated with less importance and were hardly used in museums (Hein, 2004).

The educational museums only emerged again in the 20th century due to the increased awareness on the importance of visitor engagement in museums (Glaser & Zenetou, 1996). The authors
believed the importance of museums in adapting to the demand and lifestyle change of the society. They asserted that technologies were rapidly changing, and museums were also expected to embrace this change. Museums in the United States of America such as the Walker Art Center in Minneapolis started to place considerable importance of audience as key players in the business and positioned their museums to better appeal to the audience.

2.3 MUSEUM MANAGEMENT

The review of literature in relation to management of museum suggested the need to ‘move out’ of its traditional roles. Previously, a museum’s focus was primarily on its collections and visits made often with the purpose of admiring these collections (Bowen et al., 2008; Lee et al., 2010; Mayer, 2005; Witcomb, 2003). The shift to audience-based, however, reshaped the way the museum management perceives its collections, particularly in their potential in reaching for larger audience base; penetrating into specific audience segments; in catering for variability in programs offered (Kotler & Kotler, 2000); and in providing experiences unobtainable in other competing education and leisure providers (Fuller, 2005; Kotler & Kotler, 2000). Kotler and Kotler (2000) added that such processes often intentionally and unintentionally caused the staff and personnel to unlock valuable resources in their collections that could be previously overlooked.

2.3.1 Museum Types and Management

The way museums were managed is influenced by the type that the museum represented. There were at least four different types of museums based on their authorizing agencies proposed by Edson and Dean (1994). One of the types was the public museum that were fully owned and run by government. These museums were authorized and supported by local, regional and/or national governmental agencies. The second type was the private museums, in which they were funded and operated by individuals or private organisations. Museums that were run by churches also belonged to this category. For university museums, these establishments were initiated and administered for educational purposes and were maintained by colleges or universities. The final type proposed by Edson and Dean (1994) was the combination type museums. These were initiated by governmental agencies
or private organisations however the operation was transferred to a different party. The shift in the ownership and/or operation was the result of either governmental change or the reduction in funding. To continue, the museums’ operations, a non-governmental organisation may be formed to provide funding for the museums.

Effective management of museums is vital in the development and advancement of the organisations. Edson and Dean (1994) stressed that ineffective management would affect a museum’s ability to provide proper care and use for the collections; maintain and support effective exhibition and education programs, jeopardize museum existence and gradually losing public trust.

2.3.2 Issues and Challenges in Museum Management

One of the greatest challenges for museums venturing into education programs was in making current development and ever-changing knowledge base accessible to museum educators (Fuller, 2005). Fuller was of the opinion that having the content and pedagogy as important assets to any educators, but more importantly was the quest for life-long learning that would ensure change and improvement existed in the programs from time to time. In this manner, employees whose focus was solely on collections may be rigid in their lessons, doing the same work every day. On the other hand, employees who embarked on life-long learning were more likely to be flexible and continuously thinking on how to better approach the targeted audience.

Numerous other factors were also cited to be the cause for change in the way a museum managed and positioned itself. Demographic changes, social attitudes, legal requirements, economic conditions, technological innovations and socio-political landscapes (Fuller, 2005, p. 271) affected the manner in which museum management designed its policies, carried out its museum function and structured its employees and employment.

Funding and budget cuts continue to be one of the most prevalent issues in managing museums (Fuller, 2005; Kotler & Kotler, 2000; Moore, 1997; Newman & Tourle, 2011). Many of the museums worldwide, some were fully owned by the government whilst some were partially owned, received lesser funding from the governing authorities and museum executives had to assume a more progressive role in their leadership and managerial approach. Vigorous efforts were put in to attract sponsors from
the private sector that would complement museum development. However, Paroissien (2006) cautioned the risk of budget pressure on a museum’s ability to fulfil its mission and vision, particularly when museum-private sector collaboration placed more weight on the external party.

Newman and Tourle (2011) reported the impact of the Comprehensive Spending Review (CSR) carried out on October 2010 which included at least 15 percent budget cuts on 140 museums in the United Kingdom. They found that the cuts had caused more than half of the affected museums to lay-off their employees, 15 percent of the museums to operate at reduced operating hours with 30 percent less event and program offerings. Since CSR implementation in 2010, 42 museums, galleries and heritage sites across the United Kingdom had been reported to close (Rex, 2015). Some of the museums under this budget pressure sought funding solace from the community management. For examples, a small community in Smalthorne, England had assumed the responsibility of operation, maintenance and ownership of a farmhouse museum. Similarly, in Rossendale, Lancashire, three individuals from the nearby community had taken over the management of a museum and art gallery (Rex, 2015).

The Smithsonian in the USA exercised a number of measures in the face of budget cuts in 2013. Cost-saving initiatives included cutting down staff travel and training, reduced funding for research, education and outreach, hiring freeze including for vacant positions. The budget cuts also affected the number of online materials made available and severe measure included temporarily closing down some of the galleries and only leaving some new exhibitions for public perusal (The Smithsonian Institution’s Office of the Inspector General, 2013).

Even though museum management and its leadership, within their capacity and resources, were able to generate their own income, it took time, effort and effective strategic planning. The idea of museums generating their own income was becoming more common as museums were exposed to continued budget cuts. For example, Sydney’s Museum of Contemporary Art (MCA) in Australia had effectively raised close to 90 percent of its annual budget (Paroissien, 2006), since the early days of the museum’s establishment. The Art Gallery of New South Wales (AGNSW), raised more than half of its annual budget, which used to be solely government (Paroissien, 2006). In a move to further reduce cost, amalgamation of two highly reputable museums: the Australian Museum and the Powerhouse Museum (or the Museum of Applied Arts and Sciences) citing that such an amalgamation would result in more
effective coordination of overlapping functions and focus of the program roles in both museums (Paroissien, 2006).

Some museums, however, saw the budget pressure as an opportunity for organisational renewal. Financial crisis and recession that overtook Oakland, California for example, affected the Oakland Museum of California (OCMA) in its ability to provide salaries and benefits to 45 percent of museum employees who were also the city employees. The museum had experienced declining public support and the City of Oakland funded 45 percent of its annual budget with the remaining cost covered by the OCMA Foundation. During the time of the crisis, the museum management had to entertain the idea of significant employee lay-offs. The management saw an organisational restructure as a solution and worked on negotiations with the city council, resulting in full autonomy of the museum organisation by the OCMA. The arrangement provided the museum with additional funding for the next six months, delaying the process of laying off workers. During the trying time, matters involving staff were dealt with delicately with maximum transparency and two-way communication on the part of the museum manager (Merritt, 2013). Restructuring efforts focused on the improvement of processes and systems, redefined roles, creating collaboration, cross-functional structure in support of the museum future mission and vision. In addition, every job and task were reviewed and to reflect the change in the structure, every job description was rewritten. With a six-week frame of carrying out interviews and two years for restructuring as well as the daily running of the museum, OCMA believed that their new organisational design and structured worked better.

Digital museum and virtual museum presented another challenge to museum management. A prominent theme across articles which discussed museum management is the ongoing efforts undertaken by museums and galleries worldwide to digitize collections and virtualize museum space and environment (Li, Liew, & Su, 2012). The term digital museum was first proposed in 1991 by Tsichritzis and Gibbs (1991) and digital curation was coined in 2001 (Constantopoulos & Dallas, 2008). Li et al. (2012) explained that museums and galleries began to seriously document their artworks and collections digitally beginning of the 21st century. The virtual platforms provided museums with the opportunities to engage with their visitors efficiently in a timely manner and without physical and space limitations (Li et al., 2012). The technology also protects rare and expensive artworks and collections.
whilst enabling the visitors to view them digitally (Yang, Zhang, & Jiang, 2015). Beer (2015) and Gurian (1995) agreed that digitized collections have huge potential in increasing the time visitors spend engaging aesthetically in collection, Beer (2015) reported that visitors took, on average, less than a minute appreciating a collection.

Despite the benefits, digital and virtual museums posed dilemma to museum managers, primarily because they discouraged visitor participation leading to physical isolation of museums and galleries from the society (Li et al., 2012; McMullen, 2006). Mullen (2006) identified affect and proportion as two challenges in the use of digital tools in museums and galleries. Digital collections may lead to the loss of affective power. Examining a digital version of a piece of Mayan pottery, for example, may not trigger the same level of amusement, emotion and aesthetic expression than the kind of affect visitors would experience by being in the museum and looking at the object physically. Mullen explained that digital replications may lead to the issue of proportion. She used the portrait of Mona Lisa as an example in her discussion, how people who saw the actual portrait were surprised that it was smaller than expected comparing to the usual reproduced sizes. According to Mullen, digital reproductions add size indeterminacy, the size of object portrayed is dependent on the digital developers. She stressed the importance of scale accuracy in bringing about appropriate affective response and in the provision of cognitive stimulations in relation to the object’s uses, limitations and role in the society.

2.3.3. Program Evaluation

Many of the evaluation processes undertaken to appraise the effectiveness of museum programs were carried out upon program completion. However, a number of authors (Downey, Delamatre, & Jones, 2007; Korn, 1994), suggested that such an evaluation did not provide a comprehensive outlook of what the audience expected from a particular program. Korn (1994) stressed that timely and systematic evaluation is necessary in feeding key information for decision making: visitors’ perspective that heavily influence program effectiveness and drawbacks, which then enabling continuous improvement to be carried out. Korn identified three evaluation types appropriate for public programs and museums of any structural designs: front-end evaluation, formative evaluation and summative
evaluation. Korn placed greater emphasis on formative evaluation which provides diagnostic information about the strengths and weaknesses of a particular program rather than on evaluation strategies that are summatively structured. In addition, Downey (2007), proposed that programs, either public or education programs, carried out at museums took into consideration input from the audience before a particular program is developed, during development and upon completion; or what Downey termed as concept assessment, prototyping and post-installation.

The most common evaluation methodology employed includes the distribution of a piece of paper to museum visitors consisting of a series of questions that allow the visitors to indicate the extent of their agreement towards a particular subject being asked. Korn (1994) explained that such a method was preferred due to its cost-effectiveness, ease of administration and ease of scoring whilst still providing a sense of visitor general satisfaction. Alternative methodologies involved visitor observations and interviews. Regardless of how time-consuming and logistically constrained these two methods are, they provide richer and more in-depth information as compared to the use of pen-and-paper survey.

2.4 MUSEUM EDUCATION

The various educational roles that museums perform call for more attention to be given to education activities. In the past decade, enormous changes have taken place in museums and galleries across the world. Museums changed from being static storehouses for artefacts into the active learning environment for people (1994). Greenhill (1994) added that the change in function meant a radical reorganisation of the whole culture of the museum including staff structures, and attitudes and work pattern to accommodate new ideas and new approaches. Hence, the term museum education was coined to illustrate and describe the museums commitment in promoting teaching and learning processes in their organisation.

2.4.1 The Educational Roles of Museums and Galleries

Traditionally, museums had been built to house collections, and for ancillary functions such as storage, conservation, administration and a mean of enlightenment to society (Merkel, 2002). Museums
and galleries, however, could offer a range of opportunities for formal and informal learning, active participation and engagement due to the unique atmosphere of museums as compared to the ordinary school setting. Many writers (Bonner, 1985; Caston, 1980; Dobbs & Eisner, 1987; Eisner & Dobbs, 1988; Hooper-Greenhill, 1994; Tišliar, 2017; Wittmann, 1966) agreed that museums can be vital assets in education. Unlike any other educational institutions, museums and galleries had so much to offer, for example, visitors were given the freedom to explore and walk through exhibitions and displays freely according to their interest and this made museums and galleries unique (Edson & Dean, 1994).

The review of literature pointed several educational roles performed by museums and galleries: repositories of objects of and for public knowledge (Usherwood, Wilson, & Bryson, 2005); collection of objects for teaching resources (Bonner, 1985; Caston, 1980; Hooper-Greenhill, 1994); location for training and internship programs (Bonner, 1985); location for research process (Storr, 2000); and an agent for cultural education (Earle, 2013).

2.4.1.1 Repositories of Objects of and for Public Knowledge

The transition from an industrial to an information-wealth period has pushed museum archives and libraries to re-assess how these cultural institutions should function and how they could operate in ways that enhance the understanding of society. Usherwood et al. (2005) carried out a study examining how public perceived, valued and used archives, libraries and museums as sources of knowledge in obtaining information relating to contemporary social issues. The findings revealed that the most frequent visitors for museums were children, students of higher learning institutions and retirees.

Eisner and Dobbs (1988) perceived objects exhibited in museums as having educational quality. The authors used the term silent pedagogy in museums to refer to the non-spoken information provided by the objects with cues for perceiving, thinking about and appreciating particular works of art. In their study, silent pedagogy involved the way objects were displayed, the themes related to one’s work to others, the content of signage including wall panels and labels provided by the museums, comprehensibility and visibility of the text and the overall effectiveness of the installation. Sharing similar view with Eisner and Dobbs (1988), Greenhill (1994) also viewed objects in museums as having the quality to disseminate valuable information.
2.4.1.2 Collections of Objects for Teaching Resources

Bonner (1985) viewed museums’ potential as having valuable objects for teaching resources by incorporating exhibits and specimens into the extant curriculum. Caston (1980) felt strongly that objects in museums could be utilised to present more than just facts to the visitors. He argued that learning about objects can be educationally compelling and exciting but to learn from objects can stimulate even higher levels of learning. Objects, if used correctly, are able to promote and generate learning. Through the study of objects, visitors as learners were able to learn about cultures, the value of such objects to its society and community, its purposes and functions. Objects have the capacity for stories of joy, sorrow, civilisation, achievement and success and interaction with objects would heighten the learners’ understanding of society (Caston, 1980).

2.4.1.3 Venue for Training and Internship Programs

Bonner (1985) emphasized the similarities of goals shared by museums and educational institutions such as schools, colleges and universities and these common goals could push institutions to collaborate in educating the public. Therefore, he suggested that museums provided ideal settings for training and internship programs involving colleges and other educational institutions. He urged these institutions to play a more pro-active role in enhancing the learning and teaching environment.

2.4.1.4 Location for Research Purpose

Storr (2011) highlighted the potential of the museum as a research location. Studies conducted in museums could stretch to many disciplines including visitors’ study, object and artefacts could become rich source of research. In relation to studies in museum education, measurement of learning, pattern and response from visitors were frequent topics studied. Storr elaborated that museums offer studies in both qualitative and quantitative fields, with varied and rich disciplines, from philosophical inquiry to an abstractive question of professional values and working hypothesis.
2.4.1.5 Agent for Cultural Education

Cultural education is a term which encapsulates museums, galleries and their relationship with the arts (Earle, 2013). The focus on culture has been considered a new museology and the discussion of this role undertaken by museums presented strong association to issues related to social exclusion and civic disengagement among the younger generations (Earle, 2013; Hooper-Greenhill, 2000; Xanthoudaki, 2015). Earle (2013) believed that such focus could potentially increase museums’ relevance in the communities and provide a medium for creative pedagogy which enhanced the process of meaning making (Xanthoudaki, 2015).

2.4.2 Education Programs in Museums

John Dewey’s philosophy on education was often cited as a precursor to learning through experience (Cole, 1988; Falk & Dierking, 2000; Fuller, 2005; Hein, 2004; Kotler & Kotler, 2000). Dewey recognized the importance of prior learning in making meaning to new experiences and strongly emphasized the relevance of culture to experience (Cole, 1988). Dewey’s support for constructivism and the role of culture in learning opened up the possibilities and increased relevance for the museums to showcase their objects in a manner that was more meaningful than a mere passive walk around exhibits (Hein, 2004).

Hein (2004) wrote that the emergence of museums actively designing, promoting and implementing educational programs was a common concept for the museum movement in the twentieth century. He posed a challenge for museum administrators to provide for programs that offered meaningful learning experiences that were beyond doing. Exhibitions organised should be able to ignite inquiries, spur thinking and enable the visitors to make connections between prior knowledge and new information.

The educational role undertaken by museums had changed considerably since the 1990s (Griffin, 2011). Museums also changed the manner in which information was delivered to the school audience. In the past, programs that required students to sit and listen to the information presented while they passed around objects and specimens were considered ‘educational’. Such programs have long disappeared, and a program was viewed educational if it fulfilled curriculum demands. The education
programs in museums were embedded with experiential elements that had greater emphasis on the process of learning rather than outcomes.

Falk and Dierking (2000, 2016), the advocates for free-choice learning when it comes to education programs carried out in museums, stated that learning in museums offered a greater flexibility due to its informal structure. The authors viewed learning in classroom, unlike learning in museums, as contrived and formal framed by a structured curriculum. Free-choice learning, according to Falk and Dierking, could take place at any setting, during leisure time and can be personalized according to an individual’s need. Griffin and Symington (1997), on the other hand, suggested that learning in museums was within the spectrum of formal to free-choice learning, and the learning in museum complements classroom content and activities.

The review of the literature indicated that museum educators were open in their view of how teaching and learning should be carried out. In fact, it was difficult to narrow learning to a particular theory of learning given the diverse motivations behind coming to a museum. Though Falk and Dierking (2000, 2016) pointed out the emphasis on cognitive and affective domains in education programs implemented in museums, further review of literature showed that the domain of learning in which the museum educators engaged in depends on the nature of the topic as well as the nature of the museum itself.

Museum educators were also flexible in carrying out their instruction. They would adjust their pace and complexity of their content based on students’ responses, engagement in learning as well as motivation (Falk & Dierking, 2000, 2016).

### 2.4.3 Theories of Learning in Museum

It is difficult to place a particular theory that solely describes the learning process in a museum. Most of the theories and models of learning employed within a museum setting have their base on formal learning experiences in schools and were then adapted to explain learning in museum setting. These theories have greater focus on explaining learning, rather than detailing how teaching in the museums should be carried out. The following discussion of theories of learning is based on theories
that focus on cognitive development, theories that detail the role of social interaction, those on learning tasks as well as theories on learning abilities of the learners.

2.4.3.1 Theory on Cognitive Development of Learners

One of the most influential cognitive theories was brought forward by Jean Piaget, through his Theory of Cognitive Development (Piaget & Cook, 1952). Piaget’s theory provides valuable information to teachers in the planning of lessons that are age appropriate and the ones that consider learners’ developmental stage.

2.4.3.1.1 Theory of Cognitive Development by Piaget (1952)

A Swiss biologist and psychologist, Piaget was interested with how people come to know and how children think. He was amazed with children’s ability to do abstract symbolic reasoning, with different levels of skill and maturity at different ages the children are in. Piaget described children’s development and their cognitive ability through four main stages: sensorimotor, pre-operational, concrete operations and formal operation stages. Each stage represents a child’s range of age, starting from birth until the cognitive operation fully developed around the age of 15 years old.

The first stage that any child goes through is the sensorimotor stage, which the child experience up to two years old. Piaget conceptualized the presence of schemata or reflexes operating from birth and it helps the child to adapt to the environment. Learning, according to Piaget, develops through the process of assimilation and accommodation. Assimilation refers to the organisation of new information into the child’s existing schema, whilst accommodation is employed when the child needs to modify their existing schema in order to accommodate the new information. In the sensorimotor stage, the child has the capability to differentiate himself/herself between other objects.

The Pre-operational stage begins when the child enters the age of two to four years old. In this stage, the child is not yet able to understand abstraction, however has gained the capacity and thinking that enable them to deal with concrete objects and concrete physical situations. Recognition of an object is based on their ability to identify its important features. The use of language improves, and the memory
and imagination become sharper. The thinking is characterized by non-logical thoughts and egocentric thinking.

When the child is in concrete operational stage (elementary and early adolescence), their ability to deal with abstraction improves significantly. The child has the capacity to conceptualize and think abstractly, generate logical structures that explain the physical experiences. Specifically, thinking is logical with mental actions that are reversible, and the egocentric thought diminishes.

The formal operation stage is the final stage for full development of cognitive functions and takes place when the child is between the ages of 11 to 15 (adolescence and adulthood). The cognitive maturity is signified by the child’s ability to employ deductive and hypothetical reasoning and are able to deal with complex abstract thinking in a manner similar to adult.

Piaget’s theory has influenced the development of curriculum for many pre-school and primary school programs. An understanding of Piaget’s stages of development assists teachers to interact and communicate with children more effectively.

2.4.3.2 Theories on Social Interaction of Learners

The conception of constructivism as one of the major theories in learning places great value on the role of social interaction in bringing about learning. Constructivists believe that learning capacity is not innate, rather it is the product of the learner’s interaction with the immediate environment. This section presents two theories utilised within museum settings: The theories of Social Constructivism and the Contextual Model of Learning.

2.4.3.2.1 Vygotsky’s Theories of Social Constructivism

Vygotsky proposed a number of theories that stressed the importance of cultural and social interactions in bringing about learning and cognitive development, among other the Social Development Theory, Social Constructivist Theory and the Theory of Cognitive Development. These theories place guided interaction with the environment targeted at student’s level of learning readiness as fundamental to learning.
Vygotsky’s theories stress a number of key aspects for effective learning: zone of proximal development (ZPD), more knowledgeable peer, scaffolding and authentic activities. The zone of proximal development is defined as a point in learning that represents the area in which students are able to learn and are yet able to learn (in other words a collection of topics or skills that students have and have yet to acquire). ZPD represents learning readiness in which any topics or skills taught at this point would generate more optimal learning (Burbules, 1992). Griffin (2007) stated that the area should be the location in which teaching and intervention is targeted. Assessment data is one of the resources that teachers can utilize in identifying students’ ZPD (Griffin, 2007; Zakaria, Care, & Griffin, 2016).

In providing for an environment that could potentially create learning, social interaction that a learner experiences must be guided by a more able peer. This peer can be a parent, a teacher, a friend who knows more, a technology, a new environment, etc. A more knowledgeable peer would be able to provide the learner with new information that can potentially spur learning. This new information is delivered through the demonstration of ideas, positive values, techniques, strategies in which the learner could internalize. Vygotsky viewed the important role of adults as a source for cognitive development and their ability to assume the role of more able peer in assisting learning.

Scaffolding refers to customized assistance provided by a more able peer introduced at the point of learning readiness (ZPD). According to Vygotsky, assistance or guidance provided by teachers would be meaningless if the teachers fail to identify individual ZPD of the students. The pace of learning and mastery of knowledge are different between one student and another, with some students learning more than others even though they are introduced to the same instruction. Hence, scaffolding efforts should be customized at an individual level and the only way to do this is by identifying individual ZPD.

The element of social constructivism embraced by museums is demonstrated through exhibits that are arranged in a manner that enables visitors to generate meaning by interacting with the exhibit (Hein, 1995). Hein added that such arrangements would promote the visitors to think and critique as well as make connections between what is exhibited and their prior knowledge.
2.4.3.2.2 Contextual Model of Learning by Falk and Dierking (2000)

Falk and Dierking first developed the Interactive Experience Model in 1992 which suggested that the museum learning experience consisted of three overlapping elements: personal, sociocultural and physical contexts. The model however was reviewed and in 2002 Falk and Dierking produced the Contextual Model of Learning (CML) which comprised four main elements which are the personal, sociocultural, physical and time contexts (figure 2.1). Falk and Storsdieck (2005) believed that the model is useful in explaining learning within free-choice setting. The model serves as a framework for thinking of learning and the emphasis is on both processes and products of the interactions between personal, sociocultural and physical contexts over time (Falk & Dierking, 2000).

![Figure 2.1: Contextual Model of Learning by Falk and Dierking (2000, 2016)](image)

Built upon John Dewey’s view of constructivism and Vygotsky’s Social Interactive Theory, CML posits that museum visits leave a profound memory and connection in relation to cognitive and sociocultural aspects. The overlap between the first three aspects indicate that connections are made between personal context, physical context as well as the sociocultural context in producing a meaningful and memorable experience.

Falk and Dierking (2000) explained that the personal context, such as prior knowledge, interest, expectation and motivation for the visit, influences the interaction with the object or exhibit as well as
other aspects that occur during the visit. In other words, greater prior knowledge and strong interest and motivation for the visit would result in greater interaction with the object. The museum also provides social opportunities for the visitors in the sense of making new contact with other museum visitors, visiting the museum with friends and families and interaction with the museum staff and personnel. This, according to Falk and Dierking, creates a sociocultural context emphasized by the second element of the model. The physical context in the model refers to the physical aspects of the museum such as the building, gift shop, café, exhibits, space, lighting and climate.

Falk and Storsdieck (2005) have identified 12 key factors within the model that can potentially influence successful museum learning experiences, derived as findings from a substantial amount of studies. The 12 factors are:

**Personal Context**
1. Visit motivation and expectations
2. Prior knowledge
3. Prior experiences
4. Prior interests
5. Choice and control

**Sociocultural Context**
1. Within group social mediation
2. Mediation by others outside the immediate social group

**Physical Context**
1. Advance organizers
2. Orientation to the physical space
3. Architecture and large-scale environment
4. Design and exposure to exhibits and programs
5. Subsequent reinforcing events and experiences outside the museum

(Falk & Storksdieck, 2005, p. 747)
Studies carried out to investigate the usefulness of CML document varied findings. Falk and Storksdieck (2005) carried out a study on the visitors of California Science Center’s World Life exhibition and employed CML as a framework in measuring learning. The findings reported that all visitors experienced improved learning of science life, and factors such as prior knowledge, motivation and expectations (personal context); advance organizers and exhibition design (physical context); were the strongest factors that influenced learning. The study also found that the more prior knowledge visitors have about the exhibit, the less amount of learning would occur; and vice versa. Interestingly, low prior knowledge also influenced higher interest for the exhibition among the visitors sampled. The study pointed out that the findings derived supported the values promoted by CML as an operational framework.

Chang (2007) analysed the process of meaning making among students of Indiana University during a highly structured tour at the Indiana University Art Museum (IUAM) through the CML lens of Falk and Dierking (2000). She was interested, primarily, in finding out how students construct personal meanings from the museum experience. Case study and qualitative methods were utilised in collecting, analysing and interpreting the data, in which CML’s framework was used in interpreting findings. Chang’s findings aligned with CML in which visitors’ personal context acted as a major determinant in filtering museum experiences, mediated by their socio-cultural contexts and influenced by the physical context of the IUAM. Chang, however, found that factors such as motivations, beliefs and cultural background as unrelated to the process of making meaning, hence contradicting the key factors identified by Falk and Dierking (2000) as essential to meaningful museum experience (Chang, 2007).

A study by Costa and Almeida (2015) examined the effect of learning in a museum among 15 primary school students with disability. Students were presented with science-based activities and intervention strategies for two months in Ponto UFMG Itinerant Museum, Brazil. Specifically, the study was interested in investigating the learning process mediated by cultural exhibits in the museum and the scientific content of the curriculum. CML was used as a framework for analysing the data. The findings indicated that all students experienced improvement in learning through qualitative and
quantitative means; and their background, cultural identity and emotional values became the precursor for motivation in learning in museum.

2.4.3.2.3 6P Model of Museum Learning

The 6P Model of Museum Learning situated museum learning within the frame of six interrelated concepts: person, people, product, place, purpose and process (Kelly, 2007). The model of museum learning was produced based on the findings of a study which examined museum visitors’ learning identities and the model aims to specifically describe the learning experiences gained from museum visits (Kelly, 2007).

![Figure 2.2: The 6P Model of Museum Learning](image)

**Person**

The first aspect of museum learning identified by Kelly is *person*. This first category explains the characteristics of individuals that influence learning experience such as prior knowledge, experience, the role they played as an individual and as part of a community, gender, cultural background, lived history, interest, change, view of the world and how they see things and make
meaning. The learning frameworks that underlie educational activities in the museum, argues Kelly, are framed and built around the learning aspects of individuals.

**People**

*People* are the essence of learning and the learning activities in the museums should be geared to meet the needs of its visitors. Kelly clarifies that the participants in her study experienced learning with and through others by the process of interaction with the content of exhibition and other people in the group. She identifies family, friends, colleagues, community, and the professionals involved in educational activities in museums such as the museum staff and teachers as the people who are part of the learning experience in the museums.

**Process**

Kelly explains that learning is experienced through the *process* of ‘acquiring and gathering something, for example, information, skills or knowledge, and doing something with it, such as understanding, applying, expanding, discovering, assimilating, experiencing and exploring’ (Kelly, 2007). Hence, the process in the model refers to the length and the activities within it during learning.

**Purpose**

*Purpose* is closely associated with the person and process, two other aspects in the model. It is described as the motivation that drives a visitor to learn and this include a person’s general interest, enjoyment and fun.

**Place**

In the 6P model, place is associated with physical location as well as the ambience that this location creates for conducive learning.

**Product**

Interestingly, ‘product’ in the model does not refer to the services offered by museum institutions, rather focuses on individual learning experience derived from the interaction with education-based programs in museums. In addition to the acquisition of facts and new ideas, Kelly
associates this learning experience to the notion of change, primarily on how museum learning affect deeply-held attitudes and the way it affects visitors’ perspectives.

2.4.3.3 Theory on Learning Activities in Museums

George Hein (1998) developed a theory for museum education that takes into consideration the effect of physical layout of the museum (including the arrangement of the exhibits) on visitors’ learning. He proposed the Museum Education Theories Model in 1998 to demonstrate the relationships between behaviourism and constructivism in providing for an effective museum education program.

2.4.3.3.1 Museum Education Theories Model by Hein (1998)

Hein’s (1998) theory sees the marriage of two major theories in education: behaviourism and constructivism and proposed four elements that become the foundation for his Museum Education Theories Model (METM): traditional, behaviourism, constructivism and discovery learning.

![Museum Education Theories Model by Hein (1998)](image)

Figure 2.3: Museum Education Theories Model by Hein (1998, p. 25)

Built on Dewey’s philosophy of education, Hein (1998; 2004) viewed learning as an active process that requires the learners to activate both their mental and physical attributes. Education-based programs should be organised to inculcate critical thinking yet lending to one right answer or one correct
interpretation. Activities organised should enable the learners to be a part of to invite active participation (Hein, 1998).

In the past, curatorial procedures for artworks tended to formulate a fixed and single meaning. This is so as artworks represent a particular culture and the display of such exhibit often requires the audience to form an interpretation, rather than a perception (Griffin, 2011).

Hein’s (1998) view of museum learning is inspired by a number of aspects, primarily Skinner’s Behaviourist Theory (Vargas, 2017) and Gagne’s Instructional Design Principles (Khadjooi, Rostami, & Ishaq, 2011), which take root on behaviourism. Hein (1998) believed that reinforcement is a powerful tool in encouraging learning and an advocate for operant conditioning. He also stresses setting the learning environment traditionally, requiring the exhibits to be properly labelled and learning elements to be ordered from the simplest to the most complex tasks (Hein, 1998).

Hein’s (1998) view on the traditional museum and how the exhibits are structured according to its order of complexity are the most common way for museums to curate and design their exhibitions. For example, Louis Agassiz structured the classifications of animals in the Harvard Museum of Comparative Zoology from the least complex to the most complex as it was viewed to assist the process of making meaning. The National Portrait Gallery in Washington D.C. organised their paintings according to chronological order based on the belief that such order is the most appealing to visitors. The Deutsches Museum in Munich also employed the same method in demonstrating the structure of sciences (Hein, 1995).

2.4.3.4 Theories on Learning Styles

There are two theories presented in this section which describe learning styles and preferences with regard to classroom learning which are transferable to museum education.

2.4.3.4.1 Theory of Multiple Intelligences by Gardner (1983)

Howard Gardner (1983) posit that humans possess multiple intelligences and these intelligences (depending on a person’s inclination) influence their cognitive processes which dictate the way they process information, learn and view learning. Gardner stressed that these intelligences vary between
individuals. These qualities, through various prolonged stimuli, can be strengthened or weakened. In his book, *Frames of Mind: The Theory of Multiple Intelligences* (1983), he introduced seven multiple intelligences and the understanding of these intelligences could assist teachers in planning and carrying out lessons that are effective and appealing to all learners. The seven multiple intelligences are listed below:

i. Verbal-linguistic Intelligence

ii. Mathematical-logical Intelligence

iii. Musical Intelligence

iv. Visual-spatial Intelligence

v. Bodily-kinesthetic Intelligence

vi. Interpersonal Intelligence

vii. Intrapersonal Intelligence

In 1999, Gardner published *Intelligence Reframed* which contains two added intelligence:

viii. Naturalist Intelligence

ix. Existential Intelligence

Gardner (1983) views each intelligence as a strength in learning. Teachers who manage to identify the learning strength and target the teaching accordingly would trigger learning in the most interesting way to the students (Gardner, 1983).

Students who have an inclination for verbal-linguistic intelligence manifest learning dominance related to language competency such as reading, writing, listening and speaking. Gardner (1983) indicates the nature of most classrooms supports students with verbal-linguistic intelligence due to the traditional teaching method and assessment process that focus on talking and writing.

Mathematical-logical intelligence is prevalent for students who have strong interest for aspects of learning involving analytical reasoning, problem solving, numbers and arithmetic-related activities (Gardner, 1983). Again, according to Gardner (1983), students often excel in these kinds of lessons due to their logical structure and the need for all students to achieve a certain level of competency in mathematics.
Children who have musical intelligence learn better if the teaching is accompanied by songs, rhythms and musical expressions and lessons place an emphasis on the use of instruments, composition and appreciation for musical patterns. However, lessons that are structured around musical intelligence often take place during pre-school and elementary years, and slowly diminish as students move to higher levels of learning (Reinhard, 2015).

The visual-spatial intelligence enables learners to view the visual world with accuracy and this influences their ability to design and measure and possess aptitude in arts and craft. Lessons appeal more to learners of this intelligence if teachers illustrate their teaching with maps, charts, graphs and attractive visuals (Gardner, 1983).

Learners with bodily-kinaesthetic intelligence would be able to actively engage in lessons that stimulate their physical strength. Central to learning are activities that are hands-on, game-based, require students to move or build. A traditional method to learning does not work well for these students and they may find the lessons to be uninspiring and ineffective (Gardner, 1983).

Interpersonal intelligence refers to learners who value learning activities that are collaborative in nature, and these include tasks such as groupwork, teamwork and idea presentation. These learners operate better when they work with others, the social element to learning results to greater learning outcomes to the students. They have to talk their ideas through and involve in discussion for learning to materialize (Gardner, 1983).

Learners with intrapersonal intelligence have learning preferences that contradict learners with interpersonal intelligence inclination. These learners work better when they are given the opportunity to engage in their own thoughts, emotions and feelings. The learners are intuitive and do not need social conformity in generating ideas and solving problems (Gardner, 1983).

The naturalist learners prefer learning activities that bring them closer to nature. Interestingly, according to Gardner, learners may not necessarily be born with naturalist interest but may develop it later in life with the interest to pursue it further. People with naturalist preference love outdoor activities and learning tasks that require them to appreciate the nature such as plants, weather, oceans, animals, mountains, etc. are perceived as the most engaging and appealing (Gardner, 1983).
Learners with existential intelligence possess the intelligence to understand people and the world around them. Such intelligence triggers critical thinking in the learners to question and explain phenomena with philosophical view, particularly relating to life, death and beyond (Gardner, 1983). He suggested teachers who plan lesson for existential intelligence learners to select topics that could harness different point of view and generating thinking that looks at the big picture.

2.4.3.4.2 4 MAT Instructional System by McCarthy (1980)

Bernice McCarthy in 1980 proposed a model that describes the relationships between learning styles and right-left brain dominance. McCarthy used Kolb’s Learning Style Inventory (1976) and Your Style of Thinking and Learning by Paul Torrance (1978) in studying 329 high school students in relation to their styles of learning and their activated brain hemisphere.

The findings led her to four types of learning: analytical learners, common sense learners, innovative learners and dynamic learners; and within each learner might either have integrated-hemisphere, right or left-brain dominance. This information is essential in developing the 4MAT Instructional System consisting of an eight-step cycle which represents the four learning styles and the right-left hemisphere of information processing. The model consists of nine categories that can be used to guide teachers in using 4MAT Instructional System successfully: learner’s type; learner’s preference in viewing information; question types learner asks himself/herself; learning concerns that learner has; learner’s strength, learner’s process and his/her particular quadrant used; and the purpose of the hemispheric experience within each quadrant. The model is presented in Figure 2.4.
With a myriad of instructional approaches available, the challenges to museum educators are in mixing and matching content to appropriate strategies and targeting the lesson at a level appropriate to the school audience. Educators have to be proactive in meeting the increasingly complex needs of visitors in a manner that ensures that the lesson objective is achieved.

2.4.4 Instructional Approaches in Museum Education

There were several approaches that were distinctive to museum pedagogy and these approaches were the major discussions in the literature exploring museum pedagogy and museum programming. These approaches are discussed below.

2.4.4.1 Object-based Learning (OBL) Approach

The discussions of museum pedagogy include a reference to object-based learning (OBL) approach (Carr, Clarkin-Phillips, Beer, Thomas, & Waitai, 2012; Castle, 2006; Caston, 1989; Tran, 2007; Vallance, 2006) and many authors have proposed the approach as a framework for the public programs and education programs carried out in museums (Carr et al., 2012; Ng-He, 2015). The review of literature points out that the utilisation of the approach initiate discussions (Livingstone, 2003;
Moore, 1997) and promote aesthetic and cultural attitudes as well as values (Hooper-Greenhill, 2000; Nakou, 2001); stimulates senses, generates interests and increased engagement and participation in learning (Black, 2005; Dierking, 2002; Illeris, 2009; Lasky, 2009; Lindauer, 2003; Linell, 2009). Lasky (2009), Moore (1997) and Nakou (2001) add that object interaction allows visitors to connect with their previous knowledge and suggest that museum educators should employ objects in a manner that would affect learners’ view and understanding of the world.

Object-based learning approach is one of the many approaches under the broad umbrella of constructivist theory, and stems from the idea that people can learn from an object by exploring the object itself and its context. This approach is favoured by museum educators and is largely utilised as an instructional strategy in museums, both in exhibits and educational programs. The strategy is based on the belief that there is an interconnection between an object and the ideas it communicates (Durbin, Morris, & Wilkinson, 1990). This method of learning enables the participants to look directly at an object, be it a sculpture or painting, artefact or advertisement, primary document or ritual object; and using a myriad of questions, discover its roles and importance in our world, either past, present and future.

Rather than looking blindly at the object, the approach provides a systematic way of obtaining information about the object. There are five qualities of any object that a learner should be investigating: physical features, construction, function, design and value. Figure 2.5 provides a model of object-based learning approach (Durbin et al., 1990).
OBJECT-BASED LEARNING APPROACH

Figure 2.5: Object-based Learning Approach (Durbin et al., 1990)

Studies which explore the use of OBL show that the approach is often integrated as a means of supporting other approach or instructional framework. The varied nature and themes that objects represent contributes towards its flexibility of use. The OBL approach has been found to support inquiry-based learning (Biggs, 2011; Chatterjee, 2011; Din, 2004; Durbin, 1989; Hooper-Greenhill, 2000; Mudd & Beran, 2003); as well as the narrative approach (Bedford, 2001; Biggs, 2011; Fisher, Twiss-Garrity, & Sastre, 2008; Giaccardi, 2006; Saroj, 2014; Staats, 2011; Trinkoff, 2015).

2.4.4.2 Discipline-Based Art Education (DBAE)

Discipline-based Art Education (DBAE) is a dominant approach in art education (Erickson, 2004; Greer, 1987; Stankiewicz, 2000). The use of the approach is flexible in accommodating art learning in any contexts and environments given the theoretical approach that DBAE represents and its lack of emphasis on curriculum (Brown, 2017; Lachapelle, 1997). Among the contexts which DBAE is commonly employed include museums and galleries (Dodd & Jones, 2014; Wexler & Wexler, 2012), and the approach is significant to museum educators as it enables the educators to structure their instruction on theoretical components (Dodd & Jones, 2014).
DBAE promotes art lessons that are different through the employment of new teaching methods which aspire new way of thinking (Stewart & Walker, 2005). The approach engages students in art exploration from the perspectives of four basic art disciplines: art production, art history, art criticism and aesthetic (Carritt, 2016; Lampert, 2006).

The first component of DBAE, art production, is critical to art programs and supports large numbers of instructional objectives in art lessons. Art production refers to the utilization of art tools and equipment creatively and the use of variety of media in producing artwork (Dobbs, 1992; Spratt, 1987). Central to the creative process are imagination and creativity (Blandy & Bolin, 2012; Davis, 2015; Fleming, Gibson, Anderson, Martin, & Sudmalis, 2016).

Art criticism encourages discussions about arts in facilitating for understanding of art forms and their social context (Anderson, 1991; Stinespring, 1992). Discussions, which can be in the form of verbal and written, involve interpretation, critical analysis and evaluation of art works in relation to elements and principles of design, style and media used. While a number of authors, such as Day and Hurwitz (2011), Lampert (2006) and Carritt (2016), associated art criticism with the cognitive domain particularly in the engagement of higher order thinking skills; Eskine and Kozbelt (2015) as well as Schabmann, Gerger, Schmidt, Wogerer, Osipov, & Leder (2016), view the component as critical in supporting the development of values within affective framework.

The third component, art history, emphasizes the importance of knowing and understanding of arts and artists in relation to the contribution to the societies and cultures (Dash, 2006; Kleinbauer, 1987; Mannathoko, 2016). Mannathoko (2016) stressed the significance of arts in influencing and shaping cultures and the communities who embraced these cultures. The historical perspectives enhance ones’ understanding of artists’ exploration with media, how artists established messages and emotions in their artworks, and most importantly, the philosophy employed (Kleinbauer, 1987).

Aesthetic concerns emotional expression towards the philosophical aspects of artworks and involves making judgements of a particular artwork in relation to beauty and the nature of art (Day & Hurwitz, 2011; Lankford, 2002; Ruggieri, 2013). Aesthetic is affectively driven and the goal is art appreciation, and this is often achieved through critical examination of epistemological origin, belief
and values which influence art production, art inquiry and interrogation of the nature of arts (Crawford, 1987; Day & Hurwitz, 2011).

2.4.4.3 Inquiry-based Learning Approach

Inquiry-based learning is also a commonly cited approach in museum pedagogy. It sits within an independent learning framework (Hepworth & Walton, 2009; Hutchings, 2007). Hutchings (2007) defines the term broadly as ‘any process of learning through inquiry’ (2007, p. 11). The approach immerses learners in the process of inquiry (investigation or research) and focuses on the learning process rather than the outcome (Hepworth & Walton, 2009). It allows learners to generate their own conclusion based on the synthesis of their findings. The approach is also found to foster skills related to collaborative tasks, critical thinking, communication and scientific investigation (Hepworth & Walton, 2009).

Inquiry-based learning has been widely employed in formal settings. Hattie (2008) finds that the approach leads to an increase in engagement and learning performance, based on the synthesis of his two meta-analysis studies. Many studies have explored the utilisation of inquiry-based learning in varied areas of learning. For example, studies by Case (2005), Friesen (2009), Kirschner, Sweller and Clark (2006), Scott and Abbott (2012), Shymansky, Hedges and Woodsworth (1990) and Wiggins (2005), to name a few.

The literature which discusses the suitability of inquiry-based learning to be used within the context of museum education is increasing in quantity. Studies which investigate its use and effectiveness, however, are rather limited. Nevertheless, its utilisation as a pedagogy in the implementation of education programs in museum is found to be effective. Biggs (2011) finds that museum space was effective in the utilisation of inquiry-based education among year nine students in assisting their understanding of national identities. Allen (1997) examines the effect of scientific enquiry activities on the museum visitors’ understanding of the scientific element behind an interactive exhibit. The activities generate an explanation, interpret an explanation, troubleshoot an explanation, chose between the two explanations, choose plus design a discriminating experiment, and make a prediction before experiencing the phenomenon. The visitors are guided individually in the employment
of the enquiry-based activities. The study finds that the approach is able to generate consistency and logic in visitors’ thinking. Interpretation activity is the most effective, and the least effective activity when visitors have to make prediction before experiencing the phenomenon. Kreuzer and Dreesmann (2016) replicate museum tasks (collecting and conserving, researching and exhibiting) in the design of their study involving an inquiry and activity-based learning in using biological collections to teach key evolutionary concepts. The study finds that students achieve the highest means for learning enjoyment involving tasks related to the collection.

2.4.4.4 Community of Inquiry (CoI)

Community of Inquiry (CoI) is a concept promoted first by Peirce referring to the community of scientists and later broadened by Dewey who employed its use within the context of education (Lipman, 2003). Definitions on CoI suggest that the approach is characterized as consisting of two aspects: a group of individuals, with a focus on process rather than outcome, and engagement in deep and meaningful learning. Museum Victoria (MV), on its website, for example indicated that the term represents a group of people (students, teachers, colleagues) who engage in discussion to achieve deep learning.

Garrison, Ander and Archer (1999, 2010) posit that an effective CoI is framed by purposeful educational structure which also takes into consideration the personal’s and group’s learning characteristics. Hence meaningful learning is the outcome of the interaction of three aspects of learning or what is known as ‘presences’: social presence, cognitive presence and teaching presence. The overlaps of these three presences produce deep and meaningful learning experience (Garrison et al., 1999). Figure 2.6 presents the independent elements and the intersections between the three presences which build an effective CoI.
2.4.4.5 Experiential Learning

Experiential learning allowed educators to work and identify learning technique that would best work with particular learning style. Kolb and Kolb (1999) point out that experiential learning can be integrated to meet multiple learning styles and multiple different intelligences. Kolb and Kolb (1999) explain that learners are represented by different types and preferences of learning: divergers (learning with emphasis on visual and emotions); convergers (learning with emphasis on cognitive development and neuromuscular movements); accommodators (learning which emphasized emotions and hands-on activities); and assimilators (learning with visuals which assisted thought development). Kolb adds that despite the different learning styles, any learning should incorporate active experimentation (doing), concrete experience (feeling), reflective observation (watching) and abstract conceptualisation (thinking). The approach provides a framework to educators and the aspects they need to consider in the development and implementation of education programs.

The use of the experiential learning approach as museum pedagogy had been cited as enriching the learning environment intellectually, emotionally, socially and culturally (Johnson, 2008). Johnson (2008) finds that the experiential learning approach enables students to explore specific topic based on their interest, enhance students’ knowledge of subject and generate better reflection about themselves.
and the community. Jonas (2011) found that the experiential learning approach sharpens students’ critical thinking skills and such opportunities are difficult to find in traditional classrooms. Both Johnson (2008) and Jonas (2011) measure the effectiveness of experiential learning based on the topics that are ongoing. McDougal (2014), however, finds that experiential learning is particularly useful to museum educators if the approach is utilised at the end of a particular learning unit.

2.4.4.6 Narrative Approach

Narrative approach is an approach which sees the use of storytelling as a means of lesson delivery. Storytelling needs to have a viewpoint for it to be effective (Gurian, 2006) and its structure consisting of beginning, middle and end should carefully be planned to incorporate the content intended (Bedford, 2001). Kelly (2010) reminded that objects without context or story would just be another ‘design pieces’, hence she stressed the importance of ensuring that each object can tell a story in order for it to be meaningful.

The discussions on the utilisation of narrative approach within the context of museum education describe the approach as powerful in enhancing visitors’ engagement of cultural and social history (Bedford, 2001; Coffee, 2007; Doering, 1999; Roberts, 2014; Rounds, 2004). Carefully executed storytelling would highly involve visitors, and connect the listeners’ thoughts, memories and feelings on the story. This would lead to an impactful and meaningful learning on the part of the listeners (Bedford, 2001; Roberts, 2014; Yanow, 1998).

But why does narrative work? Sitzia (2016) suggests a number of factors which emphasize the strength of the narrative approach as a museum pedagogy. First, people think in narrative and through narratives in the understanding of patterns, structure, motifs, etc. Second, given the nature of people who think in narratives, it is only natural that they remember in narratives. Hence, retention of knowledge is more effective when the information is imparted through narrative. And third, people construct their identity through narratives as well as their view of the world (Sitzia, 2016).

A number of authors discuss the ineffective use of narrative and caution the importance for educators to fully understand how narrative works. Allen (2004) indicates the lack of understanding among museum educators of how narrative could effectively be employed to foster significant learning,
particularly in the delivery of scientific concepts and principles. Gurian (2006) states that the narrative approach utilised in museums is not implemented in a way that realized its full potential. Gurian adds that senses such as ‘sound, smell, live performance and interpretation’ (p. 51) are primary aspects which can enhance storytelling, however there have yet to be museums which focus on these sensory fully.

2.5 MUSEUM EDUCATORS

Though the question of museum educator as a profession is still largely discussed by scholars and practitioners (Bailey, 2006; Czajkowski & Hill, 2008; Dobbs & Eisner, 1987; Ebitz, 2005; Nolan, 2009; Tran & King, 2007; William, 1989; Woollard, 2006) the field of museum education itself has been around for the past 50 years (El-Omami, 1989; Hein, 2005; Williams, 1996).

There is a myriad of education tasks that fall under the responsibilities of museum educators (Anderson, 2015; Greene, 2006; Griffin & Paroissien, 2011; Griffin, 2011; Johnson, 2009; Liu, 2000; Ng-He, 2015; Nielsen, 2015; Wetterlund & Sayre, 2009). Greene (2006) , in the discussion of museum roles and functions, stated up to 61 job descriptions that could fit into a particular museum, depending on museum type and size. The long list, according to Greene, reflected that a certain level of competencies and skill set is required to run a museum. For museum educators, the roles and functions include but not limited to programs for exhibition visitors during opening hours, as well as special programs outside opening hours; research and external partnerships; development of site-based and web-based educational materials and resources; outreach programs including modalities such as dance, theatre and music (Wetterlund & Sayre, 2009). Museum educators were viewed as individuals who are creative, flexible and adaptive with the content and pedagogy in carrying out education programs and were reflective, responsive and thoughtful of the needs of the visitors (Johnson, 2009; Talboys, 2016; Tran, 2007). In a study by King (2006), the educators with a natural history museum stated that their roles involved creating a learning environment comfortable for visitors, and integrated their own passion towards natural history to ignite similar interest among the visitors. A survey by Wetterlund and Sayre (2009) found that museum educators carry around an extensive amount of 45 different tasks: from leading tours, delivering lessons, developing public programs to establishing partnerships with government agencies and public sector. Woollard (2006) asserted that in order to understand the nature
of work of museum educators, it is essential to understand which groups are responsible for carrying out education tasks. Similar to museum educators, docents and volunteers also assume the role as educator and carry out teaching tasks.

The literature on museum education shows contrasting patterns in the roles and responsibilities performed by museum educators prior to 2000 and after 2000. Discussions on the roles and responsibilities prior to the year 2000 took didactic direction with lesson delivery characterized by lectures and the employment of teacher-centred strategies. For example, studies by Flexer and Borum (1984) and Parks (1985) noted the lecture-oriented lessons in the learning of science. Similarly, Cox-Peterson, David, James and Melber (2003), who examined the practice of trained volunteers in carrying out guided-based programs found the one-way interaction between the volunteers and visitors. Griffin (2011) addressed the nature of lesson delivery in Australian museums in the 1980s which required the educators to acquire specialist content knowledge, knowledge of collections and the ability to provide descriptions and advice in relation to labels, exhibits and publications. However, very little or no emphasis at all were given on teaching and learning processes.

The literature on museum pedagogy took a different turn in the early 2000, with many authors reported the preference towards instructional approaches and strategies framed by constructivist theories (Carr et al., 2012; Castle, 2006; Nielsen, 2015; Rose, 2006; Tran, 2007). King (2006) for example, identified the demonstration of plethora of pedagogical practices and strategies which helped the educators to match their lesson complexity to visitors’ level of learning. Similar to King’s findings, Tran (2002) found that educators considered students’ prior knowledge, interests and ability level at the initial phase of their lessons in ensuring that their pre-planned lessons were suitable to the student group. Rose (2006) outlined five concerns that museum educators had in the planning and implementation of education programs. They were knowledge production; adherence to a democratic ideal; the art and act of choosing knowledge; curriculum as text, and ethics of interpretation.

2.5.1 Museum-School Partnership

Successful education programs require museum educators to establish close relations with school teachers. However, the lack of meaningful ties between museum educators and school teachers
hinders effective implementation of education programs (Fuller, Wagoner, & Ruch, 2013; Griffin, 2011; Liu, 2000; Tal, Bamberger, & Morag, 2005; Tal & Steiner, 2006). Positive attitudes towards the museum and the belief that education programs carried out in the museum complement students’ school learning are the key for teachers’ commitment. Unfortunately, relationships between museum educators and school teachers are often one-sided, teachers would usually hand over the students to the educators and assume the role of passive observers (Dardanou, 2011; Liu, 2000; Tal & Steiner, 2006).

Unclear expectations of school teachers on the roles and tasks of educators as well as the unexpressed expectations that museum educators have on school teachers became a foundation for a partnership that is filled with frustration and dissatisfaction (Hicks, 1986). Hicks reported that museum educators viewed teachers seeing a museum visit as a field trip without any significant educational gain. On the other hand, teachers admitted to not being fully informed about the extent and breadth of the education programs offered, limiting them from fully utilizing the establishment as educational resources. Educators, too, were found to be too accommodative in their approach towards the disconnected teachers (Tal et al., 2005), even though they expected that the teachers assume a more active role prior and during the visit (Tal & Steiner, 2006). Unfortunately, this ‘more active role’ was limited to monitoring student disciplines and behaviours and the educators were not well trained on how to fully optimize teacher presence during lessons (Tran, 2007). Tran noted that the learning experiences provided in the museums were similar to the ones in schools and the only variable that is different was the venue. To this, Tran was troubled as museums should be able to provide for a learning experience that is unique and inherently different, which could not be replicated other than in museums (Tran, 2008).

The value of education programs on the learning experience may be outweighed by logistic considerations, among other, cost implication, student safety and well-being, parents’ approval, behaviour monitoring, justifications to principals (Griffin, 2011) and these are some of the factors that pull teachers back. Fuller, Wagoner and Ruch (2013) noticed that school teachers were overwhelmed with their own teaching duties resulting in hesitation to further complicate their job by bringing students to museums, and to incorporate museum resources into their instructional activities. The authors
indicated that a challenge to museums is to successfully attract teachers to repeat their visits to a point that they are comfortable in implementing follow-up lessons.

The first step is instilling a culture among teachers to utilize museums and galleries as resources for student learning. Gelles (1981) identified the relevance for teachers’ commitment for school-oriented museum education. Gelles explained that in the event when educators have to handle large demands with limited resources, teachers who are skilful in using museum exhibits and museum pedagogy may embark on the opportunity to implement their own lessons and programs. Furthermore, the established relationships between school teachers and their students made it easier for the teachers to extend the museum influence on students even after the excursion is complete. Having a clear expectation of the education programs, teachers may sufficiently prepare their students prior to the visit and carry out follow up activities in enhancing the learning experience.

2.6 SUMMARY OF THE CHAPTER

This chapter presents a review of literature with regard to the history and development of museums and galleries as establishments, and museum education as a field. The functions of the museum have evolved: from a place of safekeeping, to repository of objects for wonder and amusement, to a site for learning. The increasing roles that museums play within the learning communities have led to the establishment of curriculum-linked programs that complement and enhance learning in schools. Hence, museum educators deliver lessons requiring them to mesh content and museum pedagogy, targeting audience of specific age groups. The review of the literature indicated a collection of pedagogical theories and approaches suitable for education programs in museums; and given the world’s changing demographic, political and economic landscapes, museums are susceptible to various internal and external factors that require museums to strategically determine their future direction and their continued contribution towards the global society.
CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

Having now introduced the study, defined the research questions, and looked at some of the research and the literature related to the study, this chapter aims to establish the methodology and conceptual framework within which the study takes place. The study examines the education departments and education programs at the Museum Victoria (MV) and the National Gallery of Victoria (NGV). MV is a governing organisation for three of the museums investigated in the study: Melbourne Museum, Immigration Museum and Scienceworks. The participants include a museum manager from each of these institutions as well as a selected number of museum educators. The following sections present information with regard to research design and methodology employed in the study.

3.2 RESEARCH DESIGN

The selection of research methodology for this study began with the determination of a paradigm (Mackenzie & Knipe, 2006). Mackenzie and Knipe explained the importance of a paradigm as they asserted that a paradigm acts as a basis for subsequent choices regarding methodology, methods, literature or research design. In describing a paradigm in research, Creswell (2013) defined a paradigm as a ‘worldview’. It is regarded as a general orientation about the world and the researcher’s beliefs on the nature of research. According to Creswell, these worldviews are influenced by the disciplines and research experience of the researchers. The elements of a worldview affect the process of selecting an appropriate methodology in their study, either qualitative, quantitative or mix methods. Generally, four different worldviews are often the topic of debates and discussions: postpositivism, advocacy/participatory, constructivism and pragmatism.

The Postpositivist hold a deterministic philosophy in which causes probably determines effect or outcomes (Creswell, 2013). In a postpositivism paradigm, the social world can be analysed in the manner similar to the natural world, that there is a method for studying the social world that is value free, and that explanations of a causal nature can be provided (Mertens, 2007, 2015). Positivism is
normally predominantly used as quantitative approaches (methods) to data collection and analysis; and also known as ‘scientific method’ or ‘science research’ (Mackenzie & Knipe, 2006).

The advocacy/participatory paradigm holds that research inquiry need to be intertwined with politics and political agenda and agenda for reform that may change the lives of the participants, the institutions in which individuals work or live, and the researcher's life (Creswell, 2013). The advocacy/participatory paradigm allow for the application of both qualitative and quantitative research methods.

Interpretivist/constructivist approaches to research have the intention of understanding the world of human experience (Cohen, Manion, & Morrison, 2013). The interpretivist/constructivist researcher tends to rely upon the participants' views of the situation being studied. Constructivists do not generally begin with a theory as with post positivists rather they generate or inductively develop a theory or pattern of meanings. The researchers using constructivist approaches often favour qualitative data collection methods and analysis, or even a combination of both the qualitative and quantitative methods (mixed methods). They are normally successful in deepening the data description, through the utilisation of quantitative data in a way that would support or expand qualitative data. However, the researchers within the interpretivist/constructivist paradigm generally operate using qualitative methods.

The pragmatic worldview arises from the situation, action, and consequences and primary concern of pragmatism to solve the problems. Pragmatism is not committed to any one system of philosophy or reality (Mackenzie & Knipe, 2006). Pragmatism is essentially viewed as giving the underlying philosophical framework for mixed-methods research; refuting the fact that the scientific principles and the belief that social inquiry was able to access the 'truth' about the real world solely by virtue of a single scientific method. The pragmatic paradigm places ‘the research problem’ as central and applies all approaches to understanding the problem (Creswell, 2013). With the research question ‘central’, data collection and analysis methods are chosen as those most likely to provide insights into the question with no philosophical loyalty to any alternative paradigm.

This study takes the view of qualitative research within pragmatic paradigm. Creswell (2013) defined qualitative research as a mean ‘for exploring and understanding the meaning individuals or
groups ascribe to a social or human problem. The process of research involves emerging questions and procedures, data typically collected in the participant’s setting, data analysis inductively building from particulars to general themes, and the researcher making interpretations of the meaning of the data’ (p. 4). The pragmatic paradigm provides an opportunity for multiple methods, different worldviews, and different assumptions, as well as different forms of data collection and analysis in the mixed methods to be employed in the study (Creswell, 2013). Creswell added that pragmatist researchers focus on the 'what' and 'how' of the research problem. This study is geared towards the documentation of the matters pertaining to education departments within the museum and gallery as well as the education programs offered by these institutions. The provision of appropriate recommendations to the museums and galleries aimed to establish and implement education activities, through the examination of education activities carried out at the MV and the NGV. The pragmatist paradigm is fitting as the nature of this study is to look at possible recommendations in for museums and galleries.

3.2.1 The Strategy of Inquiry

This study utilizes case study as the main strategy of inquiry. Burns (2000) described a case study as the preferred strategy when ‘how’, ‘who’, ‘why’, or ‘what’ questions are being asked when the investigator has little control over events, or when the focus is on the contemporary phenomenon within a real life contexts. Merriam (1998) listed seven characteristics of a case study:

- A concern with the rich and vivid description of events within the case
- A chronological narrative of events within the case
- An internal debate between the descriptions of events and the analysis of events
- A focus upon particular individual actors or groups and their perceptions
- A focus upon particular events within the case
- The integral involvement of the researcher in the case
- A way of presenting the case which is able to capture the richness of the situation.

(Merriam, 1998, pp. 30-31)
An historical case study is a type of case study employed to identify the development of an organisation or system over time. This type of case study depends greatly on records, documents and interviews; and the researcher must have accessibility to these documents in order to obtain data (Irwin, 2000). Meanwhile, an observational case study is a type of case study used to observe a setting such as classroom, group, pupils or teacher by using a variety of observation techniques and sometimes supported by interviews as tools to gather data. In this case study, the researchers can become participants or observer in their observation process (Weiner, 1990).

The development and implementation of education programs in the MV and the NGV were discussed from an historical perspective and its current practice. A series of observations on the implementation of education activities in both organisations were carried out to obtain insights on the way the teaching and learning processes are accommodated and conducted by school teachers in line with the education activities designed by the museum officials. Interviews with these educators allow the author to obtain depth of information and probe more deeply into particular aspects of the education programs and the teaching sessions. In addition, document analyses enabled access to information with regards to policy and procedures.

3.3 THE CONCEPTUAL FRAMEWORK: 6P MODEL OF MUSEUM LEARNING

Denzin and Lincoln (1998) stated that all social studies are guided by theoretical underpinnings which are influenced by beliefs about the world and how it should be understood or studied. Robson (2002) believed that the key to any design of the study is the conceptual framework manifested by the system of concepts, assumptions, expectations, beliefs, and theories that supports and informs a study.

The 6P Model of museum learning introduced by Kelly (2007) frames the study. Kelly (2007) situated museum learning within the frame of six interrelated concepts: person, people, product, place, purpose and process; and hence proposes the 6P model of museum learning. This model serves as the theoretical framework for the study, assisting the researcher in conceptualizing the study in relation to the investigation of the education programs. The 6P model helps in the development of semi-structured interview items and the focus for teaching observations. The model also guides the thematic analysis process carried out on data derived from the interview sessions.
3.3.1 Person

The first aspect of museum learning identified by Kelly is person. This first category explains the characteristics of individuals that influence learning experience such as prior knowledge, experience, the role they played as an individual and as part of a community, gender, cultural background, lived history, interest, change, view of the world and how they see things and make meaning. The learning frameworks that underlie educational activities in the museum, argues Kelly, are framed and built around the learning aspects of individuals.

3.3.2 People

People are the essence of learning and the learning activities in the museums should be geared to meet the needs of its visitors. Kelly clarifies that the participants in her study experienced learning with and through others by the process of interaction with the content of exhibition and other people in the group. She identifies family, friends, colleagues, community, and the professionals involved in
educational activities in museums such as the museum staff and teachers as the people who are part of the learning experience in the museums.

3.3.3 Process

Kelly explains that learning is experienced through the process of ‘acquiring and gathering something, for example, information, skills or knowledge, and doing something with it, such as understanding, applying, expanding, discovering, assimilating, experiencing and exploring’ (Kelly, 2007). Hence, the process in the model refers to the length and the activities within it during learning.

3.3.4 Purpose

*Purpose* is closely associated with the person and process, two other aspects in the model. It is described as the motivation that drives a visitor to learn and this include a person’s general interest, enjoyment and fun.

3.3.5 Place

In the 6P model, place is associated with physical location as well as the ambience that this location creates for conducive learning.

3.3.6 Product

Interestingly, ‘product’ in the model does not refer to the services offered by museum institutions, rather focuses on individual learning experience derived from the interaction with education-based programs in museums. In addition to the acquisition of facts and new ideas, Kelly associates this learning experience to the notion of change, primarily on how museum learning affect deeply-held attitudes and the way it affects visitors’ perspectives.

3.4 SAMPLING AND PARTICIPANTS

The participants of the study consisted of four museum managers and eight educators from one art gallery and three museums in Melbourne. The National Gallery of Victoria (NGV) together with the
Melbourne Museum, Immigration Museum and Scienceworks were selected as the main organisations in which their education programs were the focus of the study. The NGV, being the largest and oldest gallery in Victoria was also the most successful in relation to its education and public programs (Murray, 2011; Westbrook, 1964). Museum Victoria, an organisation that governed the three museums studied was also the largest association of its kind in Australia.

The selection of the participants and the number of participants were determined by the top management of the museums involved, hence it involved purposive sampling under the non-probability sampling design. Before data collection commenced, approval for data collection process needed was sought from the MV and the NGV. The process required the researcher to carry out a presentation in front of the museums’ top management explaining the study along with its purpose, research objectives, research questions, procedures and significance. Table 3.2 details the number of participants approved by each museum.

<table>
<thead>
<tr>
<th>INSTITUTIONS</th>
<th>MUSEUM MANAGER</th>
<th>MUSEUM EDUCATOR</th>
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<tbody>
<tr>
<td>Melbourne Museum</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Immigration Museum</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Scienceworks</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>National Gallery of Victoria</td>
<td>1</td>
<td>4</td>
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<td>4</td>
<td>8</td>
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</table>

Table 3.1 Participants by museum institutions

The use of purposive sampling techniques under the non-probability sampling design was viewed appropriate as the findings derived from this study were not used to draw statistical inference, rather to harness in-depth understanding of how education programs were designed, planned, implemented and evaluated. Popham (2007) stated that studies with a purposive non-random sampling design were directed by a focus in mind in harnessing data from specific predefined groups.
3.5 METHODOLOGY FOR DATA COLLECTION

To achieve the stated objectives, multiple methods were employed as the primary data collection. The use of multiple methods for data collection was to strengthen the case study within the qualitative paradigm as well as to facilitate the process of data validation. Multiple methods, according to Burns (2000), have become a major strength of case study research. It allows for triangulation through converging lines of inquiry, improving the reliability and validity of the data and findings.

The role of triangulation is to increase the researcher’s confidence so that findings may be better imparted to the audience and to lessen recourse to the assertion insight (Fielding & Fielding, 1987). The study utilised several series of interviews, observations as well as document analysis to tap into required information.

The researcher’s face-to-face contact with the participants began with a teaching session followed by an interview session right after. This allowed the participants, in addition to answering the interview questions, to provide justifications and explanation on some aspects of his or her teaching. However, for a small number of museum educators, the interview sessions were carried out on a different day than the teaching sessions due to inevitable reasons such as the educators having a different group to teach right after the teaching for the observed group was over, session cancellation or the educators had commitments to another engagement to attend.

Before the data collection process was carried out, each participant was contacted either via phone or email in setting an appointment for an interview session and teaching observation. In abiding by ethical consideration, the interview questions were emailed in advanced prior to the interview session together with a consent form for the participants to sign.

3.5.1 Teaching Observation

An observation was carried out on lesson delivered by the museum educators who were involved in the study. It allowed for information about materials and environment, social behaviour of a group or individual to be collected (Onwuegbuzie & Collins, 2007; Patton, 1990). Burns (2000) stressed that the main strength of observation is that it allows for events and behaviours to be captured as it occurs. In the study, non-participant observation was employed in which the observer’s role is
passively watching and recording events without any involvement in and with the events that take place (Burns, 2000). This minimized interaction with the participants, allowing the researcher to focus unobtrusively on the stream of events and simultaneously records the participants’ behaviours in their natural setting.

In order to increase the reliability of the study, the researcher adhered to the use of observational protocols as a means of recording behaviours and the education activities carried out. Creswell (2013) suggested that the utilisation of observational protocols help in recording information during the observation. All teaching sessions were recorded via a voice recorder and the educators’ behaviours and pedagogical approaches were observed with an assistance of a checklist. This checklist helped in the identification of how the teaching sessions were implemented and the utilisation of educational theories, strategies and approaches by the museum educators. Therefore, the checklist consisted of a list of teachings behaviours which were recorded as either ‘observed’ or ‘not observed’, and an open-ended section for each behaviour. A synthesis of these observed behaviours provide an overview of the educator’s teaching styles and pedagogical approach.

Carrying out observation is not without its disadvantages. For example, private information during the observation process may not be reported in the writing because of the rules and restrictions (Weiner, 1990). There is also a possibility for the researcher to have issues with regard to participants who refuse to cooperate which may affect the validity of the data collected. This is highly likely in the case of dealing with children as participants (Burns, 2000). It is understood that a single teaching session provides limited window of an educator’s approach and style toward teaching, teaching observation only on a group of students does not fully justify the breadth of teaching experience and knowledge the educator possesses, and that the teaching behaviours not being observed during the observation period does not necessarily mean the absence of such behaviour in the educator’s teaching practice. Hence, the interview session enables the researcher to clarify the educator’s instruction. The recordings were used to check for consistency in the checklist whenever appropriate. Generally, the advantages of observation outweigh the disadvantages. The data obtained from observation is significant because it provides information of how pedagogical approaches are utilised in the educational activities. It also allows for people’s attitude and reactions to be observed.
3.5.2 Semi-structured Interview

The study employed semi-structured interview as one of its methodology for data collection. The interview enabled the participants to describe their situation and interpret the issue investigated in their own terms (Burns, 2000). The purpose of the interview was to gather a broad range of views and input on education programs in relation to its design and development and managerial aspects such as the organisational policies, financial considerations as well as partnerships and collaborations. In addition, the interviews allow the researcher to gather the interviewees’ experiences in relation to the implementation of education programs. A copy of the interview is included as appendix 1 and 2. In abiding by ethical consideration, the interview questions were emailed in advanced prior to the interview session together with a consent form for the participants to sign.

Specifically, the data collected via interviews involved information with regard to the following aspects/topics:

- Organisation’s education programs which involve administrative information such as organisational missions, goals and structure
- Organisation’s education policies and its implementation
- Museum educators’ experiences in handling teaching to visitors
- Budget allocated by the managements on organizing education programs in Melbourne Museum and National Gallery of Victoria (NGV)
- Related policies on education in museum and gallery
- Personal opinion and experiences in handling and coordinating education programs and activities in museum and gallery
- Theoretical approach in handling learning in museum and Gallery
- How budgets on education programs in museum are decided and planned.

For data recording procedures, digital audio recording and note taking were the instruments used to record the data. The interview protocol proposed by Creswell (2013, p. 140) was utilised to assist the researcher in facilitating the interview. Creswell proposed that the interviewer structures the interview in a manner that includes the following components:
1. Heading (date, place, interviewer, interviewees).
2. Instructions for the interviewer to follow so that standard procedures are used from one interview to another,
3. The questions (typically an ice breaker questions at the beginning followed by 4-5 questions that are often the sub questions in a qualitative research plan, followed by some concluding statement or a question, such as “who should I visit with to learn more about my question?”
4. Probes for the 4-5 questions, to follow up and ask individuals to explain their ideas in more detail or to elaborate on what they have said.
5. Space between the questions to record responses.
6. A final thank you statement to acknowledge the time the interviewee spent during the interview.

(Creswell, 2013, p. 183)

The interviews were transcribed, and the transcribed texts sent to the respective educators and managers for approval before they were analysed.

The transcribed texts were analysed thematically, and an open line-by-line coding system was employed in the determination of concepts and in building categories. Thematic analysis is widely utilised in qualitative research in the identification, analysis, organisation and reporting of themes in a data set (Braun & Clarke, 2006). The technique allows for depths of research participants’ insights and perspectives to be uncovered as well as the recognition of unanticipated themes or discussion; and yields trustworthy and insightful findings (Braun & Clarke, 2006; King, 2004; Nowell, Norris, White, & Moules, 2017). The identification of themes in the study was carried out deductively, the researcher approached the data set with a pre-existing coding frame in mind. This coding system was established primarily based on the research questions and the review of literature.

3.5.3 Document Analysis

In addition to the primary methods of data collection, secondary data is also essential in providing important information pertaining to the governance of MV and NGV, organisational vision and mission, purpose as organisational design and structure. The advantages of using document analysis as data collection is that the data retrieved from a document study can potentially provide background
and additional information about the organisation studied (Pershing, 2002). It also saves the researcher’s time and expense because document study comes in written form. Documents can be conveniently accessed by the researcher at his own time. The disadvantages of using documents as data collection is the possibility that some of the documents needed are confidential and not accessible. In reviewing and analysing documents, Pershing (2002) reminded that the researcher must keep in mind that the documents and records should be viewed only as information from another source or stakeholder that has no legitimacy or truth value than any other stakeholder.

Five documents related to MV’s governance and administration, as well as five documents pertaining to the governance and administration of NGV were selected for the analysis. The data derived from the documents were analysed thematically in which the research questions and the 6P Model of museum learning assisted in the determination of the themes. The analysis and discussion for this document analysis is presented in chapter six.

3.6 ETHICS CONSIDERATIONS

The ethics approval obtained from the RMIT University’s Ethics Committee enabled the researcher to approach the management of Museum Victoria (MV) and National Gallery of Victoria (NGV) and sought approval for sampling and data collection to be carried out in these museum institutions. Both museums, however, required that the researcher carried out a presentation in the Museum Board meeting, detailing the nature and background of the study as well as the nature of museum involvement and participation. The presentation provided the opportunity for the researcher to communicate the significance of the study and the importance of the museum managers and museum educators’ involvements. The selection of the participants was the outcome of the decision made by the management of both museum organisations.

The participants’ consent and willingness to participate were a consideration. The participants were informed of the role and nature of their involvement and they were requested to complete a consent form as evidence of their willingness to participate in the study. The date for the semi-structured interview for each participant and the date of teaching observation involving the museum educators were nominated by the participants themselves, the interview questions and a copy of the teaching
observation checklist were emailed in advance. A copy of the interview transcript was emailed to the participants following the interview session and the transcript and its content was approved by the participants prior to the data analysis.

Pseudonyms are used throughout this report to protect the museum managers and museum educators’ identity. Allen and Wiles (2016) indicated that the use of pseudonym heightens the psychological meaning towards the content and process of a study. This study honours the participants’ anonymity based on three aspects of the study outlined by Kaiser (2009). Confidentiality of the participants were addressed during the process of data collection, data cleaning and reporting.

3.7 SUMMARY OF THE CHAPTER

The chapter presents the research methodology employed in the study. Qualitative methodology framed the study through the utilisation of semi-structured interview, teaching observations and document analysis involving four museum managers and eight museum educators from the Museum Victoria and the National Gallery of Victoria. Teaching observation would enable the researcher to gather data with regard to the implementation of education program. The semi-structured interview sessions provided the opportunity to investigate aspects related to the design and planning of the education programs, methodology and pedagogy behind teaching, issues and challenges faced in the running of the Education Unit and the education programs. It also complements the data gathered from teaching observations. Finally, the document analysis allowed the researcher to identify information with regard to the administrative aspects of the museums and gallery, such as the mission and vision, organisational design structure of these organisations.
CHAPTER FOUR
ANALYSIS OF SEMI-STRUCTURED INTERVIEW DATA

4.1 INTRODUCTION

The study employed multiple methods of data collection which included the use of semi-structured interviews, teaching observations and document analysis. Each method of data collection provided different insights into the study, hence different perspectives were generated from the analysed data. The data gathered from the interviews involving the museum executives provided information that were directly related to answering the first two research questions that attempted to identify the structures, functions, resources as well as policies related to the organisation of education programs at each museum. Interview data involving the museum educators enabled the researcher to identify the pedagogical frameworks and orientations of the educators in relation to pedagogical philosophies, educational theories, teaching approaches and strategies. This information is highly significant for the third and fourth research questions listed in the study. The data derived from teaching observations complement the educators’ pedagogical styles and orientations, allowed the observations of the sequence and flow of the lessons, and enable the identification of aspects of instruction that could not be tapped via semi-structured interviews. Finally, document analyses provided direct evidence to the first two research questions that looked at the organisational and administrative aspects of the implementation of the education programs in each museum.

The focus of this chapter, however, is on the results based on data analysis gathered through the use of semi-structured interviews involving museum executives and museum educators from the participating museums and gallery. The analysed data derived from teaching observations and the document analysis is presented in the following two chapters, chapters five and chapter six.

As highlighted earlier, the focus of the study was on the education programs carried out in MV museums as well as the NGV. Therefore, the discussions of the analysed data are related to the organisation and the implementation of the education programs at the level of individual museums and there was no emphasis made on MV as a governing institution in the data and findings presented. Given the fact that the Melbourne Museum, Immigration Museum and Scienceworks were under the same
governance and operating via structural framework known as a networked organisation, the three museums operated generally in a similar manner. However, there were aspects of operation that were carried out differently, predominantly due to the nature of each museum that was distinctively different. For this reason, each museum was specifically examined as a single entity, and not as a group of museums under MV.

4.2 DATA ANALYSIS OF INTERVIEW RESPONSES

Semi-structured interview sessions were carried out involving museum executives as well as the museum educators of the four institutions involved in the study. The data were analysed thematically through the utilisation of an open line-by-line coding system in the determination of concepts and in building categories. Thematic analysis is a common analysis technique in qualitative studies employed in the identification, analysis, organisation and reporting of themes in a data set (Braun & Clarke, 2006; King, 2004). This is due to its flexibility in accommodating for analyses of studies in many disciplines; useful in making sense of large data set; particularly useful in studies which examine participants’ insights and unforeseen perspectives; and yields trustworthy and insightful findings (Braun & Clarke, 2006; King, 2004; Nowell et al., 2017).

In the study, the identification of categories, or themes, was carried out deductively. Deductive approach to thematic analysis involves the attempt to fit the analysis into a pre-existing coding frame (Braun & Clarke, 2006). The study established the coding system based primarily on the research questions and review of literature. Nine themes from the data set involving museum executives and eight themes involving museum managers were identified. One of the themes, role expectations, emerged during the analysis for the museum educators. These themes are listed in Table 4.1.
4.3 ANALYSIS OF INTERVIEW RESPONSES: MELBOURNE MUSEUM

The interview sessions were carried out involving a museum manager and a museum educator of the Melbourne Museum. The interview enabled a closer view at how the education programs were planned and carried out; explored the delivery of the programs, the methodological and pedagogical aspects embedded in each program, issues and challenges and the experiences of the museum educators.

4.3.1 Analysis of Data from Museum Executive: Susan Parker

The following analysis was derived from data gathered through two semi-structured interviews involving the Public Program and Humanities Manager of the Melbourne Museum, Susan Parker.

4.3.1.1 Demographic Information

Susan Parker had been the manager of Public Programs and Humanities at the Melbourne Museum for the twenty years when she was promoted to her current position in 1999. She holds both a Bachelor Degree in Arts and a Bachelor Degree in Teaching of English as Second Language (TESL), and first joined the museum in 1996 as a Learning Advisor. Her responsibilities included internal management and external liaison, overseeing 14 employees in her department and external organisations that had direct interests with the programs organised by the department.

Table 4.1: Themes for thematic analysis

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4.3.1.2 The Education Division

The following analysis details the roles and functions of the Education Division of the Melbourne Museum in relation to its portfolio, the administrative aspect as well as the planning and implementation of its education programs.

4.3.1.2.1 The Aim of the Education Division

Parker explained that the aim of the Education Division was to make real connections between the schools, the curriculum and the museum through museum content, exhibitions and research. This was achieved through the employment of museum staff who fulfilled a number of specified criteria. She explained,

First of all, we employ people who know quite a lot about curriculum, we try to get also people who have had some experience with cultural institutions such as art gallery, or museum, botanical garden or the zoo. That’s the sort of people we like, sort of people who have school and university experience plus cultural experience. They used to bridge that gap or ensuring there is no gap.

4.3.1.2.2 Mission and Vision

Neither the Education Division nor the Public Program and Humanities Department had a specific mission and vision. All the museums under MV shared the same mission and vision. All departments in each museum planned and implemented their programs and activities based on these shared mission and vision, and they do not form separate mission and vision statements at the departmental level. Operations at the Melbourne Museum had a focus on learning and the community, and this set the direction for the implementation of the education programs.

4.3.1.2.3 Staff and Job Responsibilities

The Education Division at the Melbourne Museum was a part of the Department of Public Program and Humanities. The department consisted of 14 staff members including the Public Program Manager, the Program Manager of Humanities, four museum educators (known as the Program
Coordinators in the Melbourne Museum), two Senior Program Officers, a Line Manager, Program Officers and several presenters. Some of the staff members were responsible for the development of public programs and the museum educators were responsible for the development of education programs. The responsibilities in the development of education programs included material development, training and professional development of teachers, connection with schools, etc. Though the senior program officers developed programs for general public, they also presented and delivered the education programs, and the presenters presented programs across all audience groups.

All of the staff members in the department were permanent. However, as some of the staff members were on maternity leave or on leave, short-term staff were recruited. In addition, the department also employed five to six casual workers or part timers to assist.

4.3.1.2.4 Recruitment

Parker believed that teaching experience was a valuable asset to the museum educators but not necessarily a requirement to work in the Melbourne Museum. She viewed that experience in communication more important. In relation to this, there were several qualities that museum educators must fulfil, having communication and project management skills and the ability to develop and deliver programs, possess knowledge of the curriculum, knowledge of issues and trends in education, the ability to work in teams and the ability to work independently and without supervision. She explained the overwhelming application for the post in the event of a vacancy,

As it turns out, practically everybody who applies has a degree at least one degree, not necessarily in education, just in all sorts of things. Might be archaeology, might be technology, everybody...we’ve just done a huge round of recruitment. We have nearly 500 applications, I would say of those 500, they would have been 490 with university qualifications, at least one degree. Although we don’t specifically say that you have to have university qualification, that seems to be the top people we attract.
4.3.1.2.5 Development of Education Programs

School programs were developed by the educators in ensuring that the content and the methodology aligned with the Department of Education and the school curriculum. The museum educators at the museum also trained the senior program officers, the program officers and the presenters to deliver these programs.

4.3.1.2.6 Resources

Decisions on required resources were usually based on the identification of learning objectives for every program. Parker added that the department always tried to reuse existing resources. If additional objects and materials were required, a request to the preparators and carpenters would be lodged. However, this was not always the case as it was possible that the designers were preoccupied with demands from other departments. External purchases were also often made. Plans were usually made ahead so that request for materials and resources from the Preparators’ Department made as early as six months in advance.

4.3.1.2.7 Facilities

The facilities used to enable the education programs had outgrown its capacity, attested Parker. She pointed out that the museum had been utilised for more than ten years and changes were made to some parts of the building structures and spaces to accommodate the increasing number of school visitors.

We have discovered over the last couple of years, the numbers are getting bigger and bigger, that what we’ve developed ten years ago, in some way is inadequate. For example, the reception area for schools, we had... it’s on the ground floor. It used to be big enough for us to be able to manage all the students there when they arrived, we had sort of like three bays with steps the students could sit on. And that was enough. But then we just got bigger and bigger. But now the area is currently being revamped. We just store bags and all those lunches in there. And we talk to the teachers there but we bring all the students in bulk at the front door and talk to them in the galleries when they arrive. So, we’ve had to adapt for the larger numbers.
4.3.1.2.8 Budget

Parker viewed budgeting and planning as equally important, and therefore should be carried out simultaneously and such was the practice of the Public Programs and Humanities Department. According to her, budgeting worked in parallel with the planning process and the planning was made based on a five-year plan, a three-year plan and a one-year plan. She explained,

Just starting now in December we’re starting to develop our budget for 2011/2012, so that’s from the end of June 2011 to July 2012. And it works in parallel with our planning process. We have five-year plan, three-year plan, one year plan and then we’ve got things that just propped up that we just need to know. So, we have to leave a little bit aside for that.

Parker added that budgeting was basically planned at three levels and these included the departmental level, museum level and at the level of Museum Victoria. Operating under a networked organisation, Parker as a Public Program Manager at the Melbourne Museum planned with the Public Program Managers from the Scienceworks Museum and the Immigration Museum. Explaining the process, she said,

So, I plan with all of these people but then I also plan with the other people who work at the Melbourne Museum’s Departments. So, I’ve got public programs, and they’re the Melbourne Museum and they are parallel. So, that’s how we plan our budgets we plan them well in advance. So, I talk with all of my team and we work out programs that we are gonna be doing, right across the board in conjunction with these people and in conjunction with the other people at Melbourne Museum and we come up with our budget.

4.3.1.2.9 Marketing Strategies

There was a standard marketing protocol followed through by the Melbourne Museum, as part of MV. One of the strategies to promote events and programs at the Melbourne Museum was through Museum Victoria Teachers which is a newsletter for school teachers in the state of Victoria who were registered with MV. Membership was free and teachers were emailed an online newsletter every fortnightly. The content was specific to the subjects and discipline taught by the teachers in schools. For example, history teachers were emailed with information related to history, etc. Parker said,
Once a fortnight they get an email which directly marketed to them. So, if they’re history teachers, they get all the history stuff. If they are science teachers, they get all the science stuff. And that’s how we tell them what’s coming up.

The MV used to send out brochures about its activities and events to schools, however this practice has been discontinued. Parker explained,

We have given up sending up brochures because we did some evaluation on that and discovered that although they cost us the most of anything people use those the least. They didn’t see them. We sent them to schools and they ended up on the principals’ desks or…So, we’ve given up.

According to Parker, most of these brochures were not distributed to the teachers and even if they were, they did not provide sufficient attraction to get teachers to arrange for an excursion to the museum. Brochures, stated Parker, were also costly as compared to the current method of advertising. Parker believed that the best advertising was through word of mouth and Melbourne Museum aimed to provide positive experience to the visiting teachers that would make them talk to other teachers about it.

4.3.1.2.10 Partnerships

The Public Program Department at the Melbourne Museum worked closely with the curriculum bodies, the professional teacher association as well as schools for trials of programs and evaluation purposes.

4.3.2 Analysis of Data from Museum Educator: Rosita Hudson

One of the museum educators involved in the interview was Rosita Hudson. Hudson provided valuable data in relation to how the education programs in the museum were planned and organised.

4.3.2.1 Demographic Information

Rosita Hudson was an educator with the Melbourne Museum with a qualification in zoology and botany. Her Bachelor Degree specialized in the two areas, with a Master’s Degree in Science (Palaeontology). She had been an active dinosaur digger around Victoria for ten years and studied fossil
records of birds, particularly eagles and hawks, in parts of Australia. Her part-time attachment with the Modern Science Centre led her to be involved with science awareness programs and taught science in primary schools. She then pursued a Diploma in Education. Her knowledge of biology, zoology and palaeontology aligned well with her job description at the museum.

4.3.2.2 Teaching Load

Unlike other educators who had loading almost every day of the week, Hudson usually only taught two days in a week due to other work responsibilities she had. She handled not more than 30 students in a group in either four half-hour sessions or two one-hour sessions in a day.

4.3.2.3 The Process of Museum Learning

For Hudson, the process of teachers bringing the students into the museum for an excursion began with teachers having made the connection to their own experience being in the museums either as a child visiting or as a parent bringing his/her own children to the museum.

It probably starts from the memory, isn’t it? It probably starts from the memory of their time at the museum. Their experience as a child and what it did for them. Or a memory of what their friends or colleagues said about something. Or maybe they’ve seen an ad, or maybe they took their children, we’ve seen a lot of teachers coming with their children. I think it starts before the booking of the program, before they got on the phone there’s a lot that’s already happened. Word of mouth from a colleague or a friend who has experienced the teaching sessions at the museum could also play a role. The teachers would probably visit the museum website to learn about its resources, materials and in finding out what was available. This was then followed by the teachers contacting the booking staff and made the booking.

Then I presume they look at the website and find resources and materials and find what we’ve advertised, and then they ring the booking staff. That’s where I think it’s really important that we the educators keep up booking staff, really up to date with our programs, and not just what time and what’s on offer but actually what happens in them.
Hudson explained that on the day of the excursion, the teachers and students arrived at the museum. The students would be requested to keep all their belongings (school bags, lunches) on a trolley which would then be kept at the school entry section of the museum. Previously, this section was used to organise students’ arrival. However, the increasing number of school visitors had outweighed the section’s capacity. A briefing was given by the customer service staff before the students were guided to the respective gallery for the session. Prior to the teaching session, the students were given a 30 minute of general viewing time which allowed them to do a self-guided tour in any parts of the gallery. This was then followed by a 30 minute of teaching session.

4.3.2.4 Lesson Planning

The discussion in this sub-section focuses on the process of planning for lessons and it is structured by three main aspects of lesson planning: prior information required, preparation of lesson plan and linking the lesson to curriculum.

4.3.2.4.1 Prior Information Required

According to Hudson, very little information about student learning was available prior to students’ actual visits. The museum educators at Melbourne Museum generally were provided with information with regard to the total number of students who were booked into a particular program and the school from which they came. She explained,

I have very little information. I know that there’s 25 Preps from Langwarren South or that there’s 28 students from another school. I don’t really know much about individual, I don’t know where they are in their unit.

The educators, however, had a general list which guided them to infer certain type of information from the nature of the booked programs. This included where the students were in their learning curriculum as well as their age group. When asked further about how the educators made sense about the unit that the students have done in schools, Hudson responded,
I guess you can make an assumption that if they’re here for bugs or for dinosaurs they’re probably doing a unit on it. They may be somewhere at the start of the unit, the middle or in the end of the unit, depending on how they fit in.

More information would be gathered when the students arrived and the educators were presented with the opportunities of conversing with the teachers.

4.3.2.4.2 Preparation of Lesson Plan

Hudson did not have a written form of the lesson and emphasized that the sequence of the lesson was organised according to individual educators’ preferences. This sequence of lesson was similar across the programs offered for primary and second school students. She stated,

People do it differently and they might not have it quite in this format [written]. But they do. I think that there is a preference for a standard form and that’s what trying to be achieved.

4.3.2.4.3 Linking to Curriculum

According to Hudson, it was not difficult to link the program content to the school curriculum. There were three factors identified in Hudson’s response that provided information pertaining to how the link to the curriculum was made during lesson planning. She indicated,

We sort of hone it towards that [linking the content to curriculum] because it ultimately is about supporting what teachers do in schools and supporting them for their students to have an experience that is not in the textbook. To see and engage with real objects. So, I guess that’s quite easy to do.

She continued by saying,

For the Department of Education, they have a lot of statements and strategies. The digital learning strategies, we might further that and pull the key points and how we link that. There’s one for the early learning framework. So, we might look at that and link that to.... And their science and maths strategies and how we link to that.

Hudson’s responses to the questions on how the link to curriculum was made indicated two factors of how this aspect was carried out in practice. First, the emphasis on object interaction as a
stimulus to learning within museum context was consistent with the curriculum aspiration that was built on constructivist orientation. This aspect of the curriculum was manifested in all education programs offered at the museum which included the element of object-based learning. Second, the Department of Education and Early Childhood of Victoria had established key strategies of aspects emphasized in curriculum and these were used as guidance by the educators in the preparation and implementation of their teaching sessions. Hudson also added that the museum as an entity offered programs that were consistently aligned with the needs and requirements of the state curriculum. She stated,

> Linking to the curriculum is not hard at all, because there are points within it that is all about students working in a team like scientists. You know, we link this into our program, we actually get them to do about. Or students learn about understanding about geological time and natural selection. No problem, we have an exhibition 600 Million Years which walks students around and through geological time, fossil evidence. So, I think the museum as a whole entity links very well to the curriculum and of course to humanity. That’s very easy. You just read it, mine it and pull out the bits that link.

### 4.3.2.5 Teaching

The theme of teaching was further analysed by examining the sequence of lesson, education and pedagogical theories employed, as well as the approach and strategies utilised. In addition, the aspects of teaching aids and the use of information, communication and technology (ICT) in teaching, including the issues and challenges faced by the museum educators were also analysed.

#### 4.3.2.5.1 Sequence of Lesson

Depending on the program that the students were booked into, Hudson believed that the preparation prior to the actual session was important. She visited the galleries which would be used and identified her standing point while teaching, marked up the gallery space where the group would be able to hear and participate, and planned for the appropriate seating area.

She arranged her lessons by first having a ten-minute introduction directed at informing the students of what they would be doing. According to Hudson,
And that introduction is no longer than ten minutes, it’s quite snappy and very directed in getting them towards what are they gonna be doing...

She would try to incorporate as much two-way conversation as possible in her teaching and the introduction aimed to clarify expectations and provided the students with clarity of the content and the direction of the excursion. Students were only assigned to their project works after the introductory session.

4.3.2.5.2 Education and Pedagogical Theories

Hudson did not provide a direct response in relation to the educational and pedagogical theories that she employed in her teaching. Her responses were more directed towards the reliance on specific theories by the educators at the Melbourne Museum in general. The responses provided showed an inclination for the utilisation of teaching approaches within a constructivist framework and this was inferred from several of her responses.

A lot of teachers use a constructivist approach, they use Bloom’s taxonomy, they use multiple intelligences. I think that the museum specialises in but I don’t think that it happens exclusively at the museum...

Learning through objects, yeah. [When asked about her teaching approach].

Hudson’s admission that she used OBL in her teaching suggested her reliance towards a constructivist approach in her teaching.

4.3.2.6 Teaching Approaches

There were several approaches employed and these included the OBL approach, the Community of Inquiry and the learning experience that was largely student-centred.

4.3.2.6.1 Student-centred approach

Hudson stressed the importance of moving away from a lecture-type teaching style particularly when teaching to a group of 30 students. Her response indicated a preference towards student-centred approach in her lessons.
I would not do more of the lecture. A group of 30 if you’re trying to lecture... I don’t mind an engaging lecture, I don’t want someone to just stand there talking. I find it difficult to engage when someone talking facts at me and not engaging at deeper level.

She believed strongly that lessons should garner high levels of learning engagement and for that to happen, the educators needed to move away from a style of teaching that was predominantly characterised by teacher-centredness. According to her, one way to manage the group behaviour was by presenting a lesson that was engaging, hence she felt that hands-on activities suited this purpose better than a lecture-type lesson. Making sure that a proper seating area was selected where every student would be able to hear and participate was also essential.

4.3.2.6.2 Community of Inquiry

Hudson compared her style of teaching to the one used by another colleague, saying that it was very similar to an approach known as the Community of Inquiry. She explained,

She has the students work in groups and she places objects... Like in one of her programs they have to run through a number of objects that somebody will call it rubbish and trying to tell the story of that person’s life through those objects and that’s getting them to think about the significance of other objects and what objects can tell us. But it’s also a very constructivist approach, because the students construct their understanding, it’s really about their conversations in the room. She, as a teacher, directing the conversation and facilitating that and not ramming content down students’ throat. I think in many ways we both are taking similar approach in teaching. But just one science and one humanities.

In this approach, the students were provided with stimulus that allowed them to construct their own understanding. Her role as an educator, as explained by Hudson, was to direct and facilitate the conversation. Her approach was rich with scientific emphasis whereas the colleague that she was comparing to had a focus on humanities.
4.3.2.6.3 Object-based Learning (OBL)

Given the uniqueness and plethora of objects stored at the museum, Hudson believed that educators should manipulate the objects and use them as the focal point in their teaching. This was communicated at several points of the interview.

I think that the museum specializes in [OBL] but I don’t think that it happens exclusively at the museum, other places probably can do it too is that we have 16 million objects, we have real collection materials and we have real things that highly significant that people can see and engage with. You can really see the real momentosaurus skeleton whereas you can only imagine how big it would be.

In relating to selection of content and materials related to exhibition,

In the case of Bugs program, we ordered a lot of insects in raise and blocks from oversea and what was available for purchase. So, that’s sort of drive the choice there.

And,

Taking parts of the exhibition that would work well and then picking up objects that link to that theme in that section of the exhibition.

Museum educators have the freedom of selecting which gallery that they would like to use. The selection of objects and galleries for teaching sessions depended on what was available at that particular time, particularly at the ongoing exhibition and section of the exhibition that could be manipulated for students to construct their understanding. For example, in the Bugs program, a lot of insects were used for teaching sessions. For the 600 Million Years program, a video camera was used. In sum, the selection of objects depended on the educators’ anticipation of what would work well in the exhibition and then selected objects that linked to the theme of the exhibition.

4.3.2.6.4 Teaching Strategies

There was a number of strategies commonly used by Hudson. One that was most commonly employed was in getting the students to apply their understanding in a different context and this was achieved through learning by playing. For example, getting the students to play dress ups, recording and video making, etc. She stated,
One program we use laptops and flip cameras. Students can record and make a video, hand lenses, this program we use dress ups and we get the children to dress up. That’s about applying their understanding to a different context, is also about playing, learning through playing with young children, so we do something like that as well.

4.3.5.6.5 Teaching Aids

To Hudson, the teaching aids used should assist the educators in facilitating the teaching approaches and strategies. For example, in getting the students to apply their understanding to a different context, laptops, flip cameras and hand lenses were used. At the time, she commented that she would love to get her hands-on iPads and believed that students would increase their level of engagement through the use of gadgets and objects.

4.3.5.6.6 The Use of Information, Communication and Technology (ICT)

Hudson related the use of information, communication and technology (ICT) to the online resources made available to the public by the museum. According to her, the online resources were quite extensive with education kits, pre-and post-materials, maps of the galleries and virtual tours, however, its level of use was highly varied.

4.3.5.6.7 Challenges in Teaching

Hudson had experienced a number of occasions which required immediate intervention. The biggest challenge for her was not IT-related issues. She normally adapts to IT problems by reverting to alternative or changing to something else. To Hudson, having a group of students who was completely switched off even before the lesson began was her greatest challenge. When she was teaching in Scienceworks, she was assigned to a group of students who misbehaved and were disengaged to her sessions particularly because the content had no relevance to the curriculum that the students were doing at that time, and their excursion was during their off day, therefore they saw no relevance for being there. A few students who were enthusiastic acted otherwise because they feared it would not be cool to the others if they were to engage in the session. She tried to make her lesson more engaging by
making it appealing to the students’ interests and preferences. Hudson admitted that it was really challenging because the students themselves did not want to engage.

Another issue was when the teaching was targeted at the level below students’ actual ability. According to her, the group she had was already quite advance in their learning. Therefore, she had to think of new questions to pose that could be better targeted to their levels, thought of new direction to take and new information to feed.

4.3.2.6 Similarities and Differences between School and Museum Teaching

Hudson presented a similarity and a number of differences between teaching in museums and teaching in schools. On the similarity, she viewed that the sequence of the lessons was planned and carried out in similar manner. This was based on her statement, “I mean there are similarities in there I guess everybody thinks about their intro, what’s happening in their lesson, what they intend for the students to learn.”

She also listed several aspects that differentiated the teaching in these two institutions. First, museum programs were more elaborated in nature particularly when they involved exhibitions. Some exhibitions took months to develop and the teachers in schools did not have that amount of time to prepare for lessons of such nature. In addition, teachers had to deliver a number of lessons in a day involving a range of topics/units including other responsibilities such as classroom assessments. This was not the case on the part of the educators.

Second, the programs developed by the museum educators were not just targeted at one group of students however it should be appropriate for a range of year levels. Hudson stressed,

We have to develop something that is not just targeted towards one group of students, it has to be for every group of grades one and two that comes in for this program throughout the year. According to her,

We have to ensure that we’re providing an experiencing that is totally unique and different to what the schools can offer. Because why would they go to all the effort of bringing the students in here if we couldn’t do something that is really special for them.

She also stated,
Different places would provide me with different learning experiences. And I hope the museum is providing a pretty unique learning experience, it enhances objects, it enhances really interesting experiences, it enhances experiential experiences, multimedia rich. I think it also offers engaging experience and more directed.

Therefore, the programs developed must be able to provide the students with a unique learning experience that they could not experience in their classrooms. Finally, Hudson explained how the educators had to be more careful in their use of resources and materials. Every image used needed to be copyrighted and paid for.

We have to have every image copyrighted or paid for, you can’t just Google out stuff, not saying that teachers don’t do that at all. But you know, we have to there’s like... and it has to be branded.

### 4.3.2.7 Educators’ and Teachers’ Expectations

Hudson clarified that the actual contact made between the teachers and educators during the excursion was very brief. It did not provide much opportunity for the teachers to communicate their expectations of the teaching sessions on student learning.

I guess we don’t really talk at them in any of our programs. We definitely have moments with them where introduction, facilitating the students’ understanding. But facilitating a class conversation, we don’t tend to lecture at them.

Hudson mentioned that it would have been ideal if the teachers scaffolded the learning of the students in their own classrooms after the excursion. Online resources were provided to the teachers in the form of education kits and materials. However, whether the teachers did follow up or otherwise was unknown to the educators. This was supported by her statements that,

It would depend on what happened when they go back to schools. Ideally the teacher will...
[do some follow up] Yeah. And it will be embedded as part of the work that’s quite meaningful. We’d like to think that the resources we provide them useful but that I guess that depends on their styles and their needs. And most of the time we don’t really know what happens afterwards.
4.4 ANALYSIS OF INTERVIEW RESPONSES: IMMIGRATION MUSEUM

The participants of the study from the Immigration Museum were the Public Program and Humanities Manager of the museum, Marie Smith as well as two museum educators, Alicia Martin and Pam Weisz. The responses were analysed and presented below.

4.4.1 Analysis of Data from Museum Manager

The following analysis is based on the data derived from the semi-structured interview session carried out with the Public Program and Humanities Manager of the Immigration Museum, Marie Smith.

4.4.1.1 Demographic Information

Marie Smith was the manager of Public Program and Humanities Department at the Immigration Museum as well as the Community Engagement Manager with the Museum Victoria. Her involvement with the study was directly related to her capacity as the manager of the Immigration Museum. She holds a Bachelor Degree of Arts, a Diploma in Education and a Postgraduate Diploma in Arts Management. Prior to joining the MV, she was a Services Manager for an educational institution and a Public Program Coordinator with the Australian Centre for the Moving Image (ACMI). Her role at the museum included overseeing the management and operation of both public and education programs.

4.4.1.2 The Education Division

There are two types of programs available to school visitors: staff-led and self-guided programs. Students can walk in for self-guided programs and the introduction to the museum was conducted by the customer service staff. The students then could explore the museum with the materials provided during the introductory session.
4.4.1.1 Mission and Vision

The organisation and planning of education programs at the Immigration Museum were determined by the museum’s missions and these were aligned with the Department of Education’s strategic direction. The mission statement for the museum was ‘Inspiring Experiences, Educating and Learning, Knowledge and Connection’. According to Smith, the mission and vision were internal documents for the staff and department of public programs. The strategic direction for the education programs was to provide opportunities for students to engage and empathise with stories of migrations to improve their understanding of the origins and complexity of the multicultural society which they live, working towards a more just and respectful society. Under this strategic plan, the department established their objectives, aims, goals and outcomes.

4.4.1.1.2 The Structure

The Education Division was part of the Public Program Department which governed both education and community engagement. The department carried out several types of activities such as the festival programs, holiday programs, family and school programs, education programs for primary, secondary and tertiary levels, including lectures.

The department was not responsible for exhibitions and special exhibitions carried out at the museum. Any exhibition fell directly under the responsibility of the Exhibition Department. However, there were occasions where the department collaborated with other agencies for exhibition. For example, the partnership with the Department of Education and Early Childhood of Victoria in organizing a program called Quest which was a display of photographic and multimedia materials.

4.4.2 Analysis of Data from Museum Educator I: Alicia Martin

Unlike other museums that commonly focused on natural history, the Immigration Museum was specific in its focus on immigration, particularly the immigration history of Australia. All education programs offered in this museum revolved around this theme. The semi-structured interview sessions carried out with the museum educators of the Immigration Museum, Alicia Martin and Pam Weisz, uncovered how the value and appreciation towards immigration were instilled through the museum
education programs. The following analysis is based on the semi-structured interview responses from Alicia Martin.

4.4.2.1 Demographic Information

Alicia Martin was an educator with the Immigration Museum with up to 35 years of teaching experience in schools. She had a Diploma in Education and a Bachelor Degree in Arts both from The University of Melbourne, and had started teaching since 1976 at both primary and secondary school levels. Prior to joining Immigration Museum, Martin was a senior teacher at a secondary school. At one point of her teaching career, she became very involved with history teaching and performed a role in the History Teacher Association at state and national levels. Martin had been with the museum for seven years and was the only educator with a sole attachment to the museum.

Martin had the responsibility of preparing all the modules for the lessons. This included her being involved in doing the research and preparation towards developing the modules as well as training the presenters in the presentation of these modules. The modules or programs had been developed over the last five years. Some of these programs had been modified and altered to meet the needs of the curriculum and the museum’s mission and vision.

4.4.2.2 Teaching Load

Alicia Martin usually taught in three teaching sessions daily involving a large group of 50 students. These students were then arranged into smaller groups of ten students. The teaching sessions were structured into a 45-minute lesson followed by 45 minutes to one hour of teaching in a gallery.

4.4.2.3 The Process of Museum Learning

The process of museum learning, according to Martin, started when the teachers made the booking. Bookings were administered by the booking staff and Martin stressed the significant role played by the booking personnel in ensuring the smooth running of the education programs. At the Immigration Museum, bookings were open twice a year. The first round of booking can be made in
December for programs of the following year and the second round of bookings needed to be made in May for programs in the second half of the year.

Martin emphasized the importance of making the booking in advanced and not to wait until the last minute,

You have to book two weeks in advance and we’re booked out well before that. So, teachers can ring up two weeks before they get in, very, very rare.

The booking staff arranged the bookings. A spreadsheet consisting of all the bookings was then sent to a program officer with the responsibility of allocating presenters to each session. The schools were billed on the number of students who had come and payment was handled by the customer service department.

4.4.2.4 Lesson Planning

The sub-themes analysed for lesson planning include the prior information required, preparation of lesson plan and link the planned lesson to curriculum. The analysis of these sub-themes is presented below.

4.4.2.4.1 Prior Information Required

Martin explained that the information obtained from the booking made was limited to the school name, year level, group size and the program which they were booked into. More information was obtained on the day of the excursion by talking to the teacher. Martin clarified the kind of information gathered from the teachers,

We find out what school they are coming from and we try to find out what their connection to the subject-why they come in? Whether they come in as a history class, or is it a learning in the city class, what’s the background?

4.4.2.4.2 Preparation of Lesson Plan

At the Immigration Museum, all five staff members in the Public Program and Humanities Department delivered and implemented the education programs. However, the development of these
programs was Martin’s responsibility. Martin prepared the lesson plans and the sequence of the lessons before they were being handed to the Program Officers and the presenters. She was also responsible for the training of the presentation of these programs as one of the measures in ensuring consistency across presenters. Because lessons were prepared by Martin for other staff members to present, detailed lesson plans were developed including the tiniest details. According to Martin,

It’s important that they deliver the program as I’ve written it. So, it’s not like being a classroom teacher. The way it’s set up is that we’ve got this program which involves using the suitcases, doing the introduction that I did, and then facilitate the kids talking about what’s in the suitcases, getting them to do the feedback about what they found out and then taking them up into the galleries. So, I planned that, I know this, I developed the activities but then someone else delivers it. The people that we employ as presenters come on board knowing that they don’t have to prepare anything, it’s all prepared. They just have to deliver it.

4.4.2.4.3 Linking to Curriculum

Martin strongly believed that the teaching sessions carried out should provide the students with a unique museum learning experience. She said,

This is not about a classroom, this is about a museum learning experience. So, it’s a very different learning experience to the way you run a classroom. Because we don’t want teachers to come here and have the kids do exactly what they do in the classroom. They’ve got to come here and do something that is new and different, exciting, fun and they’ve got to have materials that they won’t have in the classroom.

There were three aspects considered for the development of any education program: how well did the program fit into the curriculum requirements, how could the objects be manipulated in a way that promoted learning and what experiences did the students have prior to excursion which could be potentially used to heighten the learning experience. This was supported by Martin’s statement,

We spend quite a lot of time thinking about what the curriculum required, thinking about how we would connect the idea of object based learning to the experience of what the students have.
4.4.2.5 Teaching

Martin provided a lengthy description of the education theories, approaches and strategies that she utilised when she taught. The descriptions of these are presented below.

4.4.2.5.1 Educational Theories

In designing lessons and modules, Martin focused on the thinking curriculum which has an emphasis in providing the students with the opportunity to think while learning emerges. Martin explained her orientation within the constructivist theory,

We’re not lecturing, we try to give them the opportunity to think.... So, I suppose the thinking curriculum issue is another pedagogical framework that I work too. It’s all about hands-on constructivist student centred, it’s about the adult expert as the facilitator not as standing up there as a point of knowledge, it's about discovering for themselves and it's about the students being inspired to ask more questions because of the information they are gathering by their collaboration. And because it’s so hands-on, they can’t help but ask questions and get excited about things.

As Martin pointed out, she assumed the role of facilitator and not the disseminator of knowledge. Students were provided with the opportunities to construct their own learning and to be inspired in asking more questions in building on their understanding. Martin added that because the nature of the activities at the museum was hands-on, students were compelled to be more engaged and encouraged to ask questions. It was quite difficult for the students not to get actively engaged in the lessons due to the way the lessons were structured, regardless of what range of students’ abilities. In addition, each lesson only lasted for about 45 minutes, the time frame was sufficient to provide a framework for thinking and learning and not too long for students to start losing focus and interest.

4.4.2.5.2 Pedagogical Approaches

Martin believed that the most appropriate way to teach at the museum was via hands-on, object-based, student-centred tasks which allowed the students to experience objects in a way that led to thinking about the background of the story.
4.4.2.5.3 Object-based Learning

Throughout the interview, Martin communicated a strong emphasis on the use of OBL in museum teaching particularly in providing unique museum learning experience that was different than the usual chalk and talk in the classrooms. Examples of some of the statements made by Martin on the subject:

We spend quite a lot of time thinking about what the curriculum required, thinking about how we would connect the idea of object based learning to the experience of what the students have. When asked about what she thought about an appropriate way of teaching in the museum, Martin replied,

I would suggest that this is the best way in terms of being hands-on, object-based, student-centred...

Martin also discussed the process of selecting appropriate objects for the education programs and this communicated her reliance on OBL as one of the pedagogical approaches in her lessons. She clarified few criteria that served as guidelines in selecting objects for her lessons,

We choose according to what we think are the levels of interest of the students and what we think... So, for younger students we have perhaps less printed documents and for older students there’ll be more details documents. So, we look for it according to the level of capacity and the year level of the students.

4.4.2.5.4 Student-centred Approach

Martin, on a number of occasions during the interview, explicitly and implicitly communicated the utilisation of a student-centred approach in her teaching. The language used and the examples provided described the distance that she took from lessons that were predominantly teacher-centred. During the discussion on lesson planning, she described the shift made by the Education Division which was previously dominated by traditional classroom’s criteria.

We don’t want them [the students] to be using PowerPoint. PowerPoint in this instance might just be about putting a photograph up on the screen but when I first started here, the program
was very PowerPoint-based and it was... The kids sitting in straight lines, a lecture. So, we don’t want that to happen again.

Her emphasis on student-centredness during learning is emphasised in the following statement:

They’ve got to come here and do something that is new, exciting, fun and they’ve got to have materials that they won’t have in the classroom. It’s about discovering for themselves and it’s about the students being inspired to ask more questions because of the information they are gathering by their collaboration. And because it’s so hands-on, they can’t help but ask questions and get excited about things.

In a different instance,

This age group can be so disengaged. They really can... I’ve never seen disengaged kids in this classroom. Even if they’re not seriously engaged, they’re thinking about something. You might get kids perhaps being very attentive but actually because we’ve structured it like this, it doesn’t matter how, what range of capacity the students are. They can always work something out. Even if they are not writing a lot down, they can still engage it in, they can still get something out of it.

4.4.2.5 Inquiry-based Learning

Inquiry-based learning was mentioned briefly by Martin without any elaboration on how the approach was carried out.

4.4.2.5.6 Pedagogical Strategies

Martin indicated that narratives and scaffolds as her mostly utilised teaching strategies. However, she only provided descriptions of how she implemented scaffolding in her lessons. The use of narrative was not elaborated.

4.4.2.5.7 Scaffolding

Martin talked about scaffolded lessons however this was not elaborated much. She discussed very briefly how the learning experience in the museum should be later scaffolded by the teachers in
schools. She prepared a question sheet for the teachers to keep track on their students’ engagement during the lesson. This provided the teachers with information to scaffold their students’ learning once they go back to schools.

4.4.2.5.8 Narratives

The use of narrative in her lessons was briefly mentioned by Martin.

4.4.2.5.9 Teaching Aids

To Martin, teaching aids were essential as they assisted the educators and presenters in the use of narratives and she tried to connect the use of teaching aids to what was in the galleries in the museum collection. When asked about the importance of teaching aids in her teaching, Martin responded,

Yeah. Just because we knew that we need some other things in order to tell the stories. We worked out that if we had the suitcases, how we are going to make sure when the kids open the suitcases they knew what to look for.

The Education Division worked with the museum designers to produce the aids.

4.4.2.5.10 The Use of Information, Communication and Technology (ICT)

Martin’s lessons did not incorporate the use of information, communication and technology (ICT) for a number of reasons. First, according to Martin, the schools were not too keen with the idea of using technology. The use of technology in the museum during lessons may not be scaffolded by the lessons in the schools later. However, Martin did not reject the possibility of incorporating more use of technology in the future as schools were getting more comfortable with its use. Second, Martin believed in providing for hands-on activities and the use of technology might be a hindrance to that. Students came to the museums and expected to see objects. The visitors could browse the museum website to see its collections online. In addition, using PowerPoint during teaching might encourage similar manner in which teaching is done in the classroom. This was in contrast to the principle of providing a unique museum experience that was different than what the students experienced in their classrooms.
The following responses by Martin illustrated her strong view about the use of information, communication and technology (ICT) in teaching.

No [When asked about the use of technology].

She then added,

Well because first of all they can take photographs and they could take movies if they want it to. We don’t have full set of computers here but they have them back at school. We may move to the idea of developing something where the kids use flip cameras and then go up into the galleries and work with the cameras and then transfer that across. But in a lot of cases, the schools aren’t too keen on that anyway. I think in the next couple of years we will actually introduce more technology just because the schools are getting a little bit more comfortable with it but it doesn’t seem to me that the delivery that we do, you don’t have to have technology to make it work.

She continued,

If you come to the museum and you expect to see objects. You can go online and see our collections online. If you’re coming here, you need to touch and use the stuff.

4.4.2.5.11 Challenges in Teaching

The challenge, to Martin, was in providing learning experience to students that catered for teachers’ specific focus on student learning. Martin expressed that the teachers sometimes did want the lesson to have an emphasis on different aspects than what was provided in the pre-fixed programs. And even though she tried to fulfil these demands, it had proven to be quite difficult.

Too much [to implement negotiated program]. We haven’t got enough staff. I’ve got one presenter, one person works full time, she’s here from 9 o’clock to 2 every day and her role is to present. So, she’s responsible for presenting. And then there are two other staff who also present but they also have other roles. And then there’s me. I don’t present very much at all cause I’m doing all the other stuff, but I will present. When I first started here I did all the presenting with another person’.
Martin was the only educator at the museum and her weigh of responsibility was heavier in developing education programs and in training the presenters to present the programs. All the lesson plans were comprehensive and detailed so that when they were handed over to the presenters, these presenters were able to maintain consistency of the lessons. Therefore, most education programs were fixed and were implemented in a standardised manner. Martin herself had few teaching loads as her work focus was in program development. With the limited number of staff members in the division, the presenters’ lack of teaching qualifications and the role Martin had to fulfil in developing programs, it was very difficult for teachers’ request to be met.

4.4.2.6 Similarities and Differences between School and Museum Teaching

Martin elaborated how museum teaching should be different than that in the classroom. First, the learning was not designed for students to increase their understanding and knowledge about immigration. The lessons for the education programs in the Immigration Museum were written to encourage the students to make connections about real people through stories and narratives. This was evidenced by her following statements,

I don’t think that we as a museum can take responsibility for saying ‘We can deliver this topic’. We can’t. We aren’t delivering that topic. We are delivering an experience that is connected to a topic that enriches whatever the study is. Unless we have students coming in every week for five weeks we couldn’t say we are delivering a unit of work. We’re not delivering a unit of work. We’re saying you’re coming in and you’re having this immersive experience that is hands-on, experiential, you can go up into the gallery, you can get into the boat, you can do the dictation test, you can participate in the interview room, you can do all those things then when you leave you perhaps know a little bit more about the topic and you can then be wanting to find out more. That’s what it’s about. It’s about an experience that adds to the learning in schools.

Based on the above statements, Martin also believed that museum teaching provided enhanced learning in schools. She also mentioned,
I would always say, I think this is an experience that lets them go back and reflect on the information and perhaps approach back what they do in the classroom in the different way.

Third, to most students’ museum learning was not a routine learning exposure and the experience was carried out within a new learning environment taught by different persons than the teachers.

Because the museum is a new place. It’s different. It’s not a routine. It offers a new place-out of routine. It offers different focus because you haven’t got your teacher in front of you. You’ve got someone else talking to you. They, I mean, each student would have their preferred learning style but the museum is only a short burst where they might learn something.

Finally, Martin explained that the teaching session in the museum was only for 45 minutes involving a single session, whereas in schools which usually were continuous involving a stretch of syllabus. Therefore, the education programs offered in the museum might serve the students in one of the following three ways: as an introductory session to the unit, middle focus to the unit or the summary or conclusion to the unit learnt in schools.

4.4.3 Analysis of Data from Museum Educator II: Pam Weisz

The second museum educator who participated in the study was Pam Weisz, who was initially seconded by the Italian Government to the museum to fulfil the goal of promoting Italian language. The following is the analysis of Pam Weisz’s responses.

4.4.3.1 Demographic Information

Pam Weisz had a unique role in the Immigration Museum. Her attachment to the museum was primarily in a form of secondment by the Italian Government, with the purpose of promoting Italian language through the use of Italian migration-related stories. Unlike other educators from MV who carried out their teaching sessions in English, Weisz used Italian. She worked across all the three museums under MV and though the focus could vary from history to science, her teaching was in Italian. Prior to joining the museum, she was a school teacher for seven years teaching a number of subjects including Italian language, science and biology.
4.4.3.2 Teaching Load

Pam Weisz usually handled two teaching sessions per day however may be allocated up to three sessions per day depending on the number of bookings received. She admitted being used to receive 50 students in one group and this number had been reduced to only 30 students per group to allow for more effective teaching. Each teaching session ran from 40 minutes to one hour.

4.4.3.3 Lesson Planning

The following is the analysed data with regard to how Pam Weisz planned her teaching.

4.4.3.3.1 Prior Information Required

According to Weisz, the kind of information provided for the booking staff about a particular booking normally related to the school name, students’ year level, the number of students and the kind of program that they were booked into. However, Weisz added that there were a number of occasions where the teachers contacted the educators personally, either by email messages or telephone calls, and communicated the kind of program that they wanted their students to be involved in. This was because these teachers wanted to know more than what was available on the website.

4.4.3.3.2 Preparation of Lesson Plan

Because of her position in promoting the Italian language and being the only one at the museum with such responsibility, Weisz prepared her own sequence of lessons. According to Weisz, she had a documentation which detailed the flow of the activities and the topics of the lessons, but they were not prepared in a detailed-like manner replicating lesson plans. According to Weisz,

Because I don’t have to train anybody, I do the lesson plans just for myself so I just have a record of what I’ve done but I don’t follow a lesson plan.” She also added later, “I mean, I have a sequence of events that have to happen, I know exactly where I want to go...

In preparing for lessons, Weisz tried to gather opinions and feedback from school teachers. She also identified the most current trends in Italian teaching and tried to incorporate those in her lessons. Weisz explained,
I have quite a few friends that are still teaching, in the system. Often when I developed something I will show it to them and say do you think this is a good level for primary, do you think this is good for middle years, do you think, you know... So, I get advice from them and feedback.

She also emphasized the importance of establishing connection with school teachers to identify the students’ needs. She added,

I think you need to do that especially when you’ve been out of the school for, like for me for more than seven years. It’s good to have contact with teachers that are teaching and that they can give you good feedback.

4.4.3.3 Linking to Curriculum

The curriculum link was one of the aspects under consideration when Weisz planned her lessons. According to her,

One of the first things is looking at the curriculum, the current education curriculum... Looking at the curriculum trying to find the strong links...

4.4.3.4 Teaching

Pam Weisz centred her lessons through the utilisation of both teacher-centred and student-centred approaches and engaged in communicative mean in making her lessons interactive. The following is the analysed data of Pam Weisz’s teaching, specifically in relation to the sequence of the lesson, theories, approaches and strategies that she used.

4.4.3.4.1 Sequence of Lesson

Weisz commenced her lessons through the presentation of content before moving on to hands-on activities which saw the students engaged with objects. She stated that it was easier to manage the students with presentation or lecture-style of teaching. She often used this at the start of her teaching so that she could impart information to the students and in getting information from them. According to her,
I like both [teacher centred and student-centred]. I think for me the teacher-centred is probably easy in the sense because the students are coming to see me speak in another language, I try to mix it up. There’ll be a bit of presenting in the beginning and then the students might be doing something, more like hands-on things. So, I try and do a variety of things, a variety of activities.

At the beginning of the teaching, she tried to gauge where the students were in their learning, particularly the students’ knowledge about migration. To do this, she used cards and the placements of the cards on certain columns would reveal the level of knowledge they had about migration.

**4.4.3.4.2 Educational Theories**

When asked about the use of a particular educational theory, Weisz had difficulty in recalling the name of the theory that framed her lessons. However, she went on and described the style as communicative through the use of objects including images and stories in delivering the content. She described,

I would call it like a communicative style, it’s about communicating. It’s using props, it’s using images, it’s using authentic stories to engage them.

The discussion on educational theories and pedagogical approaches, however, seemed to suggest that Weisz used a combination of both traditional and constructivist theories in her teaching. She mentioned the focus on teacher-centred at the start of her lesson and shifted to student-centred approach right after that. She also stressed that her lessons were characterized by communicative elements through the use of objects. Her later descriptions suggested the reliance on object-based learning to support and better illustrate her story telling. In other words, objects were used to increase engagement and meaning to her narrations.

**4.4.3.5 Pedagogical Approaches**

The analysis indicated that Weisz employed a number of instructional approaches in her lessons. These strategies are discussed below.
4.4.3.5.1 Teacher-centred and Student-centred Approaches

Weisz used both teacher-centred and student-centred approaches and shifted between them whenever appropriate. In teaching Italian language, she stressed the importance of her modelling and presenting the lesson in Italian, and she normally would commence her lessons through presentation which was highly teacher-centred. Midway through the teaching, she gradually shifted her orientation of becoming more student-centred by getting the students to engage in a variety of hands-on activities.

She targeted her approaches accordingly based on students’ levels of proficiency in Italian. For highly proficient students, she provided lessons that were rich with hands-on activities. However, for students with lower levels of Italian proficiency, she accommodated lessons that were high in input and vocabulary assistance before the students commenced to the hands-on sessions. She described,

Last year I ran a program where it was hands-on and students did very well but I still had to give them some input, I still had to give them some input at the beginning then they do an activity in groups and then I would try to bring them up together.

Her focus on the use of both teacher-centred and student-centred approaches varied for students of different age groups. With younger audiences, Weisz utilised more objects and included more elements of interaction, hence, a heavy concentration on student-centredness. According to Weisz,

With the younger students, I actually have different suitcases, I bring out objects and students get dressed up. You know, they interact a bit more in that way.” She also added, “I think the hands-on one works really well with younger students, the primary students like year five and year six. With year seven and eight... I think as students get older they’re not so engaged with objects as much. But I think younger levels work really well.

4.4.3.5.2 Object-based Learning (OBL)

Weisz thought highly of the object-based learning approach and used it frequently in her teaching. She utilised a variety of interpretive objects, which she defined as objects that connected to the stories that she told either about a particular culture, event and person. This is communicated in her response,
And you’re trying to find an object that connects the stories, of course. And you try to find an object that you know tells a little bit about the culture. Or try to tell a little bit about this person’s life.

Another characteristic for her object selection was its ability to ignite curiosity among students, ones that they had never seen before and had mysterious elements attached to it. Weisz explained,

When I do program, there are a lot more objects that I take out. And I try to find objects that make them curious, that the students have never seen before. And I try to introduce like a mystery object, something that is very unusual so they have to try and figure out what does this object, what its purpose, you know... what it’s made out of, who would have used it...

Most of the time the objects used were authentic and the use of authentic objects was highly encouraged. Replicated objects were utilised only when it was necessary. Weisz stressed,

No [don’t use replicated objects], we try and use the original. The only time we’ve used replica object last year we had an ancient Roman program and so we used replica objects but we’ve also found Roman objects which we used as well. So, we try to balance. We try to use some real objects and may be some replica objects if, you know... we have to.

Weisz added that the educators had access to enormous amount of ex-display objects which could be used for teaching.

We can borrow them and this department has lots of objects which aren’t on display at the museum, they are not precious objects so they can be used by students. We can borrow things from them.

4.4.3.5.3 Teaching Strategies

Weisz believed that the teaching of the Italian language to students for whom Italian was not their first language essentially required the application of a variety of strategies. Her discussions of the kinds of strategies used were very brief and most strategies were expressed in passing. However, these strategies were also mentioned in other parts of her conversation, allowing inferences be made about the teaching strategies employed.
4.4.3.5.4 Code Switching

Weisz code switched between Italian and English whenever appropriate. To her, the strategy was particularly important when delivering lessons to students who were with low level of Italian proficiency. According to Weisz, she tried to use as many Italian words as she could, however, she resorted to code-switching when the students appeared to be struggling with meaning and the provision of English would assist the students with their understanding.

It depends on the level of the students. Sometimes you have to work harder to get them to understand, sometimes they know the vocabulary sometimes they don’t. But again, you use these different strategies to try. You know, every now and then and then if I have to use an English word, I do. You know, if I see that they’re struggling and if I don’t get something and I’ll say the word in English. But I try... I try and use as much Italian as I can.

4.4.3.5.5 Story Telling

Although Weisz did not explicitly express using story telling as her teaching strategy, a lot of other strategies were mentioned as ways to enhance stories or narratives that she told in her lessons. For example, the use of interpretive objects that connected to the stories she was telling in relation to providing more meaning to the culture, events and person in the stories.

4.4.3.5.6 Voice and Gestures

From Weiz’s experience, students’ level of engagement differs, they might be more engaged in one activity and less engaged in another. When she observed that students were gradually losing focus or were not involved in her lessons, she would use her voice in an animated manner to regain their attention. This was explained by Weisz,

I try and use my voice and I try be quite animated with I talked to kind of excite the students to gain back their attention.

Another way to attract the students’ attention was through the use of gestures, in addition to using images and objects.
4.4.3.5.7 Teaching Aids

Weisz considered teaching aids as important tools in teaching, as a means of getting the students to focus and engage to the story. She mentioned several kinds of teaching aids that were utilised in her teaching. Weisz took the opportunity at the beginning of the lessons to determine where the students were in their learning and this was carried out by using cards for prior knowledge questions. Weisz designed columns that had information about migration and these cards were supposed to be placed in the appropriate columns. According to her, the activity provided her with information in relation to what and how much did the students know about migration which assisted her in identifying the focus of the lessons.

Weisz also mentioned the use of object-based learning as her teaching approach. A number of objects used in her lessons had been communicated during the interview and these included suitcases which contains costumes for students to play dress up.

4.4.3.5.8 The Use of Information, Communication and Technology (ICT)

Weisz made use of PowerPoint presentations in her teaching and incorporated the use of films whenever she could. She included a lot of images in her PowerPoint presentations because she believed that the visuals assisted the students’ understanding. She explained,

I tried and use a PowerPoint and try to put visual in because I think the visual, especially when I have to speak in another language, they can pick up a lot of cues from the images. If I talk about La Familiar and I am pointing to the family, they can work it out what that word means even if they never heard it. And I can say mama papa, you know, so use images also as a way of prompting the students.

4.4.3.5.9 Challenges in Teaching

Weisz viewed her teaching as successful in engaging the students in learning and when the lessons did not turn out the way she expected, it was related to the issue of group management particularly the group size rather than the approaches she used. According to Weisz, previously about 50 students were assigned to a group and this had made it very difficult for her to effectively organise
and deliver her lessons particularly when the focus was on the second language learning. The number of students had been reduced to only 30 students per group and she found her teaching to be more manageable. Weisz believed that students would get easily distracted and would have difficulty in focusing if too many were in a group.

Weisz cited twice about logistics issue, that is, space-related issue.

In the museum, it’s a matter of logistics. If you have the time and the space to do it. In a different response, she mentioned, here at the museum, we don’t have as much space.

In both of the occasions, she was referring to the organisation of lessons that involved hands-on activities.

4.4.3.5 Similarities and Differences between School and Museum Teaching

Weisz explained the differences between the school and museum teaching in relation to two aspects: lesson preparation and learning experiences.

4.4.3.5.1 Lesson Preparation

Weisz believed that teaching in the museum had to be different than in schools, it was one of the reasons for students to engage in an excursion. Teaching in the museum is based on museum collections put together by the curators. Therefore, in the Immigration Museum, the educator would have to base their teaching and linked their stories to the collection. She said,

We’re trying to give students an experience with they can’t get in the classroom... Things that have been, you know... have been written by the curators, we try and incorporate as much information from the collection into our stories... We try to give them something that’s a bit different to what they’re doing in the classroom.

Weisz admitted that the style of presenting may be the same between school and museum however the content was different. In schools, lessons were planned based on the curriculum and the learning standards provided by the state education department. And even though museum educators had to link their lessons to the curriculum and these learning standards, the focus was on the programs devised based on the current exhibition and museum collections.
4.4.3.5.2 Learning Experiences

Weisz listed a number of differences between museums and classrooms. First, the teaching was based on the collections and the collections were put together by the experts who had real interests in history, science and other related fields. According to Weisz,

And also, you have expertise, you know. People that write the sessions or write the lesson plans are really experts in their field. Well, you know, they have real interests in history, or science or whatever. So, it’s also the fact that they have the expertise that they’re able to connect you.

Second, according to Weisz, the authenticity of the museum collections played a role in stimulating the learning experience. She reasoned,

A museum gives them an opportunity to connect with history, connect with collections. It stimulates them because they’re able to engage with objects and things that maybe they’ve never even seen before. I think that stimulation is the thing that is so unique to a museum.

In discussing the third reason, Weisz expressed that teachers were assigned with heavy teaching workload and they might not have the time to replicate sessions in a manner the museum educators did with theirs in the museum. She said,

It’s very hard for teachers to replicate a session like we do because they just don’t have time in school. You know, if you have the time to find the suitcases and fill them with objects and research stories, it’ll take up a lot of your time. So, the fact that they can come here and do a program that has all those elements, I think that’s the things that make us unique as a museum and as museum education.

In addition to teaching workload, the difficulty in replicating lessons similar to the ones presented in museums could be due to the limited accessibility teachers had to authentic objects and other similar resources.

Fourth, teachers had higher level of accountability towards their students learning. This was different with museum educators who may have had only a single 45 minutes of contact with the students. She explained,
you see the students for that period of time and they leave and you don’t see them again unless
they come again a year after. So, the pressure that we have on us is not the same like the teachers
in schools, they have a lot more pressure on them.

4.5 ANALYSIS OF INTERVIEW RESPONSES: SCIENCEWORKS MUSEUM

The analysis presented in the following sub-section is based on the analysis of a semi-structured
interview involving Julie Howard, the Public Program Manager of Scienceworks and a museum
educator, Milan Scherer.

4.5.1 Analysis of Data from Museum Manager: Julie Howard

Julie Howard, the Public Program Manager for Scienceworks was once a museum educator and
was first seconded by the Department of Education and Early Childhood of Victoria before she held a
management position at the museum. The following are the analysed responses provided by Howard.

4.5.1.1 Demographic Information

Julie Howard completed her tertiary education with a Bachelor Degree of Science (Hons) and
a Diploma in Teaching, and has taught for 11 years in a number of subject disciplines including general
science, chemistry, biology, mathematics and computer. Prior to her engagement in Scienceworks, she
was attached with the Science Association of Victoria as an Education Officer. She was first seconded
to Scienceworks by the Department of Education and Early Childhood of Victoria, also as an Education
Officer. Howard, however, was later absorbed as one of the museum’s staff when the secondment
stopped. She had been working for MV for 20 years and held the position of Manager of Education
before she was promoted to her current role as the Public Program Manager.

4.5.1.2 The Education Division

As a museum that offers its visitors science-based activities such as experiments, scientific
discovery and science-based demonstration, the education programs designed and delivered by the
Education Division of this museum also centred around such activities that could assist school audience
in the acquisition of scientific knowledge. This section of the analysis presents analysed data with regard to the Education Division as a unit in Scienceworks.

4.5.1.2.1 Mission and Vision

Scienceworks did not have a specific mission and vision at each of its departmental level. Operated as a networked organisation, the museum followed the mission and vision set by the MV. All departments in Scienceworks planned and implemented their programs and activities based on these shared mission and vision.

4.5.1.2.2 Staff and Job Responsibilities

At the point of the interview, the Public Program and Education Department had a total of nine staff consisting of the Education and Public Program Manager, three Program Coordinators, four Program Officers and a Science Program Managers. In addition, the department had 12 irregular part-time presenters who work a minimum of five to eight hours per fortnight. They were trained by the Program Officers to present shows to the schools and public audiences. VCE education programs, however, were the sole responsibility of the Program Officers, who were also qualified teachers. The department did not have its own administrative staff and the administrative duties were performed by a centralised staff.

4.5.1.2.3 Recruitment

All the personnel under the Education and Public Program Department must have a science-based qualification. Julie Howard explained that the ability to understand how science thinking happened was highly valued as well as the ability to identify areas of knowledge that the staff needed to improve on and where to seek this knowledge is also important. They must also possess passion for communicating science, enjoy working with audience across all ages including with children and families, creative and able to think of new ideas and new ways of doing things. For Program Coordinators, breadth of experience was essential. They must be able to demonstrate the ability to work
with prep students as well as Year 12 students and possessed a range of innovative ways of incorporating their knowledge with museum resources.

4.5.1.3 The Education Programs

In Scienceworks, in addition to standard education programs, other education-based programs were usually the products of public programs. A public program that was initially targeted for visitors for all range of age, for example, would then be extended and refined to customize to the school audience. The following is the analysis carried out on the data of the education programs at Scienceworks.

4.5.1.3.1 Types of Education Programs

There were three types of education-related programs offered by the Education Division of the Public Program Department at Scienceworks: the on-site programs, the off-site programs and the online programs. There were two kinds of on-site activities: ones that were self-guided where teachers prepared the students with tasks before visiting the museum and then, during the day of the excursion, explored the museum on their own without the assistance of any museum staff. The other was staff-led where a staff member took the school visitors through the program. Off-site programs were activities that students carried out on their own, either in the classrooms attempted together by a group of students under the guidance of the teacher or their own home. These activities were accessible and downloadable online from the museum site, commonly attempted prior to the visit to enhance their understanding of a particular topic, or after a visit to reinforce the information and knowledge obtained from the visit. The online activities provided resources for the teachers and students whether or not they come to the museum.

4.5.1.3.2 Program Development

Scienceworks had different types of programs for its visitors, from five different shows—the Planetarium Show, the Lightning Show, two small theatre-bases and the experiment zone-to exhibition and education programs. Even though there were specifically assigned staff for public and education
programs, Julie Howard explained that most programs were the results of collaborative ventures. She elaborated that the education programs were normally expanded version of public programs. According to Howard,

In the last school holiday, we had an experiment where we did basic chemistry using red cabbage indicator. So, that program which only went for 20 minutes for the public would then be developed up into 45 minutes for school audience later on. It’s the same program but with 45 minutes, it’s a bit more science and curriculum related. We worked together to develop them.

Any exhibition carried out at Scienceworks would see the development of a public program and an education program related to it. Howard stated generally two staff from the department, a Public Program staff and an Education Staff, would be involved in the discussion and program development for each exhibition.

4.5.1.3.3 Resources

Space was a valuable resource to the department. The department did not have specific galleries or studios for the staff to carry out their programs. Julie Howard justified their way of operating according to reactive planning.

We have a set of formats of how we do this [responding to a question about space]. The base you see down there, that’s relatively new thing that we’re doing. And we were only able to do that because that’s travelling exhibition in that space was small and as part of that exhibition we can take some of those spaces to do experiments. When that exhibition goes, we won’t have any space anymore. Later we will have other space in another exhibition. So, that is reactive, we’re reactive planning.

4.5.1.3.4 Facilities

The Education and Public Program Department at Scienceworks did not have specific space for the running of its programs. All the spaces used were public and shared spaces. Howard explained,
We don’t have any classrooms and such. So, we use theatres and presentation-based like the Planetarium... So, they are also used for everybody else.

She also added that all the facilities at Scienceworks were designed to be multi-use. They were maintained by the Facility Management Department of the museum.

4.5.1.3.5 Program Planning

The thematic analysis carried out on the data related to program planning revealed a number of sub-themes: budgeting, marketing strategies as well as partnership and funding. The following is the analysed data for these sub-themes.

4.5.1.3.6 Budgeting

The budgeting process at Scienceworks was planned around the facilities that the museum had as well as the sponsors for specific exhibitions. The museum had two permanent exhibition spaces that were maintained by several parties. The Lightning Room, for example, had three separate budgets which were the ‘public program budget’ for implementing the program, the ‘facility budget’ that was used for maintaining the facility inside the room and budget for some of the specialists’ equipment.

4.5.1.3.7 Marketing Strategies

As part of a networked organisation governed by the MV, Scienceworks followed the common marketing strategies established by the organisation. The museum advertised all its education programs through Museum Victoria Teachers or MV Teachers, an online newsletter produced every fortnightly to all the teachers who registered with the MV.

In addition to this, Scienceworks also advertised in every edition of the Science Teachers Association Newsletter, as well as in the regular mails by the Catholic Education Office to their teachers. Howard clarified that their targeted audience was aware that Scienceworks was one of the excursion venues for school students. According to Howard, the department used to send out brochures however such practice was stopped because it was found ineffective.
4.5.1.3.8 Partnerships and Funding

In relation to partnerships, Scienceworks worked very closely with Victoria University particularly in relation to the Planetarium and the Lightning Room as the university funded and maintained these two exhibitions. In return, the university did its high voltage research for the Electrical Engineering Department at the museum. The museum also had a social obligation with the western suburbs of Melbourne and there were several programs which were specifically catered for the residents from these areas. Advice and expertise were also sought from the professional teacher organisations. At the time of the interview, the museum received a small grant from Dow Chemical to run an international European chemistry program. As a government body, the museum was selected in deciding and choosing their sponsors. Sponsors often received tax exemption and the publicity for the programs being sponsored.

The museum also received funding from the Department of Education and Early Childhood of Victoria for two aspects: wages and salary as well as the implementation of the education programs. The DEECV also sponsored the travel cost of year six students to participate in the museum’s education programs.

Scienceworks also teamed partnerships on a basis of expertise. The content of its education programs must be validated by content experts. If such experts were not available at the museum, there needed to be a content sign-off from an external expert. The museum viewed content validation as an important process prior to the implementation of a particular education program because the communication of inaccurate content to the public is damaging to the museum’s reputation. In addition to content validation, expertise was consulted for their opinions. These experts may be the museum personnel of other departments such as the scientists and the astronomers who worked at the museum.

4.5.2 Analysis of Data from Museum Educator: Peter Milan

The interview with Peter Milan, a museum educator with Scienceworks revealed detailed information on the kinds of public programs and education programs organised at the Scienceworks and how the education programs were planned, executed and assessed. The following is the analysed data of the responses provided by Peter Milan during the interview.
4.5.2.1 Demographic Information

As a museum educator with Scienceworks, Peter Milan’s primary responsibilities include writing on-site, off-site and online education programs and resources. A graduate of Australian National University with a Bachelor of Science and a Postgraduate Diploma in Science Communication, his interests in museum education only came to light during his postgraduate attachment at Questacon, Canberra. He was involved in Questacon’s outreach programs and went out to schools in the regional areas of New South Wales in raising awareness of science and providing awareness of science as a career option. He pursued a primary school qualification at La Trobe University after he moved to Melbourne and worked with The Commonwealth Scientific and Industrial Research Organisation (CSIRO) for three years. Prior to joining Scienceworks, Milan taught in a primary school in North Fitzroy for three years.

4.5.2.2 Teaching Load

There were two types of programs which Milan was responsible for: the education programs and the science shows. The normal lessons run up to 50 minutes and each science show was carried out for 30 minutes. It was common for museum educators at Scienceworks to be in charge of up to four sessions per day; however, as Milan was also involved in writing the programs he was usually asked to do one or two sessions per day. According to Milan, no one activity goes longer than ten minutes and within that ten minutes there were several activities. In a normal teaching session, a group of students would consist up to 30 students. However, this was different to a science shows which might attract up to 200 students for each show.

4.5.2.3 Lesson Planning

All education programs planned and implemented at Scienceworks have fact-based content. Hence, the educators were very careful in making sure that the content delivered is accurate. Therefore, the content selected and developed was validated and edited whenever necessary before they reach the audience. The analysed data of the responses gathered from the interview is presented below.
4.5.2.3.1 Prior Information Required

Prior to the teaching session, Milan was only provided with the school name, number of students attending and their age. He usually used a moment before the program started to talk to the teacher and asked questions to identify whether the students had studied the program booked, the level they were at, teachers’ expectations on the lesson and then tried to tailor to the level where the students were at. Milan explained,

As the students coming in and finding their seats, I use those two or three minutes to talk with the teacher and say, ‘Have you studied this yet?’ ‘What level are they at?’ ‘What are you looking to get out of this program?’ And that way even though it’s a bit last minute, you can tailor the program to a certain extent.

4.5.2.3.2 Preparation of Lesson Plan

Milan explained that at Scienceworks only the program coordinators write the education programs. These programs were then presented by the presenters. The presenters’ role was to present the written programs and they were not involved in the program development. Although the program coordinators might also deliver the programs that they had written, most of the sessions were carried out by the presenters.

At Scienceworks, the education programs were aligned with the exhibitions and were developed concurrently. Another important aspect, emphasized by Milan, was the accuracy of the content delivered. Content accuracy was validated and double-checked before it was presented. In describing the process of content validation,

So often I meet the curatorial staffs because they are experts in the area. So, we’ve got that going for us. We’ve got research science staffs as well. We’ve got 40 actual research scientists doing regional research. So, we go to them asking for advices.

Milan went on and explained the significance of content validation,

And the other thing is because we are government-funded museum, then whatever we say in our education resources is through the voice of the museum, which in that respect is the voice of the government. So, we have to make sure that we’re saying exactly... So, when we write
education resources, with any of the... with fact-checking and things like that, it has to be run through the science stuff.

4.5.2.3.3 Linking to Curriculum

Milan outlined a number of criteria under consideration when developing an education program,

The first thing we put in is the curriculum links because for an education program, especially, they’re the most important thing. These needs to be structured because… the program has to meet the teachers’ classroom needs otherwise we shouldn’t be doing the program. A program for the general public that we run during the weekend or over the holidays doesn’t have this need to fit the curriculum. But for all programs, we have our intended learning outcomes and we split those into four categories. So, the knowledge and understanding that we want the students to walk away with. So, that’s the actual content, the ideas. Any actual manual skills we want them to practise during the sessions, any attitudes or values we want them to walk away with and obviously, we want the enjoyment and creativity. For every program before we write it we detail those. We also do the learning styles that we’re trying to incorporate...

And so, once we’ve got all those three things, the curriculum, the intended learning outcomes and the styles, then we begin writing the program.

In summary, three important criteria must be met. First, they must meet teachers’ and curriculum needs. Second, they met the intended learning outcomes which could be further specified into four categories and those were the knowledge and understanding, skills to practice with, attitudes and values; and enjoyment and creativity. Third, they met the identified learning styles that were trying to incorporate.

4.5.2.4 Teaching

The data presented in this section focuses on how lessons were carried out at Scienceworks.
4.5.2.4.1 Sequence of Lesson

Milan commenced his lesson by talking about aspects that students already knew before reaching the level of knowledge where there was a content gap. Asking questions in the beginning also allowed him to identify students’ preconceptions about the topic. This was then followed by an introduction of the concepts that were foreign to these students. To him, it was about introducing a concept followed by repetition of ideas to build students’ knowledge.

4.5.2.4.2 Educational Theory

The education programs at Scienceworks mostly revolved around getting the audience to interact actively with the exhibits and these interactions assisted learning. The following is the analysed data of the education theories, approaches and strategies employed by Milan.

4.5.2.4.3 Constructivism

Milan taught along constructivist way of thinking by building on students’ development and the way their cognitions operated. According to Milan, when students experienced or came across new things, the educations could actually follow their thought processes, hence lessons should be about scaffolding this thinking, helping the students to accommodate this new experience into their existing worldview. This was admitted by Milan,

Personally, very much along constructivist thinking. Especially working in primary schools you’ll see that students come across new things and you can actually follow their thought process as they try to fit in into what they already understand about the world. And so, you can either run counter to that by trying to teach them in different way or accept their forming brains are actually going to operate. So, I always take this function of students will come in to the classrooms with the world view and things they know and that the job of the teacher is to build on that. Often new things that they can explore until that new things fit into their world view.

Milan felt that it was quite difficult to see how other learning theories, other than constructivism, fit well into the museum setting. He elaborated,
because we’re going to see such a vary group of students that we have to offer student-centred experiences. We have to give an experience that students can explore from their own point of view. In schools, it can work I’ve seen it worked well. But that’s because you were in control of all aspects. Because often we don’t talk to the teacher until the students are walking in, we certainly don’t get the time to find out student backgrounds, so we try to design that constructive experience.

He stated that schools did not operate the way museum did and such orientation required the teachers to be in control of a lot of aspects. Because the educators were often without any information about students’ background and their learning progress, designing constructive experiences seemed fitting to Milan.

4.5.2.4.4 Pedagogical Approaches

Milan stated that the lessons organised were often structured around Object-based Learning approach (OBL) and experiential learning.

4.5.2.4.5 Object-based Learning Approach

Milan talked extensively about OBL approach and related the significance of the application of OBL within museum setting. Because we’re in museum, we try to make it object-based as much as possible. He believed in the relevance of OBL approach in museum teaching given the vast collections of authentic objects that the museum had. This can be inferred from his reference towards the collections and how they should be used to enhance the learning experience in the museum. In one of his responses, he said, whereas in the museum [comparing to Questacon] we have the advantage of collection objects, important historical objects so we incorporate those a lot in our programs. At a different phase of the interview, he mentioned,

We do have a very large collection, when you’re outside see all the warehouses and they are full with our history and technology collections. So, we’ve got steam engines and printing presses and scientific devices from over the last 150 years, we’ve got massive collection. But
only a small selection of them get to be on display because we tend to get them all interactive
device type exhibit.

According to Milan, the Scienceworks’ educators tried to use as many authentic objects as they can.

So yes, if it’s object-based we’re going to make sure that they get real object that they actually
can get their hands on. In our shows, we make sure that we use, if we’re talking about steam
engines, then we go to our collections and we’ll take an antique stem engine and we use that.

Even if the actual objects may not be practical for class use, a model appropriate for teaching would be
designed and created for that purpose. For example, for rare fossils that were too valuable to be used
for teaching sessions, a replica would be produced. Milan explained,

No that one does have model cause for rare fossils we couldn’t put them in the box but our
preparatory department has done very, very accurate model of them. So, we still class them
as real objects.

Milan was fully aware that OBL might not go well with students of some learning styles, for example
verbal and textual learners. He indicated,

You have certain students who are not predisposed to that kind of kinaesthetic style of learning.
Would prefer their information presented in a different way, you know they might do better
with actual reading description or verbal description. But generally, as I said, because we want
the unique experience, we were always try to make it object-based learning.

The teaching in Scienceworks had a great emphasis on experiential learning where students
physically engaged with the objects, and the use of objects was essential to this process.

In responding to a question about the selection of objects, Milan stated that a lot of objects used
in the education programs were custom-built by Scienceworks, that is the equipment for science
demonstration. Milan explained that if the programs required objects of historical elements, the
educators would look for something that was already in the collection. If something new or from
emerging research was required, the museum tried to partner with the industry so that the equipment’s
could be loaned. According to Milan,

What we will be developing at is if it’s a science demonstration that we don’t have the
equipment for, we have a workshop down the back and we can ask them to build equipment
for us. And so, we can have custom-built equipment’s, so a lot of it comes from the Scicenceworks especially. Because for things like physic demonstrations, then you need a machine that does what you want it to, so you get this workshop to build a machine for that. If it’s got a historical element, we usually try to use something from our collection. If it’s looking at new and emerging research, then we try to partner with the industry so they can loan their equipment.

**4.5.2.4.6 Experiential Learning Approach**

The lessons at Scienceworks were highly interactive. According to Milan, it’s very much along the line of pull this level to see what happens. And that’s experiential learning we want. We want not to talk about what happen if we pull the lever, we want them to go pull the lever and then talk about what happen. So, it’s all about the experience for us.

Based on this admission, Scienceworks provided learning experience that required the students to physically interact with the objects in a meaningful way that would ignite learning and curiosity for knowledge.

References towards experiential learning were also made in other parts of the interview. For example, when asked whether he believed that OBL was effective for every student, Milan added,

> Because we want the unique experience, we always try to make it object-based learning.”

He also mentioned,

The program that you’re going to see with Hudson [the Public Program Manager], we went source a meteorite that was actually dug out of the ground. We’ve got amber with insect trapped inside of it. We’ve got a rock with dinosaur fibre in it.

And when he was asked whether the students would be given the chance to hold the rare objects, he responded,

> Yes. They’ll get a box that’s so big [hand gestures]. When they open it, they’ll get a video camera and an object set in… so they’ll be able to hold that.
The department also went to great lengths in making available suitable tools and teaching aids that would support this approach. In his explanation about the selection of objects for OBL, he mentioned,

For things like physics demonstrations, then you need a machine that does what you want it to, so you get this workshop to build a machine for that. If it’s got a historical element, we usually try to use something from our collections, then we try to partner with the industry so they can loan their equipment.

4.5.2.5 Pedagogical Strategies

Scaffolding and questioning were two strategies that supported Milan’s lessons.

4.5.2.5.1 Scaffolding

Milan explained that educators often had the opportunities to observe students’ thought processes particularly in teaching primary school students. He believed that it is important that lessons be structured to scaffold this thinking process. He said,

I always take this function of students will come in to the classrooms with the world view and things they know and that the job of the teacher is to build on that. Often new things that they can explore until that new things fit into their world view.

4.5.2.5.2 Questioning

Milan would normally begin the lessons by asking a set of questions that would provide him with information in relation to where the students were in their learning before introducing the concept (or the content) that was foreign to these students. Questioning was used in identifying what the students already know about a particular topic.

4.5.2.5.3 Teaching Aids

The department’s focus on experiential learning through an OBL approach saw the necessity of teaching aids in every lesson. Various aids were mentioned throughout the interview including steam
engines, printing presses, scientific devices, fossil, amber with insect trapped inside it, meteorite, a rock with dinosaur fibre and video camera. Milan emphasized that the department tried to use authentic objects for all their education programs. If the objects were not practical to be used in the lessons, that it was too big or too valuable, then a model that closely replicate the object would be produced by the Preparatory Department of the museum.

4.5.2.5.4 The Use of Information, Communication and Technology (ICT)

There were two aspects of technology use. First, the use of information, Communication and Technology (ICT) in supporting the teaching sessions carried out at the museum. According to Milan, The Department of Education runs their own trial and offer their recommendations. And often we try to use the technology that the Department of Education said ‘Yes, this is an excellent technology and it works well in the classroom.’ Sometimes, we try to use that.

He also said that the museum had an extensive IT department and the educators and presenters rely on this department as a source of reference for technology.

Second, the use of the Internet as a medium in providing online educational resources for the teachers and students. In addition to the face-to-face teaching sessions, the museum also provided online resources in the form of an Education Kit downloadable by teachers and students. Milan’s description of the education package is,

The hope is that the teacher will download the education kit for each exhibition they’re booked into for the trip. If they download the education kit, what it has inside is the curriculum links to that particular exhibition, information on how to actually plan out their excursion, how the students will get the most out of their excursion and then we’ll all those tuning in activities on topic, and then it also includes post-visit activities and on-site activities if they want.

Based on Milan’s description, the education package was comprehensive consisting of pre-visit, post-visit and on-site material that teachers and students could use to assist with their excursion. They could even be used by teachers and students who were not visiting the museum.
4.5.2.5.5 Challenges

One of the challenges in implementing scientific-based programs was the need for updating these programs in line with the discovery of new knowledge. An example of these was the space programs run by the Planetarium, one of the permanent exhibitions at Scienceworks. In introducing new programs, there was always a possibility that the programs needed to be streamlined and improved on. The robot program, was introduced to a group of students and it was found that some of the terms did not go well with students’ understanding and had to be explained verbally several times. Students were also required to do a lot of navigations to move the robot and this had confused them in the process. Milan used this experience and feedback from teachers and students to improve the programs.

4.5.2.6 Similarities and Differences between School and Museum Teaching

In many ways, according to Milan, the education programs in the museum were similar to schools, as the curriculum was still the basis of reference and the approaches and strategies used were based on educational theories. However, within that, different experiences were created. For example, instead of using replica or recreations, real objects were used.

The program development also was more rigorous and detailed because the education officers developed these programs in such a way that they could be understood by the presenters. Even though some of the processes were similar to the one by teachers in schools (i.e., the curriculum, learning outcomes, interpersonal relationships) however because teachers prepare lesson plans for which they themselves were the audience, therefore they did not have to be as detail and as specific.

In responding to whether school children learn differently in a museum than they did in school, Milan replied that the museum educators deliberately tried to make a distinction in attempting to offer an educational experience that could not be recreated at school and taught the students in different way than what they could experience in schools.
4.6 ANALYSIS OF INTERVIEW RESPONSES: NATIONAL GALLERY OF VICTORIA (NGV)

NGV is the oldest and largest art gallery in Australia. It was established in 1861 and has a huge collection of visual works of renowned artists from all over the world. This collection of works was acquired through gifts and donations from individuals and is estimated at 65,000 works of various forms and sizes. Amongst the popular donors is Alfred Delton, a merchant who donated two million Australia pounds to purchase works of art by many great artist such as Rembrandt, Titian, Veronese, Tiepolo and Poussin (Westbrook, 1964). The rapid growth of the collection has urged the establishment of a new gallery and in 1965 located at Melbourne Arts Precinct of Southbank. Since December 2003, NGV has operated across two sites with a branch gallery at Federation Square, Melbourne (Council of Trustees of the National Gallery of Victoria Australia, 2004).

The following findings were obtained from semi-structured interview sessions involving an NGV’s executive and four museum educators. Each staff member was interviewed only once.

4.6.1 Analysis of Data from Museum Manager: Reese Webb

The interview with Reese Webb, the NGV’s officer, in addition to program planning and the administrative aspect of education programs, also disclosed information about educational theories and pedagogies. This is partly due to the fact that Webb, apart from planning and developing education programs, was very much involved with the teaching of these programs. The discussion of findings from the interview data with Webb is presented representing both roles that she played: as NGV’s executive as well as an educator.

4.6.1.1 Demographic Information

Reese Webb was a Senior Educator at the National Gallery of Victoria and her interests in museum education bloomed while she was attached as a pre-service teacher for two weeks’ professional placement at the gallery. She was a school teacher for five years before shifted her role as an Education Officer at a gallery in Monash University. She then worked in NGV for seven years before taking a maternity leave in 1992 and only came back in 2004 part-time. In the meantime, she did consultancy
work related to galleries and education. She began working at the NGV in 2004 and was promoted to Senior Educator position in 2009. Her new role required her to oversee arts and public programs which include the education programs. Her responsibilities was in the management of education programs (such as bookings and timetabling), fund application, resource development (exhibitions, programming) and strategic direction of the department.

4.6.1.2 Teaching Load

Webb still carried out teaching sessions however her teaching load was less as compared to other educators in the gallery due to her administrative tasks. She taught during busy periods and during the period when she was free from other projects, and not more than three sessions in a week.

4.6.1.3 Timetabling Role

One of the important administrative tasks handled by Webb is the timetabling of sessions. According to her, educators would either work individually (for teaching sessions) or in groups (for workshops). It is Webb’s responsibility to assign the right expertise to the right group. Webb also ensures coherence in the teaching sessions if two or more educators are responsible for the same student groups that are booked in for sessions over a period of time. She indicated,

And once the timetable is out... I do nominate areas that they would like to work in. They have a certain degree of freedom to plan it in their own way, however, if there are three people in the same group, they need to work together so there’s some common experience that those groups get. I mean, for instance, we’ve just had a school that had been in for a workshop, every student in the school for a workshop over the last two weeks. So, I thought of coming up with that on timetable and I asked one of the staff to coordinate those workshops so that there was a plan of how that would all happens.

Webb also emphasized the consistency across groups.

What I was trying to ensure there was that the school wouldn’t come in and get a different experience from every educator.
4.6.1.4 National Gallery of Victoria (NGV) School Unit

In NGV, the division responsible for school programs known as the NGV School Unit. Webb explained that the unit aimed to improve students’ learning and teachers’ professional capacity through arts, NGV’s collections and exhibitions.

4.6.1.4 Education Program

Webb provided a detailed account of how the education programs were carried out at the gallery. The following is the analysed data for the responses provided by Webb for NGV’s education programs.

4.6.1.4.1 Program Development

Planning for a program was normally carried out three or four months in advance. There were several stages to program planning and development. Webb described this process according to three different stages. Explaining this process, Webb said,

There’s a lot of work done beforehand to offer new things, to present ideas to teachers and all of that come out in a booklet that we send to schools. The next stage of planning which really should be simultaneous, you can’t do it afterwards is the details. Like you’ve said, you’re going to do this whole day program related to special exhibition. Ideally that should have been done when you thought of the idea but sometimes the reality is, ‘Oh my goodness, I said I’d do that I better get organised.’ The next stage is to flinch the program up, maybe in identifying the target audience, booking speakers and how you’re going to deliver. So, it’s about what you’re going to do, how you’re going to do it. And one other thing that we’re trying to build in, increasingly, how we’re going to evaluate it at the same time. We haven’t been so good on doing that, we have to do more of it. So, the planning is thinking about the content, how to explore and how we’re going to measure its effectiveness.

Webb’s last statement summarized the program development’s process for the education programs in NGV. The first stage involved deciding on the type of program as well as working out the details for the program and these two aspects had to be carried out concurrently. The second stage was
about working out the specific information on program implementation, for example, the bookings of the speakers, its delivery, etc. More details were worked out for a program as the day approached. The final aspect was the evaluation of the program, in which, according to Webb was increasingly valued in relation to its significance to the whole process of program development. Webb added that teachers were provided with the information about the programs in the form of booklets that were sent to schools.

According to Webb, staff normally carried out the planning process at two levels: planning for long term programs and planning for teaching sessions. Planning for teaching sessions was usually implemented within three days as the educators would only receive information about their teaching sessions on Friday, a week prior to the visit. They also needed to respond to teachers’ requests and this was an important consideration in lesson planning. She explained,

People [educators] don’t really know what they’re going to be teaching, apart from the special program that is scheduled in advance, you only get to know the timetable the week before you teach. And also, we take bookings up until that week, on a good week I’ll have the timetable out on Tuesday or Wednesday for the teaching of the following week. So, people have about three days to have a look at what classes they’re on and to prepare for it. So as soon as the timetable comes out you can see people thinking, “Right, I’m on that.” And they start to have conversation with each other, if two or three people run a workshop they discuss what they want to do for the workshop, say ring up the teachers and ask what they were doing. You go from that bit of three months in advance planning to the week before when you’re looking at the classes that are coming up but in that week, there might also be something that you started planning three months ago.

4.6.1.5 Lesson Planning

In discussing the process involved in planning for a lesson, Webb also detailed the types of school programs offered by the NGV School Unit.
4.6.1.5.1 Prior Information Required

Webb explained that the need for prior information varied, and most of the time museum educators depended on their intuition and experience in deciding on what kind of preliminary information was important. The nature of information required was dependent upon the type of programs the students were booked into. If it was a pre-fixed program, very little information would be required. However, if it involved more sophisticated programs such as tailored programs to specific audience, more information would be needed from the teachers. This involved personal conversations between the educators and the teachers normally either by phone and/or emails. Negotiated programs, for example, involved a high degree of communication between the educators and the teachers, particularly in determining the lesson structure. This type of program targeted a specific audience with specific curriculum.

Though teachers were highly encouraged to telephone the educators and discuss their preferences, most of the negotiated programs were initiated by the educators. The educators were responsible for putting the suggestions up and negotiating around the suggestions with the teachers. Webb revealed,

For negotiated programs, we haven’t sort of got a set of patterns for those. But we do invite the teachers to ring and discuss. Our preferred option is actually to have a conversation with the teacher about what they might want to do. Sometimes the negotiation comes from our initiatives. We look at the booking and we think we need to know a little bit more about this and so we start the negotiation. But through that invitation and the program booklet we hope that teachers will ring up and say, “Well, we’ve got this group of kids and we’ve been doing this and what can do you do for us?

4.6.1.5.2 The Timing for Lesson Planning

The planning for teaching sessions generally began right after the staff timetable was released, according to Webb normally in the middle of the week, Tuesday or Wednesday, with information of the teaching sessions for the coming week.
4.6.2 Analysis of Data from Museum Educator I: Emma Roberts

This section of the chapter presents the analysed data obtained from a museum educator from the NGV, Emma Roberts.

4.6.2.1 Demographic Information

Emma Roberts was an educator with the NGV and had been in this role for ten years. She taught for 26 years at primary, secondary and tertiary levels and held a primary teaching certificate, a secondary art educator degree and a Master’s Degree in Education (Research). At the gallery, she specialized in the Asian and Indigenous collections. As an NGV educator, she was responsible for implementing education programs for students with the use of both the permanent collections and temporary exhibitions, carrying out professional development programs for teachers, developing on-site and online resources and collaborating with partners and external organisations.

4.6.1.2 Teaching Load

Roberts was usually assigned with three sessions per day involving three days per week. Each session lasted for one hour consisting of 15 to 18 students per groups. However, the group size would be smaller for students from primary school, prep and kindergartens.

4.6.1.3 Lesson Planning

In relation to lesson planning, Roberts disclosed the challenges that she faced and described the kind of preparation that she engaged in for her lessons.

4.6.1.3.1 Prior Information Required

Roberts explained that the only information available from the booking were the topic and the students’ age group. Even with this limited information, Roberts said that the educators could still infer students’ learning in relation to where they were in the curriculum. She did admit that one of the challenges for teaching effectively was the fact that the educators had no information about the learning of the students.
I think of the challenges; the biggest challenge is we don’t know the students. We know many of the teachers because they come back year after year. But if you don’t know the students, it’s very hard to teach them effectively.

To overcome this issue, Roberts always tried to gather as much information about the students from the teacher during the few minutes of interaction before the teaching sessions commenced. She expressed the lack of ample time in lesson preparation.

And because we have three classes a day and I’m on three days a week, I don’t have a lot of time to prepare. So, you know like I had classes 10 o’clock this morning and 11 o’clock this morning and they’re kindergarten group and a year three group. So completely different topic, focus and so on.

Roberts provided an elaborate response in relation to aspects under consideration when planning for a lesson.

I need to be thoroughly prepared about the artwork, about the themes, about the... And we have a curriculum that is, you know...we have to follow that curriculum, we also have the gallery’s mission statement which is to illuminate life. So, kind of make sense of like through collecting and presenting great art. So, I’m very conscious of that as a theme, I’m conscious of the curriculum. We have about six organisational things that we have to account for. So, in terms of the gallery’s aims and objectives, the Department of Education’s aims and objectives, theories of educational practice, then what the schools try to achieve. I try to put all that into one lesson. It would be if the focus is on English, so I’ll be hoping to impart some of the English skills: listening, speaking, reading.... Within our art framework we’re looking at exploring and responding to art or creating or making art. So, my questioning will be directed to reveal that information. So, when the students are in front of the artwork, that would be the focus of how I question the students...

She also mentioned,

My other preparation is always being well informed about what is available in the gallery. So, if we’re looking at something and I think, “Ah, I know that object is going to relate well to this, let’s go and find that object.” So, it’s some sense of sequence, it’s not just five artworks
and all fantastic but have no relationship to each other. So, I think I try and establish a link so that the students can see some development, it’s not just Picasso and the Rembrandt and the Tiepolo and Amiro, it’s why those works and what’s the relationship.

In summary, there was a list of factors that Roberts took into consideration in planning for lessons. These included the curriculum, the gallery’s aims and objectives, the Department of Education’s aims and objectives, the theories of educational practice as well as the school needs. At content level, she also considered the artworks in relation to their relationships with the themes of the lesson, and matching the content of the lessons to the students’ age groups.

In order to plan lesson successfully, Roberts stressed the importance for the educators to acquire vast knowledge about the collections at the gallery. This knowledge guided in linking the lesson to the curriculum, the gallery’s aims and objectives, theories of educational practice and in meeting what the schools wanted to achieve.

4.6.2 Analysis of Data from Museum Educator II: Kate Collins (NGV)

The second educator interviewed was Kate Collins who had been in the NGV for eighteen years. The following is Collins’s description of how she carried out her teaching task at the NGV.

4.6.2.1 Demographic Information

Kate Collins’s previous work experience was in fashion and textile industry in London and graduated from an art school with a Bachelor Degree in Textile Design. She had no prior teaching experience and pursued her Bachelor Degree in Education (Primary) with The University of Melbourne as a mature student. Being at the NGV for fifteen years, she specialized in secondary education particularly in English, history and philosophy. Her responsibilities include the development of programs that use arts as a context for a number of different subjects (such as English, history and philosophy). She also ran programs for the International Baccalaureate (IB) involving curriculum related to arts and ethics as well as developed on-site and online resources for students’ learning and for teachers’ professional development.
4.6.2.2. Teaching Load

Collins spent an hour for each teaching session, normally involving 15 to 20 students per group. According to Collins, her sessions per week were dependent upon the time of the year. However, on average, she conducted up to three sessions a day.

4.6.2.3 The Types of Education Programs

Collins narrowed down the programs at the gallery into two main types: standard programs and negotiated programs. According to her, standards programs were pre-planned, generic and fixed in nature and generally were published in the form of booklet. Teachers who booked their students into any of the standard programs would be asked by the booking staff to provide information about their students such as their year level, group size, the name of the school and the focus of the class. Some teachers, however, would be requesting for a focus that was not listed in the standard programs. The Education Unit at the gallery was flexible in accommodating the teachers’ need by offering negotiated programs.

Collins expressed how teachers positively welcomed this type of program,

We are moving more and more towards a model where we negotiate programs with teachers rather than issuing a booklet and say this is what we offer. It’s happening more and more and more. I’ll tell you what, it’s so much more satisfying than a quick hit in the gallery. I mean, we know how the gallery visit is going to be integrated into the curriculum and they are going to do pre-visit work and post-visit work, then it makes so much more sense.

She added that she felt that negotiated programs benefited the students on a long-term basis, as compared to standard programs which had stronger short term impact. According to her,

It’s [negotiated program] a really serious education underpinning... It may have long term repercussion but it’s so much more beneficial to the students if it’s part of a long-term program.

Collins also discussed several advantages of negotiated programs as opposed to the standard programs. According to her, first, it allowed the educators to obtain information from the teachers about how the excursion would be integrated into the curriculum and support the teaching in schools. Though
learning experiences also occurred with the standard programs, negotiated programs allowed the educators to communicate with the teachers, schools and/or the students’ learning needs and then the educators could tailor the programs to meet these needs.

According to Collins, with such a short session, it would be difficult for the educators to decide the kind of input suitable for the lessons without further information from the teachers. She also stressed the significance of feedback from the teachers about the lessons, and that was something that was absence from the standard programs. According to Collins, as this kind of program initiated contact between teachers and educators, the teachers could channel their feedback or evaluation on what they thought about the lesson, unlike the standard programs where teachers and students would leave as soon as the program finished. She added that it also served as a professional learning experience for the educators because they have to constantly refresh their knowledge in program planning and delivery.

4.6.2.4 Lesson Planning

In explaining her lesson preparation, Collins admitted that it was more difficult to plan for standard lessons because of her unfamiliarity with the students. Customised programs provided greater flexibility for the museum educators as it enabled them to obtain more information about the students from the teachers before the lessons commenced. The analysed responses by Collins are detailed below.

4.6.2.4.1 Prior Information Required

According to Collins, the prior information available was dependent upon the types of programs and at the NGV, educational programs could either be a standard or a negotiated program. Upon booking, the only information made available to the educators was the students’ year level, the number of students, the school and the focus of the class. However, if the students were booked under negotiated program, she would give teachers a phone call and enquire about more information about the students and their learning. According to Collins,

If it’s not one of our standard programs, which we publish in our booklet and generic programs then we talk to the teacher and we ask how these programs are going to fit in the curriculum and what their particular requirements are. So, we’ll know the age level of the students, the number of students, the area of Victoria which they reside and then we start our research.
For Collins, negotiated programs allowed her to customise teaching accordingly to the students. It also meant that she had more flexibility in obtaining information about the students from the teachers, hence enabling her to plan for lessons that specifically target students’ needs. Collins explained because the teaching session was only an hour, without negotiated programs it was really difficult for the educators to decide, in their lesson planning, the kind of input that would really benefit students.

4.6.2.4.2 Preparation of Lesson Plan

Collins did not prepare any lesson plans for all the classes. According to her, for the lessons that she had taught, she would revise the sequence of the lessons mentally. However, for program that was relatively new and high level, she would prepare a detail lesson plan and teaching notes. Collins’s responded,

Just to give you an example of something that we did last week when we had Theory of Knowledge’s students, they were in year 11, we were specifically asked to deliver a two-hour program. The first hour was a lecture on representation of the human body through time. Now I would say that took me about eight hours of solid work to prepare a PowerPoint first with all the things. So, with that I had a PowerPoint and I had eight pages of notes. And then when I went out to the gallery I had more notes. So yes, I have a very specific lesson plans for certain things.

She informed that it was not compulsory for the educators at NGV to have lesson plans. In responding to a question, she explained that it was up to the individual educators to have or not to have their own lesson plans.

4.6.2.5 Teaching

Collins would spend the first quarter of her lessons in gauging the students’ reactions in determining the direction that she needed to take in her lessons. To her every group was different, what worked for one group might not work with the other. The following is Collins’s input about her teaching.
4.6.2.5.1 Sequence of Lesson

Collins began every lesson with a preconceived idea of how it might be, however the direction of the lesson would be determined only after the first ten to 15 minutes of the interaction with the students. Explaining this, she said,

We don’t know the cohort of students before they arrive usually. Then we’re confronted with all sorts of big questions in the first five minutes. And you start to engage the students and you can tell pretty quickly what strategies going to work best for them.

Collins went on and provided few examples,

If they’re [students] group of unruly years nine boys they think how boring this is going to be, then possibly one of the best strategies would be to sit down and listen to a story. Just to warm them up in the first place. On the other hand, there’s another school that comes in here, the pedagogical philosophy is very much all about questioning. If you don’t start with the questioning they will be very disappointed. The kids are used to it, the hands are up all the time, and it becomes very dynamic atmosphere.

However, she pointed out the importance for the educators to be flexible with the direction that they take in their teaching. According to her,

You might have a lesson plan but you see if the first five or ten minutes, if it’s not gonna work you gotta think on your feet and completely change what you’re going to do.

4.6.2.5.2 Educational and Pedagogical Theories

Collins did not stick to a particular use of educational theory but commonly had a blend of a few theories to guide her teaching. The basis of her teaching was the reference to the Victorian Certificate of Education (VCE), and the Victorian Education Learning Standards (VELS).

4.6.2.5.3 Victorian Education Learning Standards (VELS) and Victorian Certificate of Education (VCE)

The Victorian Education Learning Standards (VELS) served as framework that defined Collins’s lessons. Responding to a question about the reference to VELS, Collins explained,
Well, yes, we intimately tied to the Victorian Education Curriculum which as you probably know called VELS, for the middle years, and VCE. So, we need to make sure that we’re fully aware of the structure and pedagogy behind VELS and VCE.

4.6.2.5.4 Constructivism versus Behaviourism

Collins questioned the relevance of carrying out teaching solely within constructivist framework. She believed that using only a constructivist approach to characterise teaching did not scaffold the learning of students who had limited knowledge about the gallery and what gallery means. There were occasions where she had to simplify content complexity to topics that addressed the basic nature and function of art gallery. An illustration of this would be her detail anecdote which addressed an inquiry approach (constructivist) and imparting information in a one-way manner (behaviourist). She clarified,

Look, I particularly believe very, very firmly in the inquiry approach but I would have to say I was taught in the university, but I have questioned it quite specifically over the years because I feel sometimes the inquiry approach does have its drawbacks. And I think that because as educators we have part of our role very specific information that only we have. So, okay, a group can come in and we’re trained to ask exactly the right questions. I mean I frequently stop my lesson here with students if they’re coming for general introduction to the gallery with ‘What is art?’ ‘Why do people make art?’ ‘What can we learn from art?’ Because I think that’s incredibly important to break down the barrier that’s often there, which is ‘Oh, you only come to the art gallery if you’re interested in art.’ So, I want them to be able to discuss and see the relevance to their lives. So, I do ask a lot of questions.

She also stressed the importance of working towards students’ engagement,

But on the other hand, you know, if you were to just stand there and to talk, it’s not always the right way to engage the students. So, by drawing them in, it’s often the way to engage them.
4.6.2.6 Pedagogical Approaches

Collins employed a number of teaching approaches, described below.

4.6.2.6.1 Student-Centred and Teacher-Centred Approaches

Collins used a combination of teacher-centred and student-centred approaches in most of her teaching sessions. She found that students needed to be guided with information at the initial stage of the teaching before they could independently construct meaning for themselves. Therefore, she found it hard to work within constructivist approach specifically, the inquiry approach entirely. She would normally start the session by imparting specific information and by asking questions and offering information before students can engage in learning more independently.

4.6.2.6.2 Object-based Learning Approach

Collins felt that using objects and artefacts was becoming more relevance to museum education. She attributed this to the increasing access the public had to retrieving information with the advancement of internet and information technology, according to her, gallery presented unique opportunity for the students to look at real objects and appreciate its details. Collins pointed out,

I think it is more relevant now that it has ever been because I think it’s now so easy to access everything online. And our job is to show that coming to the museum is an utterly unique experience cause to get to engage with the real things to see the scale, to see in some cases the brush strokes close up, the texture of the paint, to feel the aura, the magic of the object, or the artwork, whatever it happens to be.

4.6.2.6.3 Artful Thinking

Collins described Artful Thinking as one of the approaches the she utilised in her teaching. Explaining about the approach, she said,

[Artful Thinking] is a new project, well... it’s seven years old now from Harvard in America. And it’s from Project Zero Education Team. They work out a mean of developing particular thinking dispositions and skills through looking at artwork. So, if a teach comes in and looking
for that, we’ll have to make sure that we select appropriate works, we learn about a particular thinking discipline, and we research it. So sometimes it’s more pedagogical, sometimes it’s more information in terms of the research that we need. So, it’s incredibly varied.

4.6.2.6.4 Inquiry Approach

Collins expressed that she felt strongly about the inquiry approach however had begun to question its suitability for all the student visitors who took part in the programs. As a museum educator, she admitted that she was trained to ask the right questions and prompting the right inquiry, however, there were times which she had to stop questioning upon realizing that the groups she had needed more basic information before they could construct their own learning. She explained,

A group can come in and we’re trained to ask exactly the right questions. I mean I frequently stop my lesson here with students if they’re coming for general Introduction to the Gallery with ‘What is art?’ ‘Why do people make art?’ ‘What can we learn from art?’ Because I think that’s incredibly important to break down the barrier that’s often there, which is ‘Oh, you only come to the art gallery if you’re interested in art.’ So, I want to be able to discuss and see the relevance to their lives.... Having said that I also feel terribly strongly that we need to be able to give this very specific information and that if any teacher during... professional teacher can walk in here and ask the right question and get the students talking about the artwork but they might not have that specialist knowledge. So, what I tend to do is to try very, very hard to balance that and have a blend of the inquiry approach and me imparting information.

4.6.2.7 Pedagogical Strategies

There were a number of strategies that Collins used in the delivery of her lessons.

4.6.2.7.1 Story-telling

One of the strategies employed by Collins is telling stories. She said,

I’ve got nothing against standing there for ten minutes and telling a story, beautifully. And I think that story telling is part of good education.
According to her, amid the kids’ interests toward technology, they still would listen when they hear good stories. She believed that story telling makes a strong connection between art and literature.

4.6.2.7.2 Mystery Bag

She also employed a strategy known as a Mystery Bag, which Collins had learnt from her observations in the Tate Museum in London. According to her, it was an amazingly effective strategy in bringing out rather unusual interpretations of paintings from the students. She explained how the strategy was carried out,

So, the kids take out something interesting like shell or children’s toy or whatever, and in somewhere or other, they have to relate the descriptions of what they are having in their hand towards the painting.

4.6.2.7.3 Well-known Quotations

In addition to story-telling and mystery bag, Collins would provide a number of well-known quotations and get the students to match these quotations with the respective artwork. When a particular strategy did not work as planned, Collins would reflect on her teaching and tried to critically analyse what could she do to improve. She would also seek advice from colleagues and find ways to make sure that the strategies would work in the future. One of the reasons behind her failed strategies in the past was due to targeting the instruction higher than the students’ actual level of abilities and she tried to improve this by having a plethora of strategies that work across a range of students’ abilities.

4.6.2.7.4 Teaching Aids

Collins explained that a lot of educators carried with them a map of Australia and used it in their lessons to show different regions of the origins of the Indigenous people. She would also compile a number of supporting visuals that related to a particular artwork being discussed. For example, she would prepare a laminated reproduction of Guernica when using the Weeping Woman in her teaching.

As mentioned by Collins,
So, for example if I visit Weeping Woman with a group of students, I usually bring along a laminated reproduction of Guernica. I’ve got one this size [hand gesture]. I bring along a photographic portrait of the model that was Picasso’s lover for that particular work. A picture that he drew of his lover when he was 15.

4.6.2.7.5 The Use of Information, Communication and Technology (ICT)

The use of technology was reflected in her use of PowerPoint presentations in her teaching. In addition, the educators were accessible to an online resource that supported their teaching. The gallery had initiated a site called Art Start and according to Collins,

Well on that site we are going to be including something called Views and Voices. And the idea of this is that students can produce pieces of writing, dramas, monologues, they can be films or they can just send in a piece of writing and it will be uploaded into the side.

4.6.2.7.6 Selection of Artworks

Collins explained that the selection of artworks is not only dependent upon the focus of the lesson, but also influenced by the nature of the programs. With the standard programs, the artworks were selected by the educators. However, the selection of artwork for negotiated programs was predominantly decided by the teachers and was dependent upon the teachers’ knowledge of what was in the gallery. According to Collins, often teachers collaborate with the educators in selecting artworks. Collins provided an example,

Give you an example of a group of teachers who wanted to come in with year ten students to look at... The subject of their course was Forgotten Victims of War. So, they were looking at how people suffered during war outside the arm forces. So, they asked us to find works of arts in the gallery that related to the Second World War. So, it was entirely up to us to guide them. And say, ‘Look, we have this magnificent picture by Alfred Tucker that looks at how American service men were seized at the time.’ On the other side of NGV we might say, Look, this is a magnificent portrait of American soldiers in World War Two or whatever.’ And so,
we would be leading that discussion. But generally, if they select a program from our booklet then it’s entirely use, we’re not guided by the teachers at all.

In relation to the selection of artworks for standard programs, there were several aspects that came into play. As described by Collins,

It depends not on the teachers, no... it depends on a variety of factors really. It might just be that we don’t want to repeat what we did the day before, so we choose a different selection. We might want to integrate, as I said earlier, something we just learned about in another context that we want to trial. So, it’s a fluid thing that we’re constantly changing and updating. But having said that, there are certain icons in our collections. Weeping Woman will be one, El Diablo... Cleopatra is another and in a lot of cases, teachers, because they’re so well known, would expect us to include that in our tour. So, that needs to be taken into consideration as well.

She also added that a high degree of research is necessary if the artwork is not something that the educators are familiar with. Collins explained the kind of research that they had to do,

With some senior programs, for example, they may specifically come to look at something like Renaissance history. So, in that instance, it we’re not already familiar with works that deal with that subject, then we have to do high degree of research. And through that we would look at existing NGV catalogues, books, publications. We might sometime talk to the curator, we would do Internet search, we would ask our colleagues... so that would be one way of working.

Explaining about researching artworks, in doing so expressing her passion for trying out new artworks,

If you’ve been here a long time, you don’t need to do much research at all because you already have a good handle on the variety of things that you need to see, the kind of introduction that we will give and the questions we might ask them at the end before they leave. So, having said that, I personally can never bear to go to the same works cause it’s become a bit sort of tired. So, it’s always refreshing to investigate new works that you don’t know. So, that’s the kind of things that you need to do.
4.6.2.7 Challenges in Teaching

Collins expressed that it had always been a challenge to compress significant learning experience within one contact hour.

I think that it’s one of the greatest restrictions in our job, only having an hour. As I said another reason why we engage in negotiated program because you feel it is just an hour, it’s continuing before and afterwards. I think it’s incredibly difficult in an hour to get back to the idea how you balance the questioning with the knowledge.

She added that with students who had never stepped foot to the gallery prior to the excursion, an introduction had to be included in the session, which would also reduce the time to carry out the planned content. There were also cases where students had no knowledge of Indigenous people and their artworks. According to Collins, this often took 15 minutes for her to encompass as much information as she could about what it was to be Indigenous people in Australia and the whole function of arts in Indigenous community, as well as how it was different from the Western traditions.

4.6.2.10 Similarities and Differences between School and Museum Teaching

In responding to a question about how similar and how different teaching in museum and school, Collins gave more emphasis on the differences between teaching in these two settings. According to her,

I mean there are similarities. There’s always sort of a basic structure that you’ll hang your lesson plan on.

However, her following response identified several differences. One apparent difference is the knowledge that the teachers had about students. Teachers were at an advantage, having exposure to the students over a period of time, they acquired firsthand information about students’ learning and their backgrounds, learning styles, preferences, etc. Museum educators, on the other hand, did not have access to such information.

In addition, Collins explained that students would normally have prior knowledge about schools unless if they were newly-enrolled students. However, most students who came for the excursions were
first-timers in the gallery. Therefore, the educators had to structure their teaching to make these students feel more comfortable in a new environment. Her response,

I think the key difference here is that when the students come in you usually don’t know them. So, there’s no personal knowledge of individual and their capability, the dynamics within the group. There are too many variables that you don’t get in school. And I think the other thing is that it’s maybe the only time the students visit the gallery in their life. It could be potentially, it usually isn’t but it could be.

4.6.3 Analysis of Data from Museum Educator III: Linda Rogers (NGV)

The third museum educator who participated in the study was Linda Rogers, who was attached to the NGV as a permanent part-time staff. The following is the analysed data of the responses provided by Rogers.

4.6.3.1 Demographic Information

Linda Rogers was a school teacher and had worked in various art organisations before she joined NGV as a casual employee. She had a Bachelor Degree in Education (Visual Arts) and her role as an educator at the NGV was similar to other educators: conducted education programs, developed resources for students and teachers, handled tours and workshops and collaborated with partner and external organisations.

4.6.3.2 Teaching Load

Rogers explained that she usually handled two types of lessons, either a two-hour workshop or an hour of teaching, involving not more than 20 students in a group. And these sessions might run for two or three times a day, however according to her, the number of sessions which she was responsible to varied depending on whether it was peak or non-peak period.
4.6.3.3 Lesson Planning

Similar to other museum educators, Rogers also felt that having more information about the students would provide her with an added advantage. The following is the analysed data from the semi-structured interview out with Linda Rogers.

4.6.3.3.1 Prior Information Required

Rogers explained that the more information she managed to obtain from the teacher, the more effectively she could tailor the class to the students’ needs. Providing example, she said,

She [a teacher] really gave me the information that I needed. And I really tailor it, probably more to that one student because, you know, it was what they wanted. So, the more information you can get from the teacher, the better.

4.6.3.3.2 Preparing for Lesson

To Rogers, preparation was very important. The level of preparation was dependent upon the focus of the teaching. According to her, if the topic was something that she used to teach, then not much preparation was required on her part. However, if it was a new focus or new area, then a lot of hours would be put in for the preparation. When asked about the kind of preparation that involved, she responded,

Basically, lots of reading. And maybe I might develop some starting questions that I might use. The more you do it, the less you have to do then. But certainly, in the beginning, I would organise some good questions that I might use, that might be thought provoking. Definitely know the artwork that you’re about to speak about. It’s really important.

Based on Rogers’ response, a number of preparation tasks could be identified. Reading, designing and organising questions to ask and knowing the artwork involved were common preparations that Rogers viewed as important. Rogers identified several aspects that were essential to her lesson planning. First, the lesson needed to link with the curriculum, as she described,

We do actually link it to the curriculum. Especially year 11, year 12.... We will look at the state curriculum.
The second important aspect in lesson planning was the selection of artwork that would engage the students. She pointed out,

Using the same artwork but with different and various levels, different curriculum so you might have history come in or different approach of you might have to learn differently. When it’s history, you might have to learn about Gold Rush in order to talk about the economy, or the world and the gold, and not to mention antiquities. And I’m okay with it.

Rogers also addressed the importance of having variety of artwork and tailoring the content appropriately to students’ level of abilities.

And within that lesson, you want variety. So, you want to be sure that you’re going to do a different one [do different artwork within a lesson] ... But I thought they were ready for that [the artwork which she used in a lesson] because they were going so well so I thought this will be good. Got to look at the expression and what’s happening in that particular work. So, I guess they were ready for it.

4.6.3.3.3 Linking to Curriculum

As discussed above, Rogers stressed linking the lesson to curriculum as one of the important elements in her lesson planning. She explained her main document of reference was the state curriculum.

4.6.3.3.4 Lesson Plan

Rogers did not prepare a detailed lesson plan. For her lessons, she usually made mental visualisation of the sequence and how the lessons were going to be to guide her teaching.

I wouldn’t do an excessive lesson plans like in school, just more of a guide really. In my two degrees, I’ve worked out the sort of things that I would be focusing on. And the artworks in my head, I have them worked out. The type of questions that I would be asking them, I have them worked out in my head.
She admitted that in her early years as educator, she did prepare written lesson plans. The complexity of her lesson plans differed. If it was on topics that she used to teach, then she would just work out a sequence of the lesson.

4.6.3.4 Teaching

In teaching, Rogers always tried to get the students to generate their own thinking based on the artwork and the background of the artwork that she presented. One of the ways to achieve this, according to Rogers, was by not rushing when presenting artwork. The following is the account of how Rogers conducted her teaching sessions.

4.6.3.4.1 Sequence of Lesson

On the sequence of the lesson Rogers stated,

Well, the best way I guess is not to rush through and to stand in front of an artwork and talk.

The best way in teaching, I think, is to get them to do the thinking and things like that. They must come out and they feel like they have a relationship with that artwork. You know, when you get to know something really, really well and because of your learning experience within that artwork

4.6.3.4.2 Managing the Sessions

Rogers believed that, given the time constraint, only four to six artworks could be used for an hour of teaching session. Sometimes more time had to be spent on a particular artwork and shorter time for the rest, depending on the focus of the lesson.

4.6.3.4.3 Pedagogical Theories

Rogers framed her lessons mainly with the constructivist theory.
4.6.3.4.4 Constructivism

According to Rogers, she encouraged students to develop their own thinking through her questioning technique. This indicated her inclination towards the constructivist theory which called for social environment as stimulant for students to construct their own learning. Her preference towards the use of Community of Enquiry as her teaching approach could be that her teaching practice was framed by the theory.

4.6.3.6 Pedagogical Approaches

Her approaches to teaching include the community of enquiry, process and product-based approaches as well as object-based learning, explained in detail below.

4.6.3.6.1 Community of Enquiry

Rogers pointed out that she operated within the approach of ‘Community of Enquiry’. She responded, “Probably that community of enquiry but I’m not sure who started that. I always use that and then also depending on what it is: the curriculum, the state curriculum, whichever is the year level.”

4.6.3.6.2 Process and Product-based Approaches

She placed great emphasis on both process and product-based approaches. Not underestimating the importance of the learning that occurred during the teaching process, she believed that students leave the gallery happier if they had produced something, it gave them a sense of accomplishment. When asked about these approaches, she commented,

Oh, it just the product at the end. Some people think that it doesn’t matter that they walk out with a good finished artwork but I like them to go out with good finished artwork. They might think it’s more of learning and the skills and things like that, working with the materials something like that. I don’t know, it’s probably not quite right. Anyway, that’s what I think. I like them to go out with something at the end. And so, it’s not just about them learning someone else’s ability. They actually have a chance to prove themselves and to have a go. And then to think ‘Hang on, I can do this’.
4.6.3.6.3 Object-based Learning

Using artwork, Rogers often selected more than one artwork that was contrasted with another. This then, helped her to establish contrast in her lesson. Rogers informed that she preferred to use the same artworks repeatedly. Explaining the reasons for this, Rogers said,

To use it over and over again because you get really familiar with that particular style. And I guess it’s also, you know, teachers of English might love a book and use it over and over and over again because they know it really well. You think it could get really boring but because of the responses and everyone thinks differently so it’s fine.

4.6.3.7 Teaching Strategies

When asked about the teaching strategy that she used, Rogers quickly mentioned questioning.

4.6.3.7.1 Questioning

Rogers exercised questioning to get the students to critically engage the students in her lessons. She often used questioning to get the students to focus on creating contrast, this was used mostly to emphasise on similarities and differences. Talking about the level of complexity of the questions that she used, “there might be some questions that I might use for the big ones and for the little ones. You just have to change the wording a little bit. You still want them to think about the same thing.”

4.7 SUMMARY OF THE CHAPTER

The chapter presents the data based on the semi-structured interview carried out involving a museum manager from each participating museum and seven museum educators from the museums involved. The focus for the education programs offered by each museum organisation was unique to the museum’s type and the themes of its collections. The Scienceworks Museum, for instance, emphasized science-based learning content instilled through active interaction with exhibits, whereas the Immigration Museum focused on content which showcased the issue of migration and migration stories to Australia. The Melbourne Museum was more diverse in its content focus of all the three museums under MV. The curriculum-linked programs developed at the museum covered a wide range
of subjects and topics. The lessons carried out at the NGV, on the other hand, centred on artworks as the main theme. The way lessons were delivered was also distinguishingly different from one museum to another. Scienceworks Museum provided learning experiences to school visitors through active interaction with the exhibits, for example, by getting the students to pull a lever, press a button or perform a psychomotor-based task. Narrative was utilised in connecting the school audience with the hardships and challenges faced by the immigrants in their journey to Australia. Whilst the Melbourne Museum capitalized on the use of technological hands-on devices in its lessons in encouraging active engagement of students with the focused content. Object-based learning and inquiry-based approach were the two most common instructional approaches employed by the educators at the NGV. These two approaches were employed in enhancing student understanding and interest towards the gallery’s collections.
CHAPTER FIVE
DATA ANALYSIS OF TEACHING OBSERVATION

5.1 Introduction

The analysis presented in this chapter focuses on the data gathered from the teaching observations involving eight educators from the Melbourne Museum, Immigration Museum, Scienceworks and the National Gallery of Victoria (NGV). The observations were conducted with the purpose of obtaining an in-depth demonstration of teaching practice of each educator. The data derived complemented findings from the interviews and uncovered aspects of the teaching practice.

Each educator was observed once following an interview session. Having both the interview and observation sessions carried out on the same day enabled the researcher to establish a strong link between the responses provided from the interview session and the actual demonstration of teaching practice. Data is documented through the use of an observation checklist. The following sections present the analysis carried out on the teaching observation data.

The following table (Table 5.1) presents the topics of lessons delivered by the museum educators. The topics represented the nature of the collections housed by each museum.

<table>
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Table 5.1: Topics of Observed Lessons
5.2 Teaching Observation Instrument

A museum educator teaching checklist was utilised in recording the data from the observed lessons. The checklist was developed by the researcher in addressing eight aspects of teaching and the implementation of the education programs. Even though the statements on the checklist have to address specific areas of teaching, the themes need to be general enough to represent teaching practice in both museums and galleries. The eight aspects examined in the lessons are school visitors’ arrival and registration; sequence of lesson (set induction, content and conclusion); the utilisation of pedagogical approaches, strategies and techniques; voice projection; content clarity; appropriate match between content complexity and students’ level of ability; student focus, engagement and interest; the use of teaching aids, integration of technology. A copy of the checklist is included as appendix 3. In addition, the lessons were also audio recorded as a measure of validation to the data gathered from the teaching observation checklist.

5.3 Analysis of Teaching Observation for Melbourne Museum

One museum educator of the Melbourne Museum participated in the study and the following is the analysed data gathered from the teaching observation checklist of Rosita Hudson.

5.3.1 Museum Educator I: Rosita Hudson

The lesson observed was 1 hour and 15 minutes in duration and was carried out for 30 year nine students. The lesson was conducted at sections of the Melbourne Museum that were dedicated to a temporary exhibition of 600 Billion Years in 60 Seconds.

5.3.1.1 Arrival and Registration

When students arrived at the school entrance of the museum, an assigned officer welcomed the group and gave instructions for the students to place their belongings in the provided lockers. The teacher proceeded to the registration counter to make the payment. Because the lesson required the students to store their products in a digital form, a wrist band storage was bought for each student at a
cost of AUD$10. Both the students and the teachers were then accompanied by the officer to meet Rosita.

The area in the museum designated for the students’ arrival was sufficient to accommodate a large number of students in groups. There were several entrances connecting the main building (exhibition foyer) to the school entrance foyer.

Rosita welcomed the group and an informal introduction between her, the teacher and the students took place. The session observed involved team teaching, another museum educator, in addition to Rosita, would also be carrying out the teaching session. There were two museum officers who observed the same session as part of their training.

5.3.1.2 The Lesson

The following is the structure of Rosita’s lesson.

5.3.1.2.1 Sequence of Lesson

Rosita began her instruction by describing the lesson and the activities in which the students were going to be involved. She explained the nature of the lesson which was about film-making and producing short clips of evolutionary process, and this tied strongly to the Evolution Theory, a topic studied by the students in their science class. Details about the exhibition were projected onto the LCD screen. Students were given 25 minutes to do their filming.

The instructions and directions given by Rosita in the lesson were simple and easy to understand. The students were supplied with an orange box containing an instruction card and a flip camera; and when the filming was completed, they were given mini laptops to download the video clips. Rosita and the other educator demonstrated how editing was done using software available in the laptops. Rosita concluded the session by informing the teachers and students about activities that could potentially be follow-up activities once the students resume with their lessons in school.
5.3.1.2.2 Use of Information, Communication and Technology (ICT)

The use of information, communication and technology (ICT) was well integrated into the lesson. Students were each given a flip camera and part of the activities required them to download what they had filmed onto the laptops provided. They then had to transfer the soft copy of the file into their wrist band data storage.

5.3.1.2.3 Teaching Aids

The lesson delivered by Rosita was complemented by a number of teaching aids. During the lesson, she wore a portable microphone and that had helped to project her voice accordingly, particularly with 30 students involved in the lesson. She used PowerPoint presentation in her teaching and this was projected to the LCD screen. In addition, students were presented with a flip camera each, laptop and wrist band data storage.

5.3.1.3 Summary of Teaching Observation

Rosita’s lesson was characterized by the use of technology. In teaching the Theory of Evolution, students were required to produce short clips that contained information with regard to the process of evolution and were given 25 minutes to do this. The lesson demonstrated the orientation for self-directed learning assumed by students and students were given the autonomy to make decision about the process of evolution that they were capturing. Rosita took the role of facilitator in facilitating student activities and learning while students embark in their learning task.

5.4 ANALYSIS OF TEACHING OBSERVATION FOR THE IMMIGRATION MUSEUM

Two museum educators for the Immigration Museum participated in the study. The following are the details of the teaching observation carried out on lessons by Alicia Martin and Pam Weisz.

5.4.1 Museum Educator I: Alicia Martin

Alicia carried out a lesson focusing on the topic of the Wave of Migration. The usual time slot for a lesson of this focus is 1 hour 45 minutes where the first 45 is carried in the classroom and the
students would spend the remaining hour in the gallery where Alicia would introduce them to a number of paintings before they embarked on their own self-guided tours accompanied by their teachers. However, since students had to leave by 2.30 pm, she only had 1 hour and 30 minutes to implement her lesson.

5.4.1.1 Arrival and Registration

Upon arrival, students were directed to leave their belongings at the storage area. The teacher proceeded to the reception area where a letter of guarantee was handed over to the museum staff as a proof of payment. Students were then brought to a classroom.

5.4.1.2 The Lesson

The following is the analysed data based on how Alicia’s lesson was organised and structured.

5.4.1.2.1 Sequence of Lesson

Before starting her lesson, Alicia divided the students into five groups. Groups were assigned at random where students fill up the seats designated for each group. Once the students were settled, she introduced herself and engaged in small talks with the students to make them comfortable with the new surroundings.

She gathered the students’ focus on the lesson by discussing what museums are, introducing some of the common terms used in the museum such as collection, objects and artefacts. She then moved to the topic of migration and immigration, trying to uncover students’ familiarity and opinions about the two. Questioning was used to gauge students’ background knowledge. Alicia also attempted to link the lesson with the students’ lives by trying to identify students who migrated to Australia or with parents or relatives who migrated to Australia.

Alicia proceeded by introducing the activity called Period of Migration. A suitcase containing real life stories about migration were given and each group was required to select one story. These stories revolved around topics such as Gold Rush, British Migration, Post World War II, Inside Refugee and Post Vietnam. An activity sheet was distributed to every student consisting of a list of questions
related to the stories. Each group needed to identify the period or the timeline in history which the topic represented, discussed the stories in accordance to the questions in the activity sheet and then select one representative to present group’s discussion.

At the end of the activity, Alicia suggested activities that could be implemented by the teacher once they were back in school. The students were instructed to pack their belongings and move upstairs to the galleries. Alicia explained because of the time limitation, students only had about 45 minutes for the next lesson as opposed to an additional 15 minutes of self-exploration in the galleries.

Up in the gallery, students then were divided into two groups. It was not possible to carry out lesson involving all the students in the group given the size of the gallery and the appropriate group size in ensuring that every student was engaged with the activity. Alicia took one group and brought them to a different gallery and the remaining group was taken over by another educator. Students then were showed artworks that related to the stories introduced in the earlier activity. Discussions took place about the artworks with emphasis given on migration experience. Alicia concluded the lesson by summarizing a few points that captured the focus of the lesson.

5.4.1.2.2 Teaching

Alicia organised her teaching in such a way that her topics flew meaningfully. She began by discussing museums and their roles and interjected few commonly used terms to promote students’ understanding as these terms were used a lot in a later part of her teaching. She targeted her content to build students’ comprehension, her topics increased in relation to the levels of complexity. Her voice projection was appropriate, and she prepared worksheet for students during activity. She did not utilize IT in her teaching and relied on teacher-student interactions to engage students’ attention.

5.4.1.2.3 Teaching Strategies

Alicia used questioning frequently in her lesson particularly in the beginning when it was used as a method in gauging students’ understanding about the topic that was about to be introduced. She organised her teaching around teacher-centred and student-centred activities. At some point students
were guided with direct instruction, this autonomy was then transferred to the students when they made
presentations based on the discussions that they had about migrations.

5.4.1.3 Summary of Teaching Observation

The 1 hour 30-minute lesson was structured according to three phases: in the classroom, within the
gallery and self-guided tour by the teacher. Focusing on migration and immigration, Alicia
emphasized the period of migration through the utilisation of suitcase activity in which each group was
given a suitcase containing real life story of immigrants. The discussion focused on the identification
of immigration timeline and answering questions given in the activity sheet Alicia used questioning to
identify students’ level of ability at the beginning of the lesson, and her voice projection was
appropriate.

5.4.2 Museum Educator II: Pam Weisz

The following is the analysis of data gathered from the teaching observation checklist based on the
teaching session carried out by Pam Weisz.

5.4.2.1 Details of the Lesson

The lesson was carried out with a focus on Immigration and Identity. It was based on a
negotiated program where the classroom teacher wanted a lesson that aligned with the curriculum and
the topic that he was focusing on, specifically for students to obtain information about Italian migration
and the meaning of being Italians in current Australian society. The students watched the movie Looking
for Alibrandi and would be reading a novel of similar title based on a true story by Melina Marchetta.

5.4.2.2 The Lesson

The following is the analysed data of the lesson carried out by Pam Weisz.
5.4.2.2.1 Sequence of Lesson

Pam welcomed all the students and described the lesson. She provided a context of the lesson and explained that the lesson was designed to relate to students’ current focus in schools—they were studying a novel by Melina Marchetta, *Looking for Alibrandi*, and watched the movie adapted from the book. She continued by explaining the focus in her teaching on two aspects: immigration and identity and informed the way she would frame her lesson which would be through storytelling based on real-life migration stories to Australia and the activity sheet provided to students for them to note down important information about each story. She added that images and objects would be used to support her storytelling. Pam went on explaining the task. For each of the stories, students had to answer the questions on the activity sheet and this involved four themes: reason for migrating to Australia, historical moments or periods in Australia, difficulties faced by the immigrants and their contribution to the Australian society. However, before attempting this activity, students were given flash cards containing images of Australia’s important moments in history.

Pam produced a map of Italy and the observer viewed this activity as an attempt to provide context and background knowledge to the students about the focus of the lesson. She then explained her own cultural background and pointed out on the map where her parents used to live and when they migrated to Australia. Pam asked students if any of them have parents or relatives who migrated to Australia and got the students to engage in discussion and used the map to point out the locations in Italy where the students’ parents and relatives were coming from.

At the starting point of her story telling session, Pam wanted to show the students a 15-minute documentary that showcased the life of immigrants. However, she could not get the clip started and had to move on with another real-life story that revolved around the life of an Italian lady, Carmella, who migrated to Australia during the period of mass migration in Australia in 1957 as a proxy bride. Pam explained that during the time it was difficult for Italian men to find Italian women as their prospective brides given the small number of Italian women who migrated to Australia. As a result, most Italian men would marry through an arranged marriage by contacting their parents and relatives in Italy to find their future wife. As a wife, Carmella has a legal reason to come and live in Australia. Pam then produced a suitcase that contained a number of items: veil and her wedding dress, wedding photos,
sugared almonds which explained by Pam as a traditional gift in Italian and Greek weddings. Detailing
this tradition, Pam explained that the couple’s family would give five pieces of sugared almonds to each
guest and they symbolize happiness, good health, fertility, prosperity and success. When the guests eat
these almonds, it symbolizes their prayer of good wishes to the newlywed couple. Pam also took out
from the suitcase personal objects belonged to Carmella pieces of clothes that were sewn and
embroided, pointed out by Pam that it was a typical skill for girls in Southern Italy to learn how to sew
and embroid. Pam continued by revealing Carmella’s hardships living in Australia and these include
her labour to support her live in foreign land, language barrier, her loneliness and homesickness to her
family members in Italy. Following her injury from an accident in the factory that she worked for,
Carmella used the opportunity to study English and VCE before furthering her studies at tertiary level.

Her second story focused on work migration, a story about Pierto who was born in Pudia Hill
in Italy but moved to Milan in 1940s to search for a better opportunity for her career as a chef. After
the Second World War, Pierto who was with a wife and two children, met Mario who was the owner of
a popular Italian restaurant in Melbourne. Mario sponsored Pierto and his family to Australia and
worked in his restaurant. Pam explained the challenges faced by Pierto in his early life in Australia. One
of the challenges was the lack of ingredients for his Italian cooking. His migration as well as the
migration of other Italian cooks to Australia had helped to diversify Australian food, promoting the
availability of ingredients suitable for Italian cooking such as olive oil, pasta, different types of cheese,
certain kinds of vegetables, etc. Pierto then opened up his own restaurant in Melbourne by the name of
Grossi Florentino and following his death, his son who is also Australian’s renowned chef, took over
the restaurant and continued his father’s culinary legacy.

Pam’s third story revolved around the theme of student migration or migrating for the purpose
of education and learning. Enzo arrived in Australia in 1995 and likes Melbourne so much that he later
decided to pursue his studies in Melbourne. He stayed in Brunswick and studied double bass in a TAFE
College and then did Jazz Improvisation in Victoria University. Pam explained that during the period
of Enzo’s migration to Australia, many people came to Australia for work or study purposes, a period
described by Pam as the Globalisation period. Comparing Enzo’s migration with Carmella’s and
Pierto’s, Pam informed that Enzo had fewer difficulties. He didn’t have language issue and has no
problem going back to Italy once a year to visit his families and friends. This is vastly different from the lives of Carmella and Pierto who had no opportunities and means to go back to Italy.

For each of these stories, Pam placed strong emphasis on the aspects that student had to jot down on the activity sheet. She told her stories chronologically with details and plot and the students appeared to be deeply engaged. Each story was followed by question and answer session and students responded based on the four questions on the activity sheet.

Pam managed to get the short documentary started and the students watched the documentary for 15 minutes. This documentary portrayed the lives of immigrants who came to Australia, their motivations, hardships, perseverance and success. Then she concluded the session by summarizing the activities and let the students engaged in self-guided tour around the museum with an activity sheet that they needed to fill in.

5.4.2.2.2 Teaching

Pam Weisz structured her teaching effectively and her session was well-organised. At the beginning of the session, she described how her lesson was going to unfold and provided information to the students in relation to the focus of the lesson, the activity and the instruction for the activity. She was well prepared and her lesson was well-planned and this was evidenced through the activity sheet distributed to the students, her different stories and her suitcase and the documentary. All these activities connected to support the focus on immigration and identity.

5.4.2.2.3 Teaching Strategies

The most prominent teaching strategy used during the observed lesson was storytelling. Pam used stories to communicate the content that related very closely to immigration and identity of the immigrants before and after the migration. The students were engaged with her stories, her voice projection was appropriate with the right stresses and pauses. Even though all of her three migration stories focused on the topic of migration, she brought variation to the purpose, difficulties and how the migrations of three main characters impacted differently on their lives.
To support her storytelling, Pam utilised object-based teaching and this was demonstrated through the use of a suitcase to emphasize Carmella’s journey from Italy to Australia. Students ‘ooohhh’ and ‘aahhhh’ when Pam pulled out Carmella’s belongings from this suitcase. These items are authentic and they described Carmella’s culture explicitly. Pam provided rich information about Carmella’s objects every time she took an item out. For examples, the Italian and Greek wedding traditions that are associated with sugared almonds; and embroidered pieces of clothing that reflected sewing and embroidery skills of typical Southern Italian women. At the beginning of the session, she employed flash card activity to gauge students’ understanding of the topic of migration.

Her lesson was dominated by storytelling and this led Pam to engage mostly in one way interaction with the students. Even though these stories were followed by discussions, these discussions took place only for a few minutes. The students, however, were deeply engaged with the stories and managed to respond correctly to all the questions. However, the questions listed in the activity sheet were provided verbatim by Pam in her stories.

5.4.2.3 Summary of Teaching Observation

Pam’s lesson was based on negotiated content with the school teacher who requested that the lesson focused on immigration and identity. She framed her lesson with the use of story-telling and three real life stories based on migration to Australia were used. Based on the information from the stories, students were required to answer a series of questions on the activity sheet. Pam employed object-based learning to support her stories through the utilisation of a suitcase filled with authentic objects to illustrate Carmella’s journey from Italy to Australia, in one of her stories. The objects in the suitcase depicted Carmella’s distinctive cultural upbringing and the norm in her society.

5.5 ANALYSIS OF TEACHING OBSERVATION FOR SCIENCEWORKS

Teaching Observation was carried out involving a lesson by Peter Milan, the educator at the Scienceworks.
5.5.1 Museum Educator: Peter Milan

The following is the analysis of data gathered from the teaching observation checklist based on the teaching session carried out by Peter Milan, the educator at Scienceworks.

5.5.1.1 Details of the Lesson

The observed lesson carried out by Peter was a negotiated program on the topic of Robotic and Sensor. The duration of the lesson was 1 hour 30 minutes and students had learnt programming in school prior to the excursion. The purpose of the visit was to gain an understanding of the role of sensors in robotic movement particularly in relation to the effects of the presence and absence of sensor.

The lesson linked to a temporary exhibition called the Math Island. The exhibition revolved around the theme of strange measurements in mathematics. The Math Island, which was open to the public for the duration of six months, was set up by Questacon, a science-themed museum in Canberra and was organised by the Australia’s science museums. The Scienceworks Museum was one of the tour locations for the exhibition with standard exhibition set up across all exhibition venues. However, the Math Island at the Scienceworks was with an additional set up area for Experiment Zone given the spacious exhibition hall, and this was where the lesson on Robotic and Sensory implemented. The exhibition hall in which the Math Island was held allowed for an exhibition to be extended into a lesson, lecture or a workshop session. The Experiment Zone was equipped with tools and gadgets that allowed experiments which supported the lesson to be conducted.

5.5.1.3 The Lesson

The analysis on the lesson carried out focused on three main aspects: sequence of lesson, teaching and teaching strategies.

5.5.1.2.1 Arrival and Registration

Two teachers were involved in the excursion and upon arrival, students were directed by the teachers to the registration table before they were asked to leave their belongings at the visitor’s lockers. Before the program commenced, students and teachers were given a briefing by a museum staff about
the program that they were about to participate in. By the time the group arrived at the robotic section, the students appeared to be excited.

### 5.5.1.2.2 Sequence of Lesson

The students were seated on the floor facing the educator. However, this seemed appropriate because the activities that followed would require students to operate robots and monitor the robots’ movements.

Peter first welcomed the students and delivered a briefing about the lesson about to be undertaken, the direction and how the lesson would be organised. He also introduced a couple of museum staff who were going to assist him in the lesson. Peter explained the objectives of the lesson, before asking a series of questions that would provide him with information with regard to students’ prior knowledge about the topic and for him to gauge their ability level. This helped him in determining the suitable level of complexity for him to target his lesson.

The first part of the lesson focused on content delivery. Peter explained the roles of robots in human life, the functions of sensors in robots, how robots differ from human and the difference between human senses and robotic sensors. This was followed by the second part of the lesson which involved a demonstration of the different components in a robot as well as how to assemble these components into a robot. Lego robots were used because they were easy to program. Students were then assigned into groups of three to five members to carry out experiment. Each group was given components of a robot (e.g., Sensor, eyes, hands, tyres, etc.) for the team members to construct. Once the robots were fully constructed, they were then shown how to manoeuvre the robots and control the robots’ movements.

Peter and the museum staff had earlier set up the gallery for this activity. Small sized crystals were placed in various parts of the exhibition. The groups’ mission was to collect as much crystals as they could get through the use of the robot given. A group with the most number of crystals collected would be announced as the winner. The size of the crystal and the ability to manoeuvre the robot effectively posed a challenge to the groups. Peter continuously provided instructions and carried out facilitation processes throughout the activity. Groups needing help were required to raise their hands.
At the end of the activity, Peter congratulated all the students for their impressive skills in handling the robots and continued with the reflective process. Peter’s reflective session focused in getting the students to explain the roles of sensor and how the sensory tools in robots had helped them in completing their hunting activity. Peter also stressed on the difference between human senses and robotic sensors.

5.5.1.2.3 Teaching

Peter’s lesson appeared to be well executed although the lesson was structured with multi-components: a series of demonstrations in building up the lesson content, experiment by students and activities as well as hands-on assistance provided to the students. The student understanding was guided through step-by-step demonstration series on how to operate robots. Peter’s approach was procedural; student understanding was gradually built when he moved from the easiest task to the most complex task. Peter also gave various instructions and continuous assistance to the students in the group.

As much information was provided in between activities within the lesson, and the information mostly focused on the difference between human and robots. Many opportunities were provided for students to ask questions which the students used these opportunities optimally. Students’ excitement with the experiments, demonstrations and activities spurred them to ask a lot of questions. Each question was patiently entertained by Peter.

The students seemed to be highly engaged with the lesson. This is directly influenced by the nature of the lesson which quickly moved from one task to another with hands-on activities dominating the lesson. Having to operate the robots themselves, the students were occupied with observing and monitoring the robots’ movements. Turning the activity into a hunting game encouraged competitiveness in the task and increased motivation in learning.

The lesson was carried out whilst there were a lot of visitors at the Math Island. It was noisy with people talking and laughing, the sounds of footsteps and the children running and there was only a glass wall that divided the Experiment Zone and the Math Island. The glass wall limited the outside sounds but not entirely, and it enabled public visitors to observe lesson carried out. These distractions,
however, did not seem to alter student attention from Peter’s lesson. Peter managed to project his voice effectively and engaged the students in his activities.

5.5.1.2.4 Teaching Strategies

The lesson was dominated by demonstrations and application-based activities. Peter engaged in step-by-step demonstration of how to assemble the Lego components into a robot and demonstrated how to control the robot’s movement. This direct instruction gathered student attention and students were deeply engrossed with the activities. The game-based activity also instilled competitiveness in the students and made the lesson more fun and interesting.

Peter’s lesson was structured to provide more emphasis on student-centred characteristics. The explanation given at the beginning of his lesson addressed important points but it was brief. More information about robots, sensors and how they function was embedded within demonstrations and activities. Some aspects about the content were imparted while Peter facilitated between groups, they were crucial to group activities hence the students had to pay attention to the information.

The use of questioning as one of Peter’s instructional strategies was observable throughout the lesson. In the first phase of his lesson, questioning was employed in identifying students’ background knowledge with regard to robotic. A series of questions was also asked which provided information with regard to students’ ability levels. This allowed him to effectively target the content and lesson complexity to the level appropriate to the students.

5.5.1.4 Summary of Teaching Observation

Peter’s lesson was based on a negotiated content with a focus on robots and sensors. The lesson had a strong orientation for demonstrations and hands-on activities with minimal emphasis on content input. Students were shown, step-by-step, the process of assembling a robot as well as how to manoeuvre the robot’s movements, before they attempted to assemble and control the movement in group activities. Peter engaged in direct instruction, modelling and demonstration before he embarked on facilitating student learning. The use of questioning was apparent in his lesson and students were encouraged to ask questions throughout the lesson.
5.6 ANALYSIS OF TEACHING OBSERVATION AT THE NATIONAL GALLERY OF VICTORIA (NGV)

The following is the analysis of data gathered from the teaching observation checklists based on the teaching sessions carried out by three educators and an executive/educator at the National Gallery of Victoria.

5.6.1 Museum Educator I: Reese Webb

The following is the analysis of data based on a lesson conducted by Reese Webb, the museum educator for the NGV. Reese was also the head of the School Unit of NGV who carried out the education programs at the gallery. The lesson in which Reese Webb was observed was implemented at Federation Square, Melbourne.

5.6.1.1 Arrival and Registration

At the NGV Australia, the reception counter for the school visitors was the same counter for the public admission, unlike the NGV International which had two different counters for school and public visitors. Upon arrival, the registration staff informed Reese about the group and the students were instructed to leave their belongings at the Cloak Section, handled by the security team and the teacher proceeded to the registration counter to make the payment. Students and teacher then progressed to the foyer to meet Reese.

The first thing that Reese did was to welcome the teacher and all the students and then explained how the lesson was going to unfold. Students were then instructed to grab a portable chair each located near the foyer. They had to bring the chair with them whenever they moved from one gallery to another.

5.6.1.2 The Lesson

The following is the analysed data for Reese’s lesson.
5.6.1.2.1 Sequence of Lesson

For each artwork, Reese provided details such as its historical facts, the materials used, important features about the artwork for instance the colours, shapes and other visible elements. Explanations made were clear and she uses a lot of examples, metaphors and analogies to support her teaching. Students seem to be participative with interest. Discussions were triggered by questions and answers, and the pacing of the lesson was appropriate. At the end of the session, Reese summarised key areas and aspects learnt by the students.

5.6.1.2.1 Distraction

Because the lesson was carried out in a public gallery, there were also public visitors roaming around at the same time when the lesson was implemented. The gallery space was open in style and very spacious, it did not contain the noise and sound made by other visitors, they were easily heard and could potentially distract students’ focus towards the lesson. Reese’s voice, however, could still generally be heard.

5.6.1.3 Summary of Teaching Observation

Reese used questioning in her teaching to gauge students’ interest and attention. In describing a particular artwork, she would employ the use of examples, metaphors and analogies to aid student understanding. The students, however, were quite distracted from time to time as the lesson was carried out in a public space with public visitors also looking at similar artworks.

5.6.2 Museum Educator II: Emma Roberts

The second educator observed was Emma Roberts and the following is the analysed data from the lesson carried out by her.

The lesson was carried out at 10 o’clock in the morning on the second floor of the gallery. The focus was on Symbolism in Arts. The content and direction of the lesson were determined through earlier communications between Emma and the teacher based on the recommendation made by the Gallery’s Education Unit.
5.6.2.1 Arrival and Registration

There were two staff members on duty who managed the registration of the group. In making the payment, the teacher handed over a letter produced by the school and this acted as a guarantee of payment. No cash transaction was involved. While the teacher was at the front desk, the students were instructed by the security officer to leave their bag at the Cloak Section. The front desk staff then notified Emma on the students’ arrival and she came down to meet the group. Before she commenced with her lesson, students were divided into three groups. Students were provided with portable chairs and they had to carry these chairs when they move from one gallery to another throughout the session.

5.6.2.2 The Lesson

The following describes how Emma structured and delivered her lesson.

5.6.2.2.1 Sequence of Lesson

Emma first introduced herself to the teacher and the students. She proceeded by explaining the learning objectives and the purpose of the lesson.

5.6.2.2.2 Teaching

Emma had total control over the lesson and targeted her lesson appropriately to the students’ ability levels and the students were actively engaged on the tasks. This is evidenced through her provocative approach to ignite students’ thinking and students were eager to ask questions and had active discussions with her related to the artworks in question. Her questioning was reflective and her questions required critical thinking on the part of the students. Emma clarified necessary details of the artworks clearly with examples provided from the artworks. Her voice projection was appropriate, her lesson was well-planned and there was meaningful transition from one activity to the next. When focusing on a particular artwork, students were seated around the artwork within distance that allowed each student to have a good view of the artwork. Emma utilised the exhibition space fully during her lesson. She did not use any other teaching materials apart from the artworks.
5.6.2.3 Teaching Strategies

Several teaching strategies were noted during the observation. Emma employed questioning technique and the questions she posed were thought provoking. She moved from one question to another in a manner which scaffolded students’ thinking, this signifies the use of questioning within social constructivist theory.

Her teaching demonstrated a well-researched lesson plan. She provided many examples for the symbols that she introduced and these examples were closely tied to the artwork used.

5.6.2.3 Summary of Teaching Observation

Emma effectively targeted the complexity level of the lesson to student level of ability. She used a lot of thought-provoking questions, starting from simple and moved to more complex questions which assisted student thinking. Even though Emma did not utilize any teaching aids apart from the use of artworks, she employed numerous examples to describe the artworks. She also effectively organised seating arrangement in a way that benefit her voice projection and student attention.

5.6.3 Museum Educator III: Linda Rogers

The following is the description of the lesson carried out by Linda Rogers, a museum educator at the NGV. The lesson took place at the NVG Australia at 1.10pm and ended at 2.30pm. Students were booked in for Art and Philosophy.

5.6.3.1 Arrival and Registration

The accompanying teacher handled the registration for the students once they arrived. Students then left their bags and belongings at the Cloak Section while the teacher made the payment. They were then guided by the Security Official to the foyer to meet Linda.

5.6.3.2 The Lesson

The lesson observed was dominated by ‘look and tell’ activities where students moved from one artwork to another around the gallery. There were seven artworks selected and used in this lesson
and for each artwork students were provided with background knowledge pertaining to the history and the role of these artworks followed by a discussion based on a series of questions by Linda.

5.6.3.2.1 Sequence of Lesson

When Linda first met the students, she identified students that were dominant in the group and tried to get to know their names. She later used this as a strategy to control group behaviour later in her teaching. She also laid down several ground rules about her teaching to the students. Assigning students into small groups took longer than necessary. Students were not giving attention to the educator while the educator kept on instructing them. Students were directed to each pick up a stool and carry it on their back like a handbag.

Before commencing with the first activity, Linda warmed up the students by asking a few questions to get them to feel more comfortable. The first activity involved the largest artwork in NGV International situated in the Great Hall, one of the sections in NGV where the ceiling is filled with colourful stained glass. Each piece of the stained glass was cut by the artist himself. Once the students were underneath the stained glass, they were asked to lie on their backs and stared at the ceiling. Linda provided history about the artwork and used questioning in getting the students to provide responses that were directed towards predicting the effects of the artwork to the viewers.

The second activity was the Water Wall. Before asking questions about the Water Wall, Linda provided background knowledge about the history and the role of the Water Wall to the community. This background knowledge was important for students to form responses to Linda’s questions. She also provided appropriate vocabularies for students to use in their answers and these vocabularies were used as encouragement for students to participate.

In the third activity, the students sat around a sculpture and questioning was used for students to identify the origin of the artwork based on the elements and features of the artwork. Students were required to look at the sculpture for 30 seconds and then tell their partners the elements that they saw. Linda then asked the students to use the elements of the artworks to describe the culture and society at that time. She frequently encouraged students to elaborate and provide examples for their answers.
After about spending ten minutes in the third activity, students were asked to pick up their stools and belongings and moved upstairs. For the fourth activity, students were asked to stand around a sculpture. They were given time to admire the artwork and think of how the artwork could link to their lives. This was relevant to the artwork given the fact that the artwork represents a link between the present to past and future. Students were encouraged to form stories related to their past and the discussions that entailed involved students telling these stories.

The fifth activity was carried out one level down so the students had to move downstairs. With the artwork, students were asked to identify the elements in the artwork that indicated the era which the artwork represents. She utilised questions that encourage students to make the link.

The sixth activity involves a Japanese artwork that portrays Kabuki theatre. This artwork was produced in 1965 however uses a traditional Japanese woodblock print technique from around 1600s. Linda provided background knowledge that related to the history of the artwork, the descriptions of Kabuki theatre and the technique which the artwork was produced. And then students were required to use the elements in the artwork to predict what the artwork represents.

The last activity was a large pebble from a river in India. Students were asked a series of questions about the pebble and to imagine where the origin of the pebble, the kind of process that the pebble went through that brought it to its current shape, etc. To conclude her lesson, Linda asked the students which of the artworks in the session that they liked the most.

5.6.3.2.2 Teaching Strategies

Linda employed a number of teaching strategies to increase students’ understanding. The instruction was clear with language that was easy to understand and appropriate to the level of the students. She used a lot of body gestures in her teaching particularly in emphasizing meaning. She also maintained eye movements across group from time to time to garner students’ understanding and as a way to attract students’ attention. To assist students in their learning, she would cover the credit line from students’ views when introducing a particular artwork to encourage them to infer information from the artwork itself and students were asked to actively interact with the artwork.
The most noted strategy in this lesson was the use of questioning. However, before questions were asked, Linda provided background knowledge about each artwork and this information was relevant to the type of questions that would follow. In relation to classroom management, at the beginning of the session, Linda identified few dominant students in the group and got to know their names as a way to control their behaviours later in her teaching. Positive interaction was also noted. Students’ feedback was valued and appreciated through compliments given even when the responses provided by students were not accurate.

5.6.3.2.3 The Use of Objects and Exhibits

Generally, the artworks and paintings shown to the students were appropriate and were in line with the school curriculum.

5.6.3.2.4 Learning Environment

The gallery was conducive for learning and there was no distraction throughout the lesson. The lesson was carried out smoothly.

5.6.3.3 Summary of the Observation

Several aspects were noted at the end of the observation. There were smooth transitions between one activity and another and the lesson was carried out in a logical sequence. Even though some of the students were not paying attention at the beginning of the session, all students demonstrated on-task behaviours in all the activities. In addition, there was adequate support and assistance by other staff members at the beginning and at the end of the session to ensure that students and teachers had pleasant experience at the gallery. The students were provided with the necessary program materials, pamphlets were provided and Linda distributed handouts to the students during the learning activities. The teacher was a non-participant in the lesson.
5.7 SUMMARY OF THE CHAPTER

This chapter presents the analysis of teaching observation data carried out involving four MV museum educators and four NGV educators. The lessons delivered by the educators were represented by topic which connected strongly to the nature and focus of the collection of each museum. The duration of lesson delivery varied between one to two hours. The interaction between the educators and students in lessons carried out at the Melbourne Museum and Scienceworks was found to be learner-centred with task completion requiring students to engage in self-directed learning. At the Melbourne Museum, the activities revolved around the use of gadgets whilst at the Scienceworks, students were presented with multiple tasks, each task was inherently different in nature. The manner in which these tasks needed to be completed and the movement to the following task was fast-paced, this helped in ensuring students’ continuous engagement to the lesson. The lessons implemented at the Immigration Museum, however, were found to consist of the elements of teacher-centredness. The narrative approach adopted in communicating the migration and immigration history of Australia placed the educators at the centre of instruction. The lessons organised at the NGV centred on the use of artworks and the pedagogy employed by the NGV educators were found to characterize behaviourist elements. Questioning was found to be a common strategy employed in all lessons and was particularly dominant in the set induction section in the lessons. The strategy was utilised mainly in garnering students’ attention, strengthening their focus towards the lessons and as an informal assessment tool in measuring students’ level of understanding throughout the lessons. Peter Milan from the Scienceworks and Emma Roberts from the NGV employed questioning technique through the use of questions that were of increasing levels of complexity. In addition, Emma utilised questioning strategy in scaffolding student learning suggesting the adoption of social constructivist element in her instruction. The use of OBL was also profound in the observed lessons, however, how the objects were utilised and the kinds of objects used were different for each museum. MV educators used objects as instructional aids in supporting student learning and in the achievement of instructional objectives. For examples, gadgets and technology-related objects at the Melbourne Museum; objects which emphasized motor skills and the development of motor skills at the Scienceworks; and objects which supported narrative approach such as suitcase and photographs at the Immigration Museum. These objects were used as a part of teaching
as well as in activities designed for students. In contrast, the artworks were the focus of the lessons at the NGV. The NGV educators were found to structure their lessons solely on the use of artworks and no additional objects were used in their lessons.
CHAPTER SIX

DOCUMENT ANALYSIS

6.1 INTRODUCTION

The chapter details the analysis carried out on documents relevant to the administrative aspects of museums and galleries particularly in the management of an Education Unit. The data derived from the document analysis provides a comprehensive view about the administrative aspects behind the implementation of education programs. It also complements the data derived from semi-structured interview with a strong focus on the design, development and implementation of education programs; and teaching observation which emphasizes on the delivery of the developed programs. The document analysis, on the other hand, provides information with regard to the organisational vision, values and strategic direction that were not addressed by the interview questions.

6.2 DOCUMENTS AND THEMATIC ANALYSIS

The selection of documents was based on the official documents produced by the museums and gallery involved, and the content was directed towards describing the management and administrative aspects of these institutions. Forty-six documents were gathered, 18 of which were analysed in relation to Museum Victoria and the remaining 28 explained the organisational aspects of the National Gallery of Victoria (NGV). (Please refer to appendix 7 and 8 for a list of analysed documents.)

The documents selected were the reporting documents of both organisations. The Museum’s Board of Victoria Annual Reports for the financial year of 1999/2000 to 2015/2016 were examined including the strategic plan document (Museum Board of Victoria, 2013) and an article by Greene (2006). The article by Greene, the Chief Executive Officer for MV since 2002, discussed the restructuring process carried out by MV as well as the shift from a hierarchical organisational structure to a networked operating model due to the pressure of budget cuts, decreased number of visitors and a deficit carried over from previous years. For the NGV, 15 annual reports were analysed, ranging from the reporting for the financial year of 2001/2002 to the financial year of 2015/2016. An article by Rentschler and Geursen (2003) was also included in the analysis. The article discussed entrepreneurial
leaderships in Australian art galleries particularly in times of uncertainty of continuous funding by the governing bodies, in which NGV leaderships were addressed lengthily.

The annual reports detailed the organisational aspects of the museum organisation and comprehensively reported the operations as well as the programs carried out for a particular financial year. The strategic planning document laid out museum planning for a five-year duration and this provided valuable information in relation to the direction that MV was undertaking, and the focus and priorities given on its public programs, generally, and the education programs, specifically. These documents, collectively, provided a comprehensive overview of MV and NGV as an organisation, their roles, functions and commitment towards education programs and cultivation of the culture of knowledge and learning.

The analysis did not involve all documents for some themes. The analysis of the education programs of organisations was carried out on the annual report documents commencing from the financial reporting period of 2010/2011 to the most recent 2015/2016. This was to identify patterns in the programs offered by MV and NGV. However, the analysis of corporate information such as the vision, mission, policies and organisational structure of both MV and NGV was employed on all documents listed. The selection of the documents began with the reporting period of 1999/2000 for MV given the major restructuring the institution had undertaken in 2002. The analysis of the reports two years prior to the restructuring endeavours would enable the identification of the changes adopted by the organisation. The analysis of the NGV’s corporate information involved much earlier reporting documents, starting with its annual report from the financial year of 1989/1990 to the most recent in 2015/2016. The restructuring work that took place in Australian government agencies in the early 1980s affected NGV as a state gallery, hence the analysis of NGV’s annual documents spanning 28 years was carried out.

The documents were analysed thematically. Six major themes guided the analysis process of the selected documents. The selection of themes was based on the research questions as well as elements of the 6P Model of museum learning by Kelly (2007). The themes and sub-themes which framed the process of document analysis are presented in table 6.1 below.
<table>
<thead>
<tr>
<th>Main Themes</th>
<th>Sub-Themes</th>
</tr>
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<tbody>
<tr>
<td>Corporate Governance</td>
<td>Governing Body</td>
</tr>
<tr>
<td>Organisational Strategies</td>
<td>Vision</td>
</tr>
<tr>
<td></td>
<td>Mission</td>
</tr>
<tr>
<td>Organisational Culture</td>
<td>Values</td>
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<tr>
<td>Organisational Structure</td>
<td>-</td>
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<tr>
<td>Strategic Direction</td>
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<tr>
<td>Organisational Roles</td>
<td>Strategic Planning</td>
</tr>
<tr>
<td>And Functions</td>
<td>Educative Function</td>
</tr>
</tbody>
</table>

Table 6.1: Themes and sub-themes for document analysis

6.3 DOCUMENT ANALYSIS FOR MUSEUM VICTORIA (MV)

The document analysis presented in this chapter was carried out based on aspects related to corporate governance, organisational culture and strategies as well as the types of education-based programs implemented by MV.

6.3.1 Corporate Governance

MV was established in 1854, initially operated as the National Museum of Victoria and through the proclamation of the Museums Act 1983 (Vic.), the establishment was amalgamated with the Industrial and Technological Museum of Victoria (which was formed in 1870) to form Museum Victoria (MV). MV is governed by the Museum’s Board of Victoria which reports directly to the Victoria State Government through the Minister of Creative Industries (Museum Board of Victoria, 2016).

MV, known as Australasia’s largest public museum organisation, is responsible for six properties: three of which are museums, a world heritage building and two storage facilities. MV owns a total of more than 17 million objects maintained by its curators. The Melbourne Museum, which moved to its current site in October 2000, is the earliest museum in Melbourne. Located in the Carlton Garden adjacent to the Royal Exhibition Building, the displays of its exhibits focus on the Bunjilaka Aboriginal Cultural Centre, Australian social history, the cultures of Indigenous people, the
environment, human mind and body as well as science and technology. The museum also operates the IMAX theatre.

First opened to public in November 1998, the Immigration Museum is located in the former State of Victoria’s Custom House on Flinders Street, Melbourne. Since 1850, Flinders Street was a typical path for immigrants to Victoria including the route for all exported and imported goods. The museum stored permanent and temporary exhibitions such as the Discovery Centre, Immigration Stories and Timeline, Leaving Home, Our Odyssey and offered daily staff-led tours and self-guided tours.

Scienceworks (opened in March 1992) is a science and technology-based museum that demonstrates popular science culture, modern science and technology discovered through interactive and hands-on experience. The museum stores science-based permanent and temporary exhibitions (changed every few months) and its main attractions include the Melbourne Planetarium and the Lightning Room. The Melbourne Planetarium showcases presenter-led demonstration and short movie projected onto the dome-shaped ceiling. The Lightning Room, on the other hand, features a 30-minute presenter-led show which demonstrated the effect of lightning on various structures.

The Royal Exhibition Building is located adjacent to the Melbourne Museum in the Carlton Garden, Melbourne, and was built in 1880. With its opulent interior, spacious galleries and tall dome, the building was announced as the UNESCO World Heritage site in July 2004 and is the first building in Australia to be awarded. The Royal Exhibition Building is also one of the last remaining 19th-century exhibition buildings in the world.

MV also owns the Moreland Annexe, an off-site storage facility for the MV’s collections in addition to the on-site storage at the Melbourne Museum and Scienceworks. The storage facility started operation in October 1996 and stores the largest of MV collection items. The Moreland Annexe does open its door from time to time (by invitation only) for staff-led tour around the facility.

The Simcock Avenue Store began its operation as a non-collection store for MV in November 2007. Located adjacent to Scienceworks, the land in which the store is on was purchased by the Victorian Government for Collections Victoria and provides a secure storage for state’s cultural assets (Museum Board of Victoria, 2011).
The remaining discussion in this chapter focuses on the three participating museums in the study: Melbourne Museum, Immigration Museum and Scienceworks, which formed the basis for the analysis. Hence, the following table displays the number of visitations received by each of these three museums for its five consecutive financial reporting periods since 2011. On average, the museums received 1.8 million visitors annually. Though the number of visitors indicated a decline in 2012/2013, visit for the following year was recorded as the highest.

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<tr>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Immigration Museum</td>
<td>116,024</td>
<td>122,662</td>
<td>123,877</td>
<td>132,883</td>
<td>143,054</td>
</tr>
<tr>
<td>Scienceworks</td>
<td>502,109</td>
<td>486,938</td>
<td>474,823</td>
<td>448,210</td>
<td>482,305</td>
</tr>
<tr>
<td>Melbourne Museum</td>
<td>991,132</td>
<td>828,379</td>
<td>955,838</td>
<td>802,949</td>
<td>1,099,546</td>
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<td>IMAX</td>
<td>258,271</td>
<td>252,446</td>
<td>279,758</td>
<td>272,621</td>
<td>241,943</td>
</tr>
<tr>
<td>Total Ticketed Visitation</td>
<td>1,867,536</td>
<td>1,690,425</td>
<td>1,834,296</td>
<td>1,656,663</td>
<td>1,966,848</td>
</tr>
</tbody>
</table>

Table 6.2: Number of visitors for MV museums annually
(Museums Board of Victoria, 2016, p. 5)

6.3.2 Organisational Vision, Values and Strategic Directions

The five-year strategic planning document for 2013-2018 indicated the MV vision as ‘Leading museums that delight, inspire, connect and enrich’ (Museum Board of Victoria, 2016, p. 6). The organisation has established a set of values or norms that represented the organisation. The eight values identified were leadership, respect, reconciliation, human rights, responsiveness, integrity, impartiality and accountability.

Under its five-year strategic planning, MV had established six strategic directions to be undertaken: deepening connections; investing in knowledge, expertise and collections; digital transformation; organisational resilience and building Victoria’s Cultural Capital. For each, specific tasks and roles had been identified to achieve each of the stated strategic directions.
6.3.3 The Organisational Structure of Museum Victoria

The review of literature and the analysis of documents pertaining to MV structure indicated that MV embraced a network-based organisational design in its financial year of 2002/2003, a departure from a hierarchical organisational structure. The financial challenge was one of the main reasons for Museum Victoria to adopt the network-based organisational design. The declining number of visitors in a newly located Melbourne Museum and a projected deficit of $6 million between its four institutions (Royal Exhibition Building, Melbourne Museum, Scienceworks and the Immigration Museum) called for the restructuring of the organisation Greene (2006). In relation to the declining number of visitors, ticket prices experienced cuts as the Melbourne Museum attempted to increase its visitor base from 450,000 to 700,000 visitors a year (Robin Usher, 2003). In boosting crowd presence, entry for children and pensioners was free and adults were only charged $6 per entry, in which to many families this was considered cheaper than the cost of going to cinema or catching a footy game. The move was expected to generate visitors from about 840,000 to 1.1 million to all the three museum establishments. MV hoped that such a measure would attract new visitors and increase return visits.

Facing the possibility of not having enough in the payroll to ensure survival of the employees until end of the year, Patrick Greene, the then chief executive officer for MV, implemented a three-step process. Rather than laying off personnel at low level posts, the number of the executive management team was reduced from nine to five people. A series of reviews by teams of staff for recommendations of improvement over a period of six weeks immediately followed.

The final stage to the process involved the realignment of all the four establishments into a single museum organisation with stronger capacity to achieve full potential. The new design saw a leadership team of 26 senior managers including the five members of the executive management team. Greene (2006) believed that the restructuring process strengthened the organisation’s vision and avoided further redundancies. He added that such a design could potentially reduce bureaucracy and promote cross-departmental collaboration, as well as pushing all staff with a single mission and vision.
A networked organisation calls for independent people and groups act as independent nodes, link across boundaries, to work together for a common purpose; with multiple leaders, lots of voluntary links and interacting levels (Lipnack & Stamps, 1994). Greene (2006) identified several essential steps viewed necessary for full functioning networked museums and they include abolishment of unproductive committee, establishment of cross-departmental teams, development of the strategic plan with committed staff, enhanced skills training, leadership training for managers, centralised recruitment for staff, etc. The employment of a networked structure produces an organisation chart which represents staff roles and functions as within clusters.

According to Greene (2006), a networked organisation empowered the employees and provided flexibility for them to split their work between the different establishments within the organisation. This resulted in enriched knowledge as the staff gained more information about other establishments within the MV. They were also able to provide information to visitors about any aspects of MV. The managers, likewise, served more than one establishment and were able to fill in for other managers in other division for such circumstances such as on leave or work trip. Operating under networked organisation requires
continuous reinforcement and review for improvement should be continuous to ensure high morale and productivity.

Figure 6.2: Museum Victoria (MV) organisation chart (Museums Board of Victoria, 2003, p. 49)

Following the organisational restructuring at MV, its first networked organisational structure was included in its annual report for the financial year of 2002/2003, presented below. Prior to this financial year, the institution was relying on a structure that was hierarchical.

The analysis of both organisational structures (hierarchical and networked) indicated the extensive nature of the restructuring process carried out by the MV. This is further supported by Greene’s (2006) account of how the process entailed and the importance of making sure that the employee morale was high throughout the process.

The networked-design shifted the authority for each MV organisation, which was previously placed under a director for each organisation (for example, the Director of Scienceworks Museum was responsible only for operations at the Scienceworks Museum), into a single leadership of one director who oversaw the related operations and activities of all MV organisations. Under the new design, the
Director for Museum Operations was accountable for activities pertaining to museum operations for all its institutions: Melbourne Museum, Immigration Museum, Scienceworks Museum and Royal Exhibition Building. The streamlined network of authority provided the top management with a comprehensive view of each aspect of operation carried out at all its establishments. Green (2006) indicated that the restructuring process embarked by MV was hardly conventional. Instead of following the common practice of organisational restructuring by laying off jobs at low level positions, MV’s restructuring involved making three top managerial posts obsolete.

Before the restructuring process was undertaken, the museums’ operations were under the responsibility and accountability of seven directors: with three directors, responsible for each of MV’s museums, in addition to Museum Development; Programs, Research and Collections; and Outreach Technology, Information and Multimedia. These positions were amended into four key divisions under the networked design: Museum Operations; Collections, Research and Exhibitions; Information Multimedia and Technology; and Corporate Services.
Figure 6.3: Museum Victoria (MV) organisation structure as at 30 June 2002 
(Museum Board of Victoria, 2002, p. 62)

The MV’s networked organisational structure was amended to accommodate the changes that took place in the organisation. These changes involved a number of aspects, such as the addition of key areas for existing division (for example the role of the Information, Multimedia and Technology division increased through the addition of Technical Operations) (Museum Board of Victoria, 2004); as well as the integration of two key areas into one, such as the changes in several key operation areas reported in its annual document in 2007 (Museum Board of Victoria, 2007, 2008).

The establishment implemented minor restructure process in 2012 which involved the operation of new division Marketing, Partnerships and Communication, and the Museum Operations division was renamed Public Engagement. Education and Community Programs was one of the key areas under the Public Engagement division (Museum Board of Victoria, 2012). The current organisational structure
for the Museum’s Board of Victoria is presented on the following page. MV maintained its four divisions after the minor restructure in 2012: Public Engagement; Collections, Research and Exhibitions; Corporate Services; and Communications and Partnerships.

![Diagram of Museum Victoria (MV) organisation structure as at 30 June 2016](Museum Board of Victoria, 2016, p. 18)

Figure 6.4: Museum Victoria (MV) organisation structure as at 30 June 2016

6.3.4 The Roles and Functions of Museums Board of Victoria

MV is governed by the Museum’s Board of Victoria which reported directly to the Victorian State Government through the Minister for Creative Industries. The Museum’s Board of Victoria is a statutory body established under the Museums Act 1983 (Vic.). The Board is responsible in maintaining the standards of MV with the following functions:
i. to control, manage, operate, promote, develop and maintain Museum Victoria

ii. to control, manage, operate, promote, develop and maintain the exhibition land as a place for holding public exhibitions and for the assembly, education, instruction, entertainment and recreation of the public

iii. to develop and maintain the State Collections of natural sciences, Indigenous cultures, social history and science and technology

iv. to exhibit material from those collections for the purposes of education and entertainment

v. to promote the use of those collections for scientific research

vi. to promote the use of Museum Victoria’s resources for education in Victoria

vii. to research, present and promote issues of public relevance and benefit

viii. to act as a repository for specimens upon which scientific studies have been made or which may have special cultural or historical significance

ix. to provide leadership to museums in Victoria to advise the Victorian Minister for Creative Industries on matters relating to museums and the coordination of museum services in Victoria

(Museum Board of Victoria, 2016, p. 16)

6.3.5 The Roles and Functions of Museum Victoria

Museum Victoria, functions as the State Museum for Victoria, and is responsible for the safekeeping and repository of the State collection. MV was also responsible in carrying out research and in the offering of cultural and science programs to the Victorians, specifically, and to the visitors from other states of Australia and overseas, generally. The research undertaken explored historical and contemporary issues in the field of history, science, technology and indigenous cultures. Studies carried out were based on the 17 million objects at the museums and maintained by curators (Museum Board of Victoria, 2013).

6.3.5.1 Strategic Planning of Museum Victoria

In its strategic planning document, Museum Victoria outlined commitments towards education and dissemination of knowledge in the strategic planning documents as well as in the organisation’s
annual reports. Commitment towards education is stated explicitly and implicitly in its five strategic directions for 2013-2018.

The first stated strategic direction Deepening Connections (Museum Board of Victoria, 2013, p. 4) aims to enhance connections between museums and visitors and acknowledge the changing demographics, interest and the way the visitors communicate. The strategic direction states four outcomes achievable within the five-year of strategic planning duration with emphasis given to education and education programs. The initiatives outlined in achieving the second outcome, which focuses on co-creation of physical and digital experiences with the museums, promote the design and development of programs, exhibitions, online and collection projects that are characterized by flexible, integrated, multi-channel and in-depth content and experiences. One such example is the collaboration with the Princes Hill Primary School which saw a project based on learning enquiry implemented for year three and four students. The activities included the creation of pop-up museum in the Melbourne Museum and the installation of a museum at the school and was open to the public for two weeks (Museum Board of Victoria, 2016).

The third outcome reflects the pursuit for life-long learning and continuous improvement. MV aims to position itself as a source of information on contemporary issues from the point of view of the community. As such, the organisation is ready to establish collaborative partnerships which develop and grow museums’ knowledge and expertise; and establishing new communications systems and approaches that would help raise the profile of museum experts. The fourth outcome stresses the use of museum experiences and resources for education purposes. The initiatives identified in fulfilling these outcomes include the provision for inspiring learning experiences for both students and teachers. These include partnership with tertiary institutions and linkage with institutions and programs that support adult education; contribution and active engagement with the content of national curriculum in providing inspiring experiences for school students; provision of professional development programs for teachers that assist in building profile of education resources at the museums; and continuous improvements of long-term exhibitions that support the facilitation of learning experiences effective for 21st century delivery and relevant education content (Museum Board of Victoria, 2013).
The second strategic direction to be achieved within a five-year frame (2013-2018) is *Investing in Knowledge, Expertise and Collections* (Museum Board of Victoria, 2013, p. 6). This strategic direction prepares MV with the enquiry process for the 21st century and steps taken to ensure the museums stay relevant even with the changing times and become relevant resource for knowledge. MV has outlined three measures to achieve this strategic direction and one of the measures is directly linked to the generation of new knowledge. MV aims to embark in projects that are collaborative and interdisciplinary in nature which are enabler for generating new knowledge. These include seeking new partnerships and opportunities that could potentially extend existing areas of knowledge; devoting in research projects focusing on the breadth of museums’ collection and knowledge; promoting expertise and potential in contemporary museum leadership; and developing cross-departmental projects that enhance museum expertise. The third measure, is that all staff know and promote the significance of the collection (Museum Board of Victoria, 2013, p. 7) reflects the emphasis for life-long learning. The museums are encouraged to widen staff knowledge about its collections through activities such as collection days, talks and new acquisition presentations.

In addition to its strategic planning, MV had also identified several key areas as future priorities. The aspects of knowledge and education that would be given greater attention included an increased focus on the national curriculum content in providing learning experiences in all MV institutions; and continuous renewal of its long-term exhibitions in the better provision of learning experiences and education content within the 21st-century learning framework (Museum Board of Victoria, 2016).

### 6.3.5.2 The Educative Functions of Museum Victoria

This section details specific programs, activities and efforts undertaken by MV ensuring the effectiveness and success of their education-related programs as well as programs with education and knowledge elements carried out to achieve the organisation’s short-term and long-term goals. The implementation of education-based programs and activities were under the responsibility of the Education and Community Programs Department which reported directly to the Public Engagement division (Museum Board of Victoria, 2016). In addition to the Education and Community Programs Department, the division also managed seven other departments (see Figure 6.4). The following figure
presents the number of students participating in education programs organised at the MV museums from 2006/2007 to 2015/2016.

Figure 6.5: Students Participating in Education Programs at MV (Museum Board of Victoria, 2016)

The analysis of annual reports and strategic planning documents of the Museum’s Board of Victoria in relation to the organisation’s commitment towards knowledge and education indicated four major audiences that defined and shaped its programs: public programs, education programs, teachers’ professional development programs, programs for children and families, tertiary sector and an increasing role of online platform and database in providing learning experience. Collaborations and partnerships were found to be an essential part to most of the education programs implemented at the MV museums.

6.3.5.2.1 Public Programs

MV embarked on continuous efforts in tailoring its programs to provide museum experiences that were unique to each museum under its organisation. This include providing setting that allowed visitors to easily customize the visit to their museum experience, enabled visitors to co-create physical and digital experiences with the museum, positioned its museums as a source of information in relation
to contemporary issues and promoted the museums’ experience and resource use for education purpose (Museum Board of Victoria, 2016).

There were various types of programs organized for public visitors designed to fulfill a wide range of visitors’ demographics. Permanent exhibitions were continuously maintained and funding from corporate and private agencies enabled for these exhibitions in the galleries to be maintained and renewed. In the Melbourne Museum, for example, among the permanent exhibitions were the *Wild: Amazing Animals in a Changing World; Forest Secrets; Koori Voices, Dinosaur Walk* and the *Melbourne Story*. In the Immigration Museum, some of the permanent exhibitions were the *Leaving Home Exhibition, Immigrant Stories and Timeline, Journeys of a Lifetime* and the *Customs Gallery*. *Think Ahead, Nitty Gritty Super City* and *Sportsworks* were the permanent exhibitions at the Scienceworks Museum.

Short term exhibitions enabled the museums to showcase objects that represented a particular theme, focus and issue. In 2014 and 2015, the Melbourne Museum carried out two exhibitions with war as its theme. *WW1: Love and Sorrow* moving exhibition was organized in commemorating the 100-year anniversary of World War 1. This included showcasing objects and photographs that connected audiences to the personal stories and experiences of those who lived and experienced the war. The *WW1 Centenary Exhibition* featured 350 significant objects from the World War One collection of the Imperial War Museums in London. The exhibition at the Melbourne Museum was one of the locations for the world tour of the Imperial War Museums in London and it featured conflicts and scenes of enormous scale (Museum Board of Victoria, 2016). One of the Melbourne Museums most popular exhibitions, the *Tutankhamun and the Golden Age of the Pharaohs* was closed in December 2011 with 796,277 visitors, following a six-month exhibition. Wallace and Gromit’s *World of Invention*, opened for public in May 2012 at the Scienceworks Museum offered visitors, particularly children, an exciting exploration through the world of inventions (Museum Board of Victoria, 2012).

Festivals were one of many activities hosted by MV. The *Scottish Fling Festival* was carried out in March 2016 by the Immigration Museum, and the partnership with the Victorian Scottish Ancestry Group provided the attendees with the opportunities to learn about their family history. MV also took part in major festivals and programs carried out by other institutions. One such collaboration
was Melbourne’s White Night, a large-scale event organised by the State Government at various venues and attractions around the City of Melbourne. As part of the event’s showcase, the Melbourne Museum featured Music for a World Stage with continuous high-energy performance from dusk to dawn.

In addition to public programs which were made available to all, MV also organised programs for specific members of its audience. For example, the MV Members which consisted of 16,368 members representing 52,471 individuals. The programs developed catered for member-only experiences such as the Back-of-House tours for adults and family groups and the behind-the-scenes tours carried out as part of the Melbourne Rare Book Week in 2014 (Museums Board of Victoria, 2015).

6.3.5.2.2 Children and Families

Programs and activities carried out for children and family’s visitors were often with the aim of instilling life-long learning in the children. MV had participated in early learning research partnerships in examining ways to increase involvement of children and families in life-long learning. The national partnerships with the National Maritime Museum, the Powerhouse Museum and Macquarie University paved the way for greater outcomes in the investigation of the learning experiences in preschool children and their families upon their visit to the museums (Museum Board of Victoria, 2016).

Some of the programs and activities developed with children in mind were the Children’s Week which was celebrated in collaboration with Playgroup Victoria and the Department of Education and Training (Museums Board of Victoria Annual Report 2015-2016); Little Kids’ Day In held at the Scienceworks Museum with activities tailored for children under the age of six years (Museums Board of Victoria, 2014); Tiddalik the Thirsty Frog, a summer school-holiday program based on an Aboriginal classic which included a free-theatre performance for families (Museum Board of Victoria, 2012).

In conjunction with the Nitty Gritty Super City exhibition at Scienceworks, an iPad program was developed for kindergarten students by touching the screen device to engage in games related to the exhibition.
6.3.5.2.3 School Students

The education programs carried out by MV are represented by varied types and purposes. Specifically designed for school audience, MV offered curriculum-linked programs on-site, online and outreach.

A wide range programs focusing on science and technology-related subjects were developed and implemented by MV. In 2013, comprehensive curriculum-supported program was developed to challenge students of lower secondary in science learning. With a focus on evolution and geology, students engaged in the use of digital tools in carrying out systematic investigation in relation to the science exhibitions while working with hands-on collections (Museums Board of Victoria, 2013). *Hominoid Evolution* program for VCE students demonstrated a range of scientific enquiry activities in biology, which allowed students to record their responses and email to school for review and revision. A learning kit for mathematics was introduced in 2011 for students and teachers which included sensors, data loggers and teacher resources.

The analysis of annual documents showed MV’s involvement in offering a week-long school placement program for secondary school students on a yearly basis to be carried out in MV museums. This information was first reported in its annual report for the financial year 2011/2012 and the annual reports for 2012/2013 up to 2015/2016 indicated MV’s continuous commitment towards the program and the institution’s future plan for continuous engagement.

The school placement program involved students selecting their interest area based on the collections available at the MV museums before they worked with the staff members to gain better understanding and insights into their selected subject. The placement program for the financial year of 2011 and 2012 involved 26 Indigenous students assigned to either Scienceworks or Melbourne Museum. Such involvement provided learning experience that could not be obtained in school.

Programs were also developed to engage students in culturally rich content and activities. MV’s commitment in building Victoria as a cultural capital was first articulated in its annual report for the financial year 2013/2014 as one of the organisation’s strategic direction. These programs aimed to increase cultural and intercultural understanding. For examples, the Immigration Museum collaborated with the Melbourne Writers’ Festival for the organisation of a series of workshops which represented
the themes of exhibitions (Museum Board of Victoria, 2013/2014). The *Talking Difference in Schools* which promoted dialogues on racial discrimination was developed and implemented for Victorian schools in regional areas through workshops and studio placements (Museum Board of Victoria, 2014/2015). In 2015, MV embarked on a new outreach program, *Sharing Stories*, designed for primary school students with a focus on migration history (Museum Board of Victoria, 2015/2016).

Intensive programs to improve mastery of learning in a number of areas were offered from time to time. For example, a collaboration with Deakin University and The University of Melbourne allowed students to examine programs offered at the museums (Museum Board of Victoria, 2016).

6.3.5.2.4 Tertiary Sector

Collaboration with higher learning institutions led to the implementation of programs with strong education base. The collaboration with The University of Melbourne, for instance, had demonstrated the development of various programs that embedded the culture of learning and generated knowledge and learning experiences. Through the collaboration, students from The University of Melbourne were given the opportunity to embark on research projects at The Melbourne Museum as part of their Master of Education program. The collaboration also promoted interdisciplinary research. Five pilot projects were carried out between The University of Melbourne and MV and two scholarships, the Strategic Australian Postgraduate Award, at doctoral degree levels were offered in encouraging research projects with cross traditional disciplinary boundaries.

The collaboration with Monash University also resulted in two scholarship for postgraduate research students, two Honours scholarships and two doctoral degree scholarships offered and the grants were awarded for research focusing on MV’s humanities and sciences collection, with co-supervision by either the academic staff at the Monash University or MV staff (Museums Board of Victoria, 2015). The collaboration with Monash University also involved the development of an online learning resource targeted for middle-year students. *Making History* consisted of short videos developed to educate the students in carrying out historical research and enquiry. Online conferences with students and teachers in disseminating the expertise was also part of the resources developed (Museum Board of Victoria, 2012).
6.3.5.2.5 Professional Development Programs for Teachers

Professional development programs for teachers were offered on-site and online. From its annual report for the financial year of 2015 to 2016, MV was broadening its focus on teacher development with programs designed covering breadth of subject areas.

In the improvement of the teaching of science and mathematics, a number of programs for science and mathematics teachers were offered. One was the science, technology, engineering and mathematics (STEM)-based program carried out in conjunction with the Primary Maths and Science Specialists Initiative by the Department of Education and Training for teachers from disadvantaged schools. MV’s partnerships with Deakin University and The University of Melbourne allowed science teachers to examine museum programs and pedagogy and provided them with the opportunities to have better understanding of how science-based programs were developed by exposure of behind the scenes at the museums.

6.3.5.2.6 Digital and Information Technology

In 2006, MV launched its electronic museum system which provided access to its 16 million item collections on a single database. This system provided a much more organised online system which was previously stored in 50 separate collection databases (Museums Board of Victoria, 2006). The effort to digitise, catalogue and transcribe field diaries of curators and collection managers began in 2016.

In March 2016, the Immigration Museum’s Multilingual Museum Tour App was launched by the Minister for Multicultural Affairs featuring an audio tour in six languages (Arabic, English, French, Italian, Japanese and Mandarin), hence providing greater access to the multicultural communities of Melbourne.

In relation to education, the Digital Education Program made it possible for the MV to connect with students and educators via online platforms. It also enabled programs for primary and secondary schools in the State to be live-streamed directly (Museum Board of Victoria, 2016). Learning Lab was launched in the early of 2013 providing primary and secondary school students and teachers an interactive website with a content focus on science and history. The website was developed through a
partnership with the Education Services Australia in support of the Australian Curriculum (Museums Board of Victoria, 2013).

6.3.5.2.7 Collaboration and Partnerships

Partnerships and collaborations with educational institutions surpassed the goal of providing high quality education programs but cultivating research endeavours aimed for community improvement and instilling the culture of knowledge for the betterment of the community. MV had a culture of partnerships and collaborations with the institutions of higher learning. The collaborative research partnership with Monash University, for example, enabled two postgraduate scholarship schemes to be offered; whereas the collaboration with The University of Melbourne for the McCoy project enhanced the work for interdisciplinary research carried out by the museums. Partnership with the Australian National University strengthened the museums’ commitment towards Indigenous People. A two-day symposium with a focus on People, Images and Things provided a platform for curators, anthropologists and experts to discuss the importance and setting direction for research in the area of Australian Indigenous cultural heritage. Strong ties with Swinburne University allowed for Design Your Future to be organised which provided opportunity for the participants to engage in new transport design workshop, partnership with the Department of Education and Training resulted in the first Mini Maker Faire with workshops and a drop-in-design space for students (Museum Board of Victoria, 2016).

6.4 DOCUMENT ANALYSIS FOR THE NATIONAL GALLERY OF VICTORIA (NGV)

The following sections focuses on the analysis carried out on documents related to the managerial aspects and the implementation of education programs at the National Gallery of Victoria (NGV).

6.4.1 Corporate Governance

The National Gallery of Victoria (NGV) was established in 1861 and the oldest public gallery in Australia. The National Gallery of Victoria Act 1966 placed the organisation under a Council of
Trustees which reports directly to the Minister for Creative Industries. Within the organisational structure, the NGV is placed under the Department of Economic Development, Jobs, Transport and Resources (Museums Board of Victoria, 2015).

In July 1997, the Victorian State Government announced the development of a second campus for the NGV, known as the Museum of Australian Art at Federation Square. The project, according to Rentschler and Geursen (2003), was one of the strategic measures undertaken by the Victorian State Government to position Melbourne as a leading cultural hub through a showcase of its gallery and a step in acknowledging the achievement of Australian artists. The second site opened in 2002 and housed 20,000 Australian artworks with the prominent display of Aboriginal and Torres Strait Islander collections. The Victorian State Government believed that it is ‘the world’s most comprehensive display of Australian art’ (p. 8). The main NGV site on St. Kilda Road was reopened in 2003 after a $136 million renovation (Rentschler & Geursen, 2003). Both sites were reported to store approximately 70,000 artworks representing Indigenous and international art, design and architecture in all media on the history and development of Australia and Australians (Council of Trustees of the National Gallery of Victoria Australia, 2015).

6.4.2 Organisational Vision, Mission, Goals and Strategies

The NGV operated with a mission aimed ‘To collect, conserve, develop and promote the state’s works of art and bring art to the people of Victoria. Building on this 155-year history, today the NGV is dynamic, vibrant and an essential community asset that contributes to the cultural, educational, social and economic wellbeing of Victorians’ (Council of Trustees of the National Gallery of Victoria Australia, 2015, p. 11). The mission was introduced since the financial year of 2014/2015 and was more comprehensive as compared to the previous mission of the organisation, stated “To illuminate life by collecting, conserving and presenting great art” (Council of Trustees of the National Gallery of Victoria Australia, 2015, 2016).

The NGV’s organisational vision ‘Creating an inspiring future: enriching our understanding of art and life’(Council of Trustees of the National Gallery of Victoria Australia, 2015, p. 11). The vision was introduced in the organisation’s annual report for the financial year of 2014/2015. The new vision
embraced, not only the goal that the gallery attempted to achieve, it also described the characteristics of the process within which the goal can be accomplished. The previous vision for the gallery stated, “As Victoria’s cultural flagship and home to Australia’s finest art collection, the NGV is recognized as one of the world’s leading art museum” (Council of Trustees of the National Gallery of Victoria Australia, 2013, p. 11).

The NGV’s Annual Report for 2014-2015 stated five aspects of its strategic framework and, under each, strategies for achieving the working within this framework. The framework was “Bringing art works to life; Connecting audiences; Realising our potential; Building for the future and Sharing our vision” (p. 11). Whilst all of these strategic frameworks implied NGV’s commitments for knowledge and education, one goal stated this explicitly. For Connecting audiences, the strategies identified for achieving this goal are stated below:

Connecting audiences

- Connect audiences with knowledge an idea;
- Facilitate content-rich and socially rewarding experiences;
- Create inspiring opportunities for children and families to explore and engage with arts and artists;
- Respect the vital role of arts;
- Reflect and engage Victoria’s diverse community;
- Recognize regional Victorians as valued audiences by providing greater outreach opportunities; and
- Use innovative technology in everything we do.

(Council of Trustees of the National Gallery of Victoria Australia, 2015, p. 11)

The third and fifth framework reflected the commitment towards community and the norm for partnership and collaboration. These included museum-school partnerships and collaborations with government agencies and community for knowledge enhancement purposes. Hence, the framework and strategies are stated below:
**Realising our potential**

- Maintain a focus on serving the community.
- Acknowledge and develop talent.
- Foster a culture of innovation, excellence and collaboration.
- Recognize everyone’s role in achieving best-practice operating efficiency and sustainability.
- Recognize our responsibility to adapt to the changing needs of the community.
- Value, acknowledge and support our volunteers to be ambassadors.

**Sharing our vision**

- Celebrate a strong history of philanthropy and seek future giving.
- Partner with government to exceed community expectations.
- Build rewarding partnerships with the corporate sector.
- Motivate membership to actively participate and advocate on behalf of the NGV.

(Council of Trustees of the National Gallery of Victoria Australia, 2015, p. 11)

The strategic framework introduced in the NGV’s annual report for the financial years of 2014/2015 and 2015/2016 were more comprehensive and detail, with elaborated strategies outlined for each framework. The strategic framework acknowledged in the annual report of the previous financial years was phrased in a simpler manner.

**6.4.3 The Organisational Structure of NGV**

The NGV maintained a hierarchical structure which demonstrated the governance of the Council of Trustees for the NGV, and the Council of Trustees reported directly to the State government through its Minister for Creative Industries. There were four top positions which were the Director, the Assistant Director, the Deputy Director and the Executive Manager supporting the functioning of three major divisions: The Collection Management and Curatorial; the Audience Engagement, Corporate Services, Exhibitions and Finance; and the Business Development, Marketing and Communications.
Following the restructuring process of the Australian public sector in the 1980s, NGV’s annual documents from 1989 to 1993 also addressed similar issue. The documents during this period outlined major innovations undertaken in the restructuring process of the NGV. The analysis of NGV Annual Reports from 1985 to 2015 indicated that the new organisational chart was included into its annual reporting documents starting the reporting year 1989/90.

Figure 6.6: NGV organisational structure
(Council of Trustees of the National Gallery of Victoria Australia, 2015, p. 154)
The analysis of NGV annual documents involving 28 years of reporting frame (from 1989 to 2015) showed the dynamic changes of its organisational structure reflecting the changes that took place within NGV itself. The most expanded form of NGV’s organisational structure is for the reporting years of 2007/2008 and 2008/2009 in which the departments within the organisation were categorized into nine separate divisions (Council of Trustees of the National Gallery of Victoria Australia, 2008, 2009). The remaining reporting years saw minor changes undertaken to the chart, in relation to the restructuring of the departments, addition and deletion of divisions and change in the flow of authority. The most streamlined organisational chart is for 2013/2014 and 2014/2015 in which all departments were structured onto only three divisions (Council of Trustees of the National Gallery of Victoria Australia, 2014, 2015).

6.4.4 The Roles and Functions of the Council of Trustees

The National Gallery of Victoria Act under Section 13 (1) details the functions performed by the Council of Trustees:

▪ Control, manage, operate, promote, develop and maintain the National Gallery land
▪ Maintain, conserve, develop and promote the State Collection of works of art
▪ Make material within the State Collection available to persons, departments and institutions in such manner and subject to such conditions as the Council determines, with a view to the most advantageous use of the State Collection
▪ Conduct public programs and exhibitions of material within the State Collection
▪ Carry out and make available such other services, including computers and other technologies, and the printing, publication and sale of books, information and reproductions in relation to pictures, works of art and art exhibits as the Council thinks fit
▪ Assist the promotion, organisation and supervision of art galleries and anybody or association established for the promotion of art within Victoria
▪ Advise the Minister and these organisations on matters of general policy relating to art galleries
▪ Provide leadership in the provision of art gallery services in Victoria
▪ Carry out other functions as the Minister from time to time approves
Carry out any other functions conferred on the Council under this Act.

(Council of Trustees of the National Gallery of Victoria Australia, 2015, p. 3)

6.4.5 The Roles and Functions of the National Gallery of Victoria (NGV)

As previously discussed, the NGV is the largest gallery in Australia and is responsible for the State Collection which comprises approximately 70,000 works of arts. The gallery built its programs and activities based on the organisational mission of collecting, conserving, developing and promoting the state’s works of art and bringing art to the people of Victoria (Council of Trustees of the National Gallery of Victoria Australia, 2015, p. 11). Within the financial year of 2014/2015, the NGV received 2.3 million visitors and ranked as on one of the top 25 world’s most visited art museums (Council of Trustees of the National Gallery of Victoria Australia, 2015).

6.4.5.1 The Educatve Functions of the National Gallery of Victoria (NGV)

The analysis of the NGV annual reports from the financial reporting year of 2000/2001 until 2015/2016 indicated that the theme education was consistently presented in its annual documents and was one of the major focus of the gallery. The NGV was consistent in its delivery of education programs venturing into small children, school students as well as students of tertiary level of education. The Department of Audience Engagement was established in 2013 and offered an array of programs which brought together the operations of the Front of House team, Public Programs and NGV members (Council of Trustees of the National Gallery of Victoria Australia, 2015).

6.4.5.1.1 Public Programs

The main aim of the Public Programs department was to connect audiences with ideas and knowledge through a diverse array of programs and events. The department organised and facilitated programs for a broad and wide range of audience with a focus on historical and contemporary art practices and explored new areas such as design and architecture. Even though exhibitions, programs and activities were developed to cater for audience of broad range of demographic backgrounds and interest, most of the programs organised were with strong educational elements.
For example, *Melbourne Art Book Fair* which was organised annually since 2015 and had attracted more than 16,000 visitors to its various activities provided networking and links with established international fairs in London, Tokyo, Paris and New York (Council of Trustees of the National Gallery of Victoria Australia, 2015, 2016). Programs such as symposia and lecture series by renowned local and international academics and specialist delivered alongside expert NGV curators and staff were also held (Council of Trustees of the National Gallery of Victoria Australia, 2015).

### 6.4.5.1.2 School Programs and Education Programs

The NGV used its collections and exhibitions to connect the school audience with knowledge and ideas. The theme school programs was elaborated in details in the NGV Annual Report 2000/2001 and its school programs experienced restructuring with the appointment of Senior Education Officers for Australian Art and International Art respectively, new positions which allowed school programs to be offered in these key areas (Council of Trustees of the National Gallery of Victoria Australia, 2001).

Partnerships and collaborations with the various education agencies allowed for short-term and long-term education programs to be offered. Partnerships with associations such as the Department of Education and Early Childhood Development (DEECD) Victoria (National Gallery of Victoria, 2014), Art Education Victoria, Teaching Victoria, the Victorian Association for the Teaching of English and Digital Learning enabled volunteers for these institutions to utilise the NGV in developing program and activities for students (Council of Trustees of the National Gallery of Victoria Australia, 2015). Such partnerships provided opportunities for the NGV to benefit from the expertise and built professional development programs for teachers (Council of Trustees of the National Gallery of Victoria Australia, 2016).

Among the most common activities organised by the NGV were the lectures and conference series. These efforts were often the results of the gallery’s connection and partnerships with art associations such as the Art Association of Australia (Council of Trustees of the National Gallery of Victoria Australia, 2014); the Victorian Association of Philosophy in Schools (Council of Trustees of the National Gallery of Victoria Australia, 2016); the Regional Arts Victoria (Council of Trustees of the National Gallery of Victoria Australia, 2015).
The NGV also worked towards providing greater access to children and students from Melbourne’s regional and remote areas to its collections. The restructure of the school programs in the financial year 2000/2001 involved the appointment of an Outreach Education Officer which enabled the gallery to focus on the outreach programs in providing access of the gallery’s collections, exhibitions and resources for Victorians in outer metropolitan areas and schools in other regional areas (Council of Trustees of the National Gallery of Victoria Australia, 2001). Through its NGV Kids on Tour program and its linkages with 13 regional galleries, six education programs were carried out in 30 participating venues (Council of Trustees of the National Gallery of Victoria Australia, 2016) Gallery Visits You involved introductory talks, exhibitions and collections brought to people in aged-care facilities and members of the community who were unable to visit the NGV (Council of Trustees of the National Gallery of Victoria Australia, 2014).

6.4.5.1.3 NGV Kids and Teens

Children and families were one of the visitor segments crucial for NGV growth as the gallery valued children engagement with art and culture and the facilitation of interactive experiences that connected the children and their families to art and artists more directly. The programs and activities designed and implemented for children and families were represented by varied themes. For example, Express Yourself! Children’s Summer Festival which was held for ten days with a focus on fashion and creative expressions. Slightly on a different note, the exhibition Express Yourself! Romance Was Born for Kids provided interactive space illustrating magnificent fashion, art and multimedia for 85,000 children who visited the exhibition (Council of Trustees of the National Gallery of Victoria Australia, 2015). In 2015, three children exhibition were held: Studio Cats: Andy Warhol/Ai Weiwei for Kids and Fake Food Park: Mari Guide for Kids were organised at the NGV International, and Our Land is Alive: Hermannsburg Potters for Kids was held at the NGV Australia (Council of Trustees of the National Gallery of Victoria Australia, 2016).

In 2014, the NVG Kids expanded its focus covering teenagers with tailored programs for 13 up to 17 years old. Programs such as Art Party and Creative Encounters programs were organised. Meet the Artists, a form of workshop-based programs, which introduced teens to industry experts and
contemporary artists was also introduced to the teens (Council of Trustees of the National Gallery of Victoria Australia, 2015).

### 6.4.5.1.4 Teachers and Educators

In addition to the school programs, the NGV also embarked on professional development (PD) programs for school teachers, principals and educators. The tailored PD programs warranted for appropriately targeted content and delivery to the participants and the annual documents indicated the increase in the number of school visitors to the gallery as a result of the PD for teachers (Council of Trustees of the National Gallery of Victoria Australia, 2003).

### 6.4.5.1.5 Tertiary Sector

The NGV’s involvement with the tertiary sector was not limited to the provision of standard and tailored programs for students of higher learning institutions, however the art museum had tied collaborations with a number of tertiary institutions. One such Learning Partnership program was with The University of Melbourne in which the collaboration between the university academics and the NGV curators had seen a series of four master classes offered in shedding greater focus of the *Masterpieces from the Hermitage: The Legacy of Catherine the Great* exhibition. Collaboration with La Trobe University was also seen successful, which enabled for *NGV Summer School* program delivered by the university academics, NGV curators, educators, conservators and artists. *Connected Learning*, a program for in-service teachers involving the delivery of inaugural accredited subject was made possible through partnership with the Museum Victoria (MV), La Trobe University and Charles Sturt University (Council of Trustees of the National Gallery of Victoria Australia, 2014, 2015, 2016). Collaboration was also established with the Royal Melbourne Institute of Technology (RMIT University), Melbourne Conservatorium of Music, Melbourne Fashion School, Victorian College of the Arts (VCA) and TAFEs which opened the door to various education programs and activities (Council of Trustees of the National Gallery of Victoria Australia, 2013).
6.4.5.1.6 Online and Digital Technology

The theme online resources became prominent in the gallery’s annual document since 2005/2006. The NGV website was viewed, on average, by 1.7 million online viewers every year and the website was redesigned and launched several times in June 2009 (Council of Trustees of the National Gallery of Victoria Australia, 2010) and in December 2014 (Council of Trustees of the National Gallery of Victoria Australia, 2015). Online educational resources were made available to students and teachers focusing on a wide range of year levels, subjects, topics and focus.

Few of the many online endeavours included the Broadband Innovative Project which involved the introduction of electronic whiteboard technology showcasing past exhibitions (Council of Trustees of the National Gallery of Victoria Australia, 2008); and a greater focus on social media, such as Facebook and Twitter, in reaching audience of younger demographics, as well as more prominent efforts in targeting younger visitors through comprehensive online media campaign in youth sites and blogs (Council of Trustees of the National Gallery of Victoria Australia, 2008). In 2009, the first NGV iPhone app was introduced providing subscribers with updated news and information about the latest happening in the gallery (Council of Trustees of the National Gallery of Victoria Australia, 2010), (Council of Trustees of the National Gallery of Victoria Australia, 2007). Other online initiatives include online forum, interactive online competition, access to the collections via NGV Collection, its Virtual NGV with artwork records portrayed online and online learning resources.

The NGV collaborated with various agencies such as the Department of Education and Training, Catholic Education Office, and the Victorian Curriculum and Assessment Authority in increasing its content validity for various education-based online resources (Council of Trustees of the National Gallery of Victoria Australia, 2007).

6.4 SUMMARY OF THE CHAPTER

The chapter presented an analysis carried out on 46 documents related to MV and NGV. Eighteen documents for MV and 28 documents for NGV were thematically analysed based on six major themes. The analysis indicated that both organisations were susceptible to change and the most prominent influencing factor for change was the pressure from budget cuts. MV had embraced a
networked operational design as the outcome of major restructuring process whilst the NGV employed changes on its operation from time to time to better reflect current needs and community interest. The document analysis also showed strong base for education by the two organisations with curriculum-linked programs and programs with educational elements continued to be the key indicators. Increasing focus was also given on the way visitors accessed museum objects and information through the provision of online tools and digital platforms as well as the efforts in digitizing objects into a single database.
CHAPTER SEVEN
DISCUSSION OF FINDINGS AND RECOMMENDATIONS

7.1 INTRODUCTION

This chapter will present the findings based on the analysis and synthesis of three types of data analysed and presented in the previous chapters (chapters four, five and six). This study investigated the education programs carried out in two selected museum institutions in Victoria: Museum Victoria and the National Gallery of Victoria (NGV) in relation to program administration, resources, planning, implementation and evaluation. Specific focus was given to the process of program development particularly in examining the connections between the museum collection to the curriculum and the relevant pedagogy. In addition, the implementation of education programs was also examined on aspects related to pedagogical approaches and strategies employed in showcasing the use of exhibit as the centre of lessons.

Three MV museums participated in the study (the Melbourne Museum, Immigration Museum and Scienceworks), each is a repository for collections representing different themes and nature. The Melbourne Museum showcased collections that highlighted natural history, culture and human development. The Immigration Museum, on the other hand, exhibited collections and promoted information related to migration and immigration history. Scienceworks enhanced public knowledge of science and scientific facts through hands-on interaction with its collections. In addition, the National Gallery of Victoria (NGV) featured paintings and artworks of different eras as its focal point. The uniqueness of each museum’s organisation placed strong influence on the way the collections were showcased in their education programs.

The education programs studied were confined to those designed and delivered for primary and secondary school students as well as students of the tertiary sector, and data was collected through the means of interviews, observations and document analysis involving three museum managers and four museum educators from MV and one senior educator and three museum educators from the NGV. The senior educator at the MV also assumed the role of museum manager given the managerial-related roles.
and responsibilities that she performed in the gallery. Seven research questions framed the study and these research questions are stated below.

1. What were the organisational structure, vision and mission of the Museum Victoria and the National Gallery of Victoria, and the strategic directions that supported the implementation of education programs in these two institutions?

2. Which division was accountable for the education programs at the Museum Victoria and the National Gallery of Victoria, and how was the division managed and sustained in relation to its human resource, marketing, budgeting and funding?

3. What were the types and the target audience of education programs carried out by the Museum Victoria and the National Gallery of Victoria?

4. How did the educators at the Museum Victoria and the National Gallery of Victoria distinguish museum education from classroom learning, and their expectations on the roles of teachers during museum visit?

5. How were the educational programs developed, managed and evaluated in the Museum Victoria and the National Gallery of Victoria?

6. How were the educational programs planned and implemented by the museum educators in the Museum Victoria and the National Gallery of Victoria?

7. What educational theories, strategies and approaches were utilised in the implementation of education programs in the Museum Victoria and the National Gallery of Victoria?

Pseudonyms are used in this chapter as well as in the previous chapters to maintain the participants’ anonymity. And although comparisons are generally made between organisations and not between educators within an organisation, these pseudonyms allow for specific teaching styles of the educators and specific managing styles of the managers to be identified throughout the discussion.
7.2 DISCUSSION OF FINDINGS: FIRST RESEARCH QUESTION

The first question investigated aspects related to the corporate information and strategic directions of the MV and the NGV. Hence it looked at the organisational structure, vision and mission of both organisations as well as the strategic directions formulated and implemented which supported the Education Unit and the education programs carried out. Specifically, the research question is,

What were the organisational structure, vision and mission of Museum Victoria and National Gallery of Victoria, and the strategic directions that supported the implementation of education programs in these two institutions?

Three organisational aspects are explored in this question:

i. The organisational structure which demonstrated the operation of each museum organisation;

ii. The mission and vision of the MV and the NGV as well as the mission and vision for the Education Unit of both museum organisations;

iii. The strategic direction formulated and implemented by MV and NGV that enabled

Data from documents related to the topics as well as the interview responses from the managers were analysed in answering the first research question.

7.2.1 The Organisational Structure of Museum Victoria (MV) and the National Gallery of Victoria (NGV)

The information on the organisational structure of each museum organisation demonstrated the museum leadership and administrative functions as well as how the education unit for each museum fit within the museum’s overall administrative structure. The structure also showcased the interaction between the different key divisions and the institutions’ commitment towards education-based programs.

The document analysis indicated that both MV and NGV operated under a different organisational structure. MV operated under a networked organisational design following a major restructuring effort and this was first documented in its annual report for the financial year of 2002/2003. The NGV, on the other hand, functioned based on a hierarchical structure. The findings also indicated
that MV and NGV management did not consider their organisational design as a fixed structure. The analysis carried out showed that the organisational structures were an ongoing reference and changes were made from time to time, to better reflect the current needs of the organisations.

7.2.1.1 Museum Victoria (MV)’s Organisational Structure

Financial pressure in early 2000 was the main factor behind MV’s major restructure. Threatened by budget cut by the government and the significant reduction in the number of its visitors (Greene, 2006), MV was at the verge of retrenching its employees and closing down. As analysed by Rentschler and Geursen (2003) the opening of Museum of Australian Art in Federation Square, Melbourne Central Business District, in 2002 had an influence in the decreased number of visitors to the MV museums. The museum is NGV’s second site and was part of the Victorian State Government’s initiative to position Melbourne as a leading cultural hub (Rentschler & Geursen, 2003).

A strategic move was undertaken by MV which involved the streamline of its structure from one that was hierarchical (Museum Board of Victoria, 2000) to the one that was networked-based (Museums Board of Victoria, 2003). This included laying off four top executive members, revamping the key division areas and restructuring its units (Greene, 2006). The process of transforming MV’s organisational structure from hierarchical to a networked-based is presented as figure 7.1. The networked-organisational structure of MV is presented as figure 7.2.

Through networked design, all organisations under MV were streamlined into a single structure with a common and shared purpose, direction and goal across all its establishments. Prior to the restructuring, each museum under MV was under the responsibility and accountability of a director. The networked structure, however, placed the Melbourne Museum, the Immigration Museum and the Scienteworks under a single leadership, hence, provided the top management with a comprehensive view of each aspect of operation carried out by these museums.
Figure 7.1: From hierarchical to networked organisation at Museum Victoria (MV)
Source: http://recollections.nma.gov.au/issues/vol_1_no_2/commentary/museum_victoria#4

Referring to figure 7.2, the operations and management of MV museums were overseen by a Chief Executive Officer (CEO) and were planned, organised and implemented by four key divisions across all MV museums: Public Engagement; Collections, Research and Exhibitions; Corporate Services; and Communications and Partnerships. The network-based structure, according to Greene (2006) were granted with flexibility under this new design, their attachments with MV as the main organisation enabled them to serve all MV museums, unlike in the previous organisational structure in which employees had to report to the specific MV museum where they were employed.
Figure 7.2: Museum Victoria (MV) organisation structure as at 30 June 2016 (Museum Board of Victoria, 2016)

The data gathered from semi-structured interviews involving MV museum executives provided a perspective of how the MV employees viewed the networked structure; and how the networked design influenced and shaped the work culture. Susan Parker, the Manager of Public Programs at the Melbourne Museum, felt that the networked structure enhanced connections between the different departments and units across all organisations within MV. This, in Parker’s opinion, aligned the different museums under MV to work towards the same direction and common goal. Specifically, Parker stated,

We don’t have a vision statement or mission statement. We certainly have that mission statement for the museum as a whole but we don’t have specifically for education. And we’re pretty clear with what we do and what we do fit within the statements of Museum Victoria as a whole. And the museum statements very much encompass all learning.

The education programs at the MV museums were assigned under the Unit of Education and Community Programs which reported directly to the Division of Public Engagement (figure 7.2).
Through hierarchical structure, Parker attested, the planning and implementation of education programs and public programs were carried out separately, even though some of these programs were based on the same exhibitions and events. The networked structure, however, allowed for a planning process that encompassed broader and more comprehensive outlook of the types of programs that were attached to projects or exhibitions. Providing an example for this, Parker stated,

One of the program coordinators, Rosita, she has been working for the last two years on exhibition development with the exhibition team and going way beyond schools. Keeping schools in mind all the time but going way beyond and thinking about how everybody learns and not just how school children learn. So, I guess that’s what makes in many ways learning and education at Museum Victoria different than other organisations. Because we are making a conscious effort to not make that division.

Parker added that the employees were not attached to a museum, the networked design enabled the employees to be assigned to any museums under MV for any tasks related to their job scope. One such example was Marie Smith, who assumed the role of Public Program Manager at the Immigration Museum. In addition, she also was the Community Engagement Manager for MV, a position that required her to serve all museums across MV. Smith clarified that it was common for top administrators to assume dual roles, serving a museum organisation and all MV museums.

The organisational structure was amended from time to time reflecting the changes made in MV’s key structure. The document analysis based on 15 years of annual reporting for MV (from 2001/2002 to 2015/2016) revealed that the changes made involved aspects such as the addition of key areas for existing division, (for example the role of the Information, Multimedia and Technology division increased through the addition of Technical Operations) (Museum Board of Victoria, 2005); as well as the integration of two key areas into one, such as the changes in several key operation areas reported in its annual document in 2007 (Museum Board of Victoria, 2007; Museums Board of Victoria, 2016). The establishment implemented minor restructure process in 2012 which involved the operation of new division Marketing, Partnerships and Communication, and the Museum Operations division was renamed Public Engagement. Education and Community Programs was one of the key areas under the Public Engagement division (Museum Board of Victoria, 2012).
7.2.1.2 National Gallery of Victoria (NGV)’s Organisational Structure

The analysis of NGV’s annual reports from 1989 to 2015 (covering 28 years) showed the organisation’s reliance on hierarchical type of organisational structure. Reporting to the Ministry for Creative Industries and governed by the Council of Trustees for the NGV, its organisational structure consisted of four top executive positions (the Director, Assistant Direct, Deputy Director and the Executive Manager); with three major divisions (the Collection Management and Curatorial; the Audience Engagement, Corporate Services, Exhibitions and Finance; and the Business Development, Marketing and Communications) (Museum Board of Victoria, 2015). The organisational structure is presented as figure 7.3.

Similar to the MV, the NGV had undergone a restructuring process of its organisation following the budget cut experienced by the Australian public sector in the 1980s. This were supported by Rentschler and Geursen (2003) and the NGV’s annual reports from 1989 to 1993. These annual documents outlined major innovations undertaken by the NGV in its restructuring process, and its annual reporting documents starting from the reporting year of 1989/90 included a new organisational structure which was the product of the restructure.

Minor restructuring entailed in 2007 to 2009 which involved the realignment of the NGV’s divisions, leading to a more detail organisational structure (Museum Board of Victoria, 2008, 2009). The remaining reporting years saw minor changes undertaken to the chart, in relation to the restructuring of the departments, addition and deletion of divisions and change in the flow of authority. The most streamlined organisational chart is for 2013/2014 and 2014/2015 in which all departments were structured onto only three divisions (Council of Trustees of the National Gallery of Victoria Australia, 2004).
7.2.2 Corporate Information and Strategic Direction of Museum Victoria (MV) and the National Gallery of Victoria (NGV)

The discussions on the corporate information and strategic direction undertaken by the MV and the NGV were based on the analysis of reporting documents of both organisations as well as the data derived from the thematic analyses carried out on the interview transcripts of the museum managers. The reporting documents of MV and NGV both contained slightly different information. MV’s annual reporting and strategic planning documents highlighted data in relation to vision, values and its strategic direction; whilst the NGV’s annual reporting and strategic planning documents consisted of information pertaining to the organisational mission, vision and strategic frameworks. The data from the document analysis was corroborated with the data obtained from the semi-structured interview, giving a
comprehensive look of both organisations’ corporate and strategic information. The findings are discussed in the following sub-chapters.

### 7.2.2.1 Corporate Information and Strategic Direction of Museum Victoria (MV)

The interview data involving the museum managers for the Melbourne Museum, Immigration Museum and Scienceworks revealed that the organisation’s mission and vision were shared across all departments, divisions and units and drove the planning and implementation of all programs and activities. This was supported by the findings derived from the document analysis, which indicated that the reference for shared mission and vision for MV was first addressed in its 2002/2003 annual document alongside the introduction of the organisation’s reliance on a networked-based organisational structure (Museums Board of Victoria, 2003). The adoption of network-based organisational design aligned all the units across all the MV museums into a single administrative structure.

The five-year strategic planning document for 2013-2018 indicated the MV vision as “leading museums that delight, inspire, connect and enrich” (Museums Board of Victoria, 2016, p. 6). The organisation also has established a set of values or norms that represented the organisation. The eight values identified were leadership, respect, reconciliation, human rights, responsiveness, integrity, impartiality and accountability.

Susan Parker, the Public Program and Humanities Manager for the Melbourne Museum stated the mission statement for MV as “inspiring experiences, educating and learning, knowledge and connection”. Hence, the Education Unit for the Melbourne Museum, Immigration Museum and Scienceworks planned and carried out their programs and activities based on these shared visions and mission, and did not form separate vision and mission at departmental level.

Parker indicated that the MV vision and mission supported the direction that the Melbourne Museum was taking. She described the aim of the Education Division of the Melbourne Museum was in making real connections between the schools, the curriculum and the museum through content, exhibitions and research; with a focus on learning and community.

Marie Smith, the Public Program and Humanities Manager for the Immigration Museum, explained that the established vision and mission statement aligned with the Department of Education
and Early Childhood Development of Victoria’s strategic direction. She added that the vision and mission were the internal documents for the department. The strategic direction for the education programs was to provide opportunities for students to engage and empathise with stories of migrations in order to improve their understanding of the origins and complexity of the multicultural society which they live in, working towards a more just and respectful society. The strategic direction shaped the objectives, aims, goals and outcomes of the Education Division at the Immigration Museum.

Under its five-year strategic planning, MV had established six strategic directions to be undertaken: deepening connections; investing in knowledge, expertise and collections; digital transformation; organisational resilience and building Victoria’s cultural capital. For each, specific tasks and roles had been identified to achieve each of the stated strategic (Museums Board of Victoria Strategic Plan 2013-2018).

7.2.2.2 Corporate Information and Strategic Direction of NGV

The NGV operated with the vision of “Creating an inspiring future: enriching our understanding of art and life” (Council of Trustees of the National Gallery of Victoria Australia, 2015, p. 12). The organisational mission aimed “to collect, conserve, develop and promote the state’s works of art and bring art to the people of Victoria. Building on this 155-year history, today the NGV is dynamic, vibrant and essential community asset that contributes to the cultural, educational, social and economic wellbeing of Victorians” (Council of Trustees of the National Gallery of Victoria Australia, 2015, p. 11). The mission was introduced since the financial year of 2014/2015 and was more comprehensive as compared to the previous mission of the organisation, stated as “To illuminate life by collecting, conserving and presenting great art” (Council of Trustees of the National Gallery of Victoria Australia, 2015, 2016).

Supporting the organisational mission was the NGV’s vision stated as “creating an inspiring future: enriching our understanding of art and life” (Council of Trustees of the National Gallery of Victoria Australia, 2015, p. 11). The vision was introduced in the organisation’s annual report for the financial year of 2014/2015. The new vision embraced, not only the goal that the gallery attempted to achieve, it also described the characteristics of the process within which the goal can be accomplished.
The previous vision for the gallery stated, “As Victoria’s cultural flagship and home to Australia’s finest art collection, the NGV is recognized as one of the world’s leading art museum” (Council of Trustees of the National Gallery of Victoria Australia, 2013, p. 11).

The interview session with Reese Webb, the Senior Educator of the National Gallery of Victoria (NGV), provided the information in relation to the aim of the NGV School Unit. According to Webb, the unit aimed to improve student learning and teachers’ professional capacity through arts, its collections and exhibitions. These were achieved through its long term and short-term programs and activities that were targeted for teachers and students.

The NGV Annual Report for 2014-2015 stated five aspects of its strategic framework and, under each, strategies for achieving the working within this framework. The framework was “Bringing art works to life; Connecting audiences; Realising our potential; Building for the future and Sharing our vision” (p. 11).

The document analysis carried out on the reporting documents for both organisations found strong emphasis for education programs designed for school audience and educational programs aimed for public awareness, knowledge and education. The annual reporting documents for MV and the NGV selected for analysis showed increasing number of programs and events with a focus on education each year. The strategic direction by MV and the strategic framework by the NGV appeared to set education as one of the roles that the museum organisations needed to play.

7.2.3 Summary

The discussion of findings for both museum organisations above revealed the MV’s and NGV’s strong commitment in their pursuit of museum education. The analysis of financial reporting documents for the MV and the NGV indicated that the theme education was consistently presented in its annual documents, signifying the organisations’ commitment towards public knowledge and education. This is evidenced through the emphasis on education in the strategic planning of both organisations. The analysis found a general increase in the number of education-based programs implemented each year, with some program expanded to a wider visitor segment, newly introduced programs within existing
programs and the online-based programs which enabled students who were logistically challenged to peruse the education-oriented activities.

MV was found to operate based on a networked-based organisational structure, whilst the NGV was framed by a structure that was hierarchical. Based on the findings derived from the analysis of documents, both organisation experienced financial difficulty due to the restructuring of public sector by the state government in late 1990s. Pressed by a significant drop in the number of visitors, the financial issue after the Melbourne Museum moved to a new building and the reduction of government funding strongly influenced the MV to restructure its organisation. This resulted in the adoption of a networked-based organisational design which streamlined all the departments within its three museum organisations into similar structure, reporting to the MV’s centralized top management.

The reference to the networked-based framework ensured that all MV organisations operated based on common goals and direction. Therefore, the MV museums shared a similar organisational mission and vision across all its departments and divisions; while the NGV which operated based on a hierarchical structure provided the flexibility for its departments to formulate departmental vision and mission statement.

7.3 DISCUSSION OF FINDINGS: SECOND RESEARCH QUESTION

The second research question aimed to identify the division in the MV and the NGV which was responsible for the development and implementation of education programs, including the administrative aspects of this division. The second research question is stated below:

Which division was accountable for the education programs at the Museum Victoria and the National Gallery of Victoria, and how did the division managed and sustained in relation to its human resource, budgeting, marketing and funding?

The findings for this research question addressed the following aspects:

i. The division in the MV and the NGV which was responsible for the education programs in these museum organisations;
ii. Staffing and recruitment of human resource;

iii. Marketing methods and strategies in promoting the education programs;

iv. Space and facilities utilised in carrying out the education programs;

v. Budgeting of the division which affects the education programs organised;

vi. Partnerships and funding (and its source) which enabled the division to operate.

The data explored in answering the research question was based on the analysis carried out involving the data gathered from the semi-structured interviews of the museum managers and the document analysis. The following are the findings for this research question.

7.3.1 Division Responsible for Education Programs at the MV and the NGV

The education programs at the MV was the responsibility of the Department of Education and Community Programs, whilst at the NGV, the NGV School Unit was responsible for the education programs planned, developed and implemented at the gallery. The following are the descriptions of both departments.

7.3.1.1 The Department of Education and Community Programs at the MV

The utilisation of a networked-based framework placed the MV museums into a single network structure, reporting to a single administration. All the departments and divisions within these museum organisations did not formulate the vision and mission at departmental level, the departments and divisions shared the organisational vision and mission. The education programs at the Melbourne Museum, the Immigration Museum and the Scienworks were planned, developed and implemented based on these shared vision and mission. Based on the networked structure, the education programs at the MV museums were the responsibility of the Education and Community Program Department within the Public Engagement Division (Museum Board of Victoria, 2016, p. 18). Susan Parker, the manager of the department for the Melbourne Museum mentioned that the emphasis on learning and community in the MV’s vision and mission appropriately aligned with the department’s focus. Hence, it was not too difficult for the department to ensure that the programs they organised, both public programs and education programs, meet the shared vision and mission.
Based on the shared vision and mission, the Department of Education and Community Programs would develop the strategic direction for its education programs. This then would enable the staff to establish the objectives, aims, goals and outcomes for a particular education program. According to Marie Smith, the departmental manager for the Immigration Museum as well as the Manager for Community Engagement across all MV museums, the strategic direction for the education programs at the Immigration Museum was to provide opportunity for students to engage and empathise with stories of migrations in order to improve their understanding of the origins and complexity of the multicultural society which they live, working towards a more just and respectful society. It is under this strategic plan that the department established their objectives, aims, goals and outcomes.

7.3.1.2 The School Unit of the NGV

At the NGV, the division responsible for school programs was known as the NGV School Unit. The School Unit reported to the Department of Audience Engagement (Council of Trustees of the National Gallery of Victoria Australia, 2015, p. 154), which consisted of three areas of responsibilities: public and education programs, membership and front of the house. In addition to the development and implementation of public programs and education programs, the management of the department was also responsible for fund application, partnerships and collaborations, resource development (such as exhibitions and programming) and embarked on the strategic planning of the department. The NGV School Unit aimed to improve student learning and teachers’ professional capacity through arts, NGV’s collections and exhibitions.

7.3.2 Staffing and Recruitment

This section discusses the findings pertaining to the aspect of human resources of the Department of Education and Community Programs at the MV and the Department of Audience Engagement at the NGV. Specifically, the discussion focuses the size the department in each museum organisation, the roles and responsibilities of each position in the department and the considerations undertaken in the recruitment process in relation to the qualifications and work experience
requirements. This information would support the conclusion made in relation to the credibility of the staff in charge of the education programs.

7.3.2.1 Staffing and Recruitment at the Melbourne Museum

At the time of the interview, the department consisted of 14 staff members including the Public Program Manager, the Program Manager of Humanities, four museum educators (known as the Program Coordinators in the Melbourne Museum), two Senior Program Officers, a Line Manager, Program Officers and several presenters. Some of the staff members were responsible for the development of public programs and the museum educators were responsible for the development of education programs. The responsibilities in the development of education programs included material development, training and professional development of teachers, connection with schools, etc. Though the senior program officers developed programs for general public, they also presented and delivered the education programs, and the presenters presented programs across all audiences.

All of the staff members in the department were permanent. However, as some of the staff members were on maternity leave or on leave, short-term staff were recruited. In addition, the department also employed five to six casual workers or part timers to help out.

The department valued several attributes in filling the positions of Program Coordinators. Susan Parker believed that teaching experience was a valuable asset to the museum educators but not necessarily a requirement to work in the Melbourne Museum. She viewed that experience in communication as more important. In relation to this, there were several qualities that museum educators must fulfil-having the communication and project management skills and the ability to develop and deliver programs, possessed knowledge of the curriculum, knowledge of issues and trends in education, the ability to work in team and the ability to work independently and without supervision. Even though the positions advertised for the department did not require a qualification in a bachelor degree, all candidates who turned up for the interview, according to Parker, possessed at least a bachelor degree as their highest qualification.
7.3.2.2 Staffing and Recruitment at the Immigration Museum

The Department of Education and Community Programs in the Immigration Museum carried out several types of activities such as the festival programs, holiday programs, family and school programs, education programs for primary, secondary and tertiary levels, including lectures. The department was led by Marie Smith who joined the museum since 2009 as the Community Engagement Manager. Tatiana was also responsible for multiple cross venue projects at the MV and at the Immigration Museum she managed six employees.

The department was not responsible for exhibitions and special exhibitions carried out at the museum. Any exhibition fell directly under the responsibility of the Exhibition Department. However, there were occasions where the department collaborated with other agencies for exhibition. For example, the partnership with the Department of Education and Early Childhood of Victoria in organizing a program called *Quest* which was a display of photographic and multimedia materials.

7.3.2.3 Staffing and Recruitment at Scienceworks

At the point of the interview, Scienceworks had a total of nine staff in the Department of Education and Community Programs consisted of the Education and Public Program Manager, three Program Coordinators, four Program Officers and a Science Program Managers. In addition, the department had 12 irregular part-time presenters who worked a minimum of five to eight hours per fortnight. They were trained by the Program Officers to present shows to the schools and public audiences. The education programs developed for the Victorian Certificate of Education (VCE), however, were the sole responsibility of the Program Officers, who were also qualified teachers.

Peter Milan, one of the program coordinators at the Scienceworks, detailed the roles and responsibilities attached to his post. As a program coordinator, his primary responsibilities included writing on-site, off-site and online education programs and resources. In addition to the education programs, Peter was also responsible of the science shows. These shows attracted larger audience as compared to the education programs, according to Peter, up to 200 students for each 30-minute show.

As a museum that offered its visitors science-based activities such as experiments, scientific discovery and science-based demonstrations, the education programs designed and delivered by the
Education Division at Scienceworks also centred around such activities that could assist school audience in the acquisition of scientific knowledge. Hence, it was important for its employees to have acquired science-based background in carrying out their duties. For example, the two participants from Scienceworks, Julie Howard and Peter Milan graduated with a bachelor’s Degree in science (Hons.) and were science school teachers before joining the MV. Pennie explained that science-based knowledge assisted the understanding of learning and thinking of science. It also helped the employees to identify areas of knowledge that the staff needed to improve on and where to seek this knowledge. Most importantly, the education programs carried out at Scienceworks were fact-driven content. Therefore, strong grasp of scientific knowledge was important to program coordinators in program development and delivery.

Howard added that the employees in the Department of Education and Community Programs must also possess passion for communicating science, enjoy working with audience across all ages including with children and families, creative and able to think of new ideas and new ways of doing things. For Program Coordinators, breadth of experience was essential. They must be able to demonstrate the ability to work with preparatory students as well as year 12 students and possessed a range of innovative ways of incorporating their knowledge with museum resources.

The Department of Education and Community Programs across the three museums operated in similar manner. The administrative aspect of the department was carried out by centralised staff of each museum including handling and receiving phone calls and bookings of education programs. This allowed the program coordinators to focus solely on program development and implementation.

7.3.2.4 Staffing and Recruitment at the National Gallery of Victoria (NGV)

The education programs at the NGV were the responsibility of NGV School Unit which reported directly to the Education and Public Program Manager. The Department of Education and Public Program consisted of three general areas: The Public Programs, Front of House and Membership.

At the point of the interview, the Department of Education and Public Program employed ten full time educators with five-part time educators. There was one Senior Program Coordinator for Public Program Unit and one Senior Educator for the School Unit. According to Tina Andrews, the Head of
Education and Public Program at the NGV, in addition to full time and part time positions, the department also hired six casual workers however the casuals were placed in a separate pool of recruitment. The department also consisted of three office administrators who were responsible for communication, bookings and inquiries for public and education programs.

All educators at the NGV School Unit, except for the Project Officer, were qualified teachers with at least a qualification at a bachelor degree level. Some of the educators were experienced primary school teachers while the remaining were experienced secondary school teachers. Although it is not necessary, the NGV encouraged its educators to be the registered members of the Victorian Institute of Teaching (VIT).

The recruitment process at the NGV followed through the NGV’s employment procedures and the government agency procedures. Teaching experience was one of the characteristics looked for in educators as the quality represented curriculum knowledge. A range of skills from flexibility to work in different learning environments outside the classrooms, the ability to operate with people of diverse backgrounds and the capacity to utilize the arts as a platform for disciplinary learning also were the characteristics valued in the educators. Andrews explained that the traits would enable museum educators to function effectively in performing museum education function and curriculum function.

The knowledge in education assisted the museum educators to utilize pedagogical approaches and techniques that were appropriate in showcasing artwork in lessons. The demographic data of museum educators demonstrated diverse areas that the museum educators represented. Emma Roberts, for example, specialized in education programs related to Asian and Indigenous collections, whilst Kate Collins handled lessons in connection to arts and ethics as well as the International Bachelorette program. This diversity allowed the department to strategize different types of artwork and era in the development and implementation of education programs appropriate to the educators’ area of expertise.

7.3.3 Marketing Methods and Strategies of Education Programs

There was a standard marketing protocol followed through by MV museums in promoting their education programs. One of the strategies involved Museum Victoria (MV) Teachers, a membership-based association by MV open for school teachers. Teachers who were registered with MV Teachers
would be sent a newsletter detailing the museums’ latest programs and events every fortnightly. The database with MV Teachers allowed MV to customize the information in the newsletter specific to the subjects and discipline taught by the teachers in schools.

As part of a networked organisation governed by the MV, Scienceworks followed common marketing strategies established by the organisation. However, in addition to MV Teachers, the museum also promoted its education programs through advertisement in the Science Teachers Association Newsletter, as well as in the regular mails by the Catholic Education Office to their teachers.

In the past, MV used to send out printed brochures to schools however this practice has been discontinued after an evaluation carried out pointed out of its ineffectiveness. The use of brochure was costly and did not garner the results intended. The evaluation indicated that these brochures often ended up on principals’ desks and the information did not reach all teachers. For teachers who did receive the brochure, the information did not provide sufficient pull to get teachers to arrange for excursion to museums.

The NGV promoted its education programs through the use of direct mail of promotional posters that were sent twice a year to 3000 schools and tertiary institutions around Melbourne Central Business District and greater Melbourne areas. In addition to direct mail, the NGV’s Public Relations Department also promoted the education programs through newspaper pages such as the Education Age and the Herald Sun’s Learn lift-out (Council of Trustees of the National Gallery of Victoria Australia, 2013, 2014). Online platform was also a powerful tool of promotion. The NGV’s website was also quick to update latest programs and events and these included the events and programs related to education programs. The education programs were also marketed through centralised marketing strategies undertaken by the NGV to promote all its events and programs. These included the bi-monthly What’s On calendar of events which were distributed to the public and NGV members, and the NGV members’ bi-monthly magazine.

7.3.4 Space and Facilities

MV was the umbrella for a number of organisations including three museums, an exhibition centre, a showroom and two storage spaces. Specifically, through the Museum’s Board of Victoria, the
MV owned and operated the Melbourne Museum, the Immigration Museum and the Scienceworks. In addition, the organisation also managed and operated the Royal Exhibition Building, in which its building and garden are listed as one of the UNESCO World Heritage, located adjacent to the Melbourne Museum in the Carlton Garden. In one of the Melbourne Museum’s wings is the IMAX Melbourne, the world’s second largest screen. The MV also owned two storage spaces: Moreland Annexe which was an off-site collection storage facility and the Simcock Avenue Store which operated a non-collection store.

In relation to the implementation of education programs, both shared spaces and designated rooms were used in the Melbourne Museum and the Immigration Museum. Of the three museums in the study, the Department of Education and Community Programs at the Scienceworks Museum was found to be more susceptible to immediate planning and change. The findings gathered from the analysis of semi-structured interview involving the MV museum managers showed that the Scienceworks did not have specific space in carrying out its education programs. The education programs at this museum were run using common spaces that were also utilised for other programs and projects. Reactive planning was the term used by the Scienceworks’ museum manager, Rosita Hudson, in explaining the nature of the space in which its education programs were implemented.

According to Hudson, the program coordinators had to reactively plan their lessons based on the specific exhibition that the programs were linked to, and that was not necessarily the case. In addition to fixed programs, education programs were also based on the exhibitions carried out at the museum and the nature of these education-based programs varied between exhibitions. For example, if a particular exhibition was small in size that would allow the staff from the Department of Education and Community Programs to set up few stations around the exhibition for experiments. If the exhibition was large in size, then the Education and Community Program Department would arrange for presentation base where a presenter explained a particular scientific concept related to the exhibition. The education-based program would end when the exhibition came to an end, and the staff had to wait for a different exhibition to plan their education programs.

During the interview, Parker’s concern about space related issue at the Melbourne Museum was connected to the increasing number of education programs in contrast to the space available to
accommodate the school visitors. She pointed out that the museum’s current site had been utilised for more than ten years and changes were made to some parts of the building structures and spaces to accommodate the increasing numbers of school visitors. However, the area was not adequate to cater for the number of students who registered for the programs at the museum. Hence, the front service staff had to manage students by groups upon arrival and to quickly bring students to lesson hall once they were registered at the main counter so that they could attend to another group of students.

Space was not an issue in the implementation of education programs at the NGV. The gallery had allocated rooms for classes for its museum educators to carry out their lessons and studios to allow for workshops and studio-based lessons. Lessons involving artworks were carried out in the public area where specific artwork was exhibited. The issue to educators was in increasing engagement and improving student focus on the artwork and lesson when the lessons were carried out in public space.

7.3.5 Budgeting for Education Programs at the MV and the NGV

At the Department of Education and Community Programs of the Melbourne Museum, the Immigration Museum and the Scienceworks, budget was planned in concurrent with program planning. The department carried out its program planning based on a one-year plan, a three-year plan and a five-year plan. In addition, budgeting was planned at three levels mainly at the departmental level, the organisational level and at the level of MV.

The budgeting process at Scienceworks was planned around the facilities that the museum had as well as the sponsors for specific exhibitions. The museum had two permanent exhibition spaces that were maintained by several parties. The Lightning Room, for example, had three separate budgets which were the ‘public program budget’ for implementing the program, the ‘facility budget’ that was used for maintaining the facility inside the room and budget for some of the specialists’ equipment.

The NGV planned for operation budget, working budget and annual budget. For the annual budget planning, the Department of Education and Public Programs at the NGV had to identify the projected revenue and the expenditure. The department was given a target for the revenue that the education programs and the public programs needed to generate. The department charged a fee of AUD$6 per person per hour for its education programs. Tina Andrews, the Head of Education and
Public Programs at the NGV, said that the fee was low, however the schools had their own rates and would not participate in the gallery’s programs if they were charged highly.

7.3.6 Partnerships and Funding

The findings derived from the interview data and the analysis of selected documents revealed a strong culture of partnerships established by the MV museums. In relation to education-based programs, partnerships and collaborations often involved educational institutions and the immediate communities.

The NGV School Unit maintained consistent sources of funding every year. The Art Victoria funded the School Unit about AUD$1.3 million each year for its operation. Another one third of the budget was funding from the Department of Education and Early Childhood Victoria (DEECD). The remaining one third of the budget had to be generated by the department. The department also utilised the exhibition budget which carried an allocation for the exhibition-based education and public programs.

At the point of the interviews, the NGV had secured a three-year term funding with the Department of Education under the Strategic Partnership Programs (SPP) in recognition of the importance of learning outside school. At the end of the three-year term, the department would prepare a 40 to 50-page proposal detailing the gallery’s accountability, future programs and how the programs would improve student learning and achievement.

Partnerships with the tertiary institutions paved ways for stronger research culture, learning opportunities, professional development and career enhancement, and sharing of knowledge and expertise with mutual advantage for both the MV museums and the collaborative partners. Some of the universities in which MV had collaborated in the past were The University of Melbourne, Monash University, Australian National University and Swinburne University. The collaboration with The University of Melbourne and Monash University, for example, enhanced the inter-disciplinary research endeavours at postgraduate levels (master’s degree and doctoral degree) and allowed for scholarships to be offered involving using MV museums as centre for research and data collection; as well as MV staff as research advisors. The collaboration with the Monash University also enabled the development
of online learning resources, *Making History*, targeted for school audience. MV also tied partnership with the Australian National University and committed in a number of projects that enhance the public knowledge of the Indigenous People. Workshop-based programs were organised as one of the outcomes of the partnership with the Swinburne University (Museum Board of Victoria, 2016).

In relation to partnerships, Scienceworks worked closely with Victoria University particularly in relation to the Planetarium and the Lightning Room as the university funded and maintained these two exhibitions. In return, the university did its high voltage research for the Electrical Engineering Department at the museum. The museum also had a social obligation with the western suburbs of Melbourne and there were several programs which were specifically catered for the residents from these areas. Advice and expertise were also sought from the professional teacher organisations. At the time of the interview, the museum received a small grant from Dow Chemical to run an international European chemistry program. As a government body, the museum was selected in deciding and choosing their sponsors. Sponsors often received tax exemption and the publicity for the programs being sponsored. The museum also received funding from the Department of Education and Early Childhood of Victoria for two aspects: wages and salary as well as the implementation of the education programs. The DEECV also sponsored the travel cost of year six students to participate in the museum’s education programs.

Scienceworks also teamed partnerships on a basis of expertise. The content of its education programs must be validated by content experts. If expertise in an area was not available at the museum, there needed to be a content sign-off from an external expert. The museum viewed content validation as an important process prior to the implementation of an education program because the communication of inaccurate content to the public is damaging to the museum’s reputation. In addition to content validation, expertise was consulted for their opinions. These experts may be the museum personnel of other departments such as the scientists and the astronomers who worked at the museum.

For the NGV, partnerships and collaborations with various education agencies allowed for short-term and long-term education programs to be offered. Partnerships with associations such as the Art Education Victoria, Teaching Victoria, Victorian Association for the Teaching of English and Digital Learning enabled volunteers for these institutions to utilize the NGV in developing program and
activities for students. Such partnerships provided opportunities for the NGV to benefit from the expertise and built professional development programs for teachers (Council of Trustees of the National Gallery of Victoria Australia, 2016).

Among the most common activities organised by the NGV were the lectures and conference series. These efforts were most commonly the results of the gallery’s connection and partnerships with art associations such as the Art Association of Australia (Council of Trustees of the National Gallery of Victoria Australia, 2014); the Victorian Association of Philosophy in Schools (Council of Trustees of the National Gallery of Victoria Australia, 2016); the Regional Arts Victoria (Council of Trustees of the National Gallery of Victoria Australia, 2015).

7.3.7 Summary

The findings for the second research question indicated that the implementation of education programs at the MV museums and the NGV were the responsibility of a department which was also responsible for the museums’ public programs. At the MV museums, the education programs were developed and executed by program coordinators of the Division Unit, Department of Education and Community Programs. At the NGV, its education programs were carried out by the educators of the NGV School Unit which reported to the Department of Audience Engagement.

The size of the Department of Education and Community Programs between the MV museums varied, it was found that the number of employees in the department was also influenced by the size of its museum. The Department of Education and Community Programs at the Melbourne Museum consisted of the highest number of employees between the three museums, followed by the Scienceworks and the Immigration Museum. The Scienceworks museum, however, hired the highest number of irregular part-time employees (12 employees). The nature of the education programs at the Scienceworks included exhibitions and presentations based on its permanent collections and temporary exhibitions was the influencing factor.

In relation to the marketing and promotional strategies of the education programs, it was found that the MV museums’ main method was using electronic mails sent every fortnightly to teachers who registered with MV Teachers. MV Teachers was a membership-based association at the MV museums
and the members’ database allowed the MV museums to tailor the information sent to these teachers. The NGV’s promotional efforts targeted wider audience base. In addition to sending its calendar of events and the gallery’s magazine to the NGV members including newspaper advertisements, the gallery promoted its education programs through the use of direct mail of promotional posters that were sent twice a year to 3000 schools and tertiary institutions around Melbourne and Victoria. Using web platform as a promotional tool for education programs continued to be a powerful marketing strategy for both organisations. This was evidenced through the increased focus given in web development particularly in the development of online materials and resources.

7.4 DISCUSSION OF FINDINGS: THIRD RESEARCH QUESTION

The third research question aimed to investigate the nature of the education programs implemented in MV and NGV in relation to the types of programs organised, and the audience in which the programs were designed for. Specifically, the second research question was stated as:

What were the types and the target audience of education programs carried out by the Museum Victoria and the National Gallery of Victoria?

In answering this research question, the findings derived from the semi-structured interview data as well as the data from document analysis were corroborated and the discussions address the following aspects of the research question.

i. The types of education programs carried out by the Department of Education and Community Programs at the MV museums and the NGV School Unit at the NGV;

ii. The target audience in which the education programs at these two museum institutions were developed and implemented for.

The following discussions detail the types and the target audience of the education programs carried out by both museum organisations.
7.4.1 The Education Programs at the MV Museums

The Department of Education and Community Programs at the MV museums planned, developed and implemented programs and events that governed both the education and public programs. These involved festival-based programs, holiday programs as well as programs that were specifically developed based on the permanent and temporary exhibitions carried out at the museums. The organisation of education-based programs, however, was under the responsibility of its Education Division.

The findings indicated that the education programs at the MV museums represented three main categories: the on-site programs, off-site programs and online programs. The on-site programs referred to programs, events and activities carried out within the museum premises and they can be further categorized into two: self-guided programs and staff-led programs.

The self-guided programs for school visitors at the MV museums were slightly different than the self-guided programs for its public visitors, and there were two ways in which the self-guided programs for school visitors were carried out. In the first, learning direction was set by school teachers through the dissemination of relevant information, tasks and learning materials prior to museum excursion, and the students embarked in museum visit with clear idea of the learning that they were supposed to be engaged in. The latter included the involvement of museum staff during the initial phase of the programs. Before students engaged in object exploration in the museum, they were required to attend an introductory session handled by the museum staff. Direction for the activity, learning materials and resources were given and they assisted the students in the self-guided activity for meaningful learning experience.

The staff-led programs were more comprehensive in nature. The findings derived from the analysis of documents revealed that the staff-led programs (or fixed programs) at the MV museums were designed for school audience from a wide range of visitor segments: from pre-school children, primary and secondary school students to students from tertiary institutions, and these programs were established with strong curriculum link. The education programs for students of primary and secondary schools developed addressed various topics and subjects offered which encompassed the learning of students of all year levels. All the education programs at the MV museums were pre-fixed programs,
the museums did not offer programs that were customized to individual teachers’ needs. However, teachers may request for customisations in some elements of the pre-fixed programs, in better meeting the needs of certain groups of students. The observed lesson by Peter Milan involved the elements of customisation based on teacher’s request. The extent to which the lessons were customized were dependent upon the negotiation between the school teachers and museum educators.

Programs were also developed to enhance student readiness and learning with regard to specific area of attainment, such as the programs offered for students pursuing certification of International Bachelorette (IB). The interview with Pam Weisz, the museum educator with the Immigration Museum who was under a consignment contract with the Italian government, highlighted the role of museum education programs in language education. Pam’s role at the museum was uniquely different than other MV program coordinators. Through the utilisation of immigration and migration stories, Pam delivered her lessons in Italian with the purpose of strengthening Italian language proficiency of the second language speakers who booked into her programs.

The staff-led programs also involved professional development initiatives for school teachers. The programs aimed to enhance teachers’ ethics, professionalism, knowledge and skills in specific aspect of teaching and learning.

In addition to fixed programs designed for students of tertiary sector, many of the programs developed at postgraduate level were the results of partnerships and collaborations with local universities. Most of these programs did not fit into the norm of staff-led programs, however the involvement of expert museum staff was necessary. The stakes of the program were higher as compared to other types of education programs offered at the museums, and the programs were of longer term in nature. Such collaborations encouraged research rigor, the offering of scholarships and master’s and doctoral degree levels, development of education resources and materials, and academic partnerships between MV museums and the universities. The University of Melbourne, Monash University and Deakin University were some of the universities which had collaborated with the MV museums in the past.

The off-site education programs are the programs and activities carried out outside the museums’ premises, and often these types of programs were organised for communities that were
geographically separated from the MV museums. The findings derived from the semi-structured interviews involving museum educators showed that the purpose of these Outreach Programs was to provide access to Victorians who experienced issues of visiting MV museums due to reasons ranging from geographical distance, logistics and age; and for certain outreach segments these include reasons pertaining to hospitalisation and imprisonment. Previously known as the Discovery Programs, the Outreach Programs also widened the museums’ audience segment and allowed the MV museums to target education programs for different Victorian communities each year. The findings obtained from the document analysis indicated that the education-based outreach programs were designed and executed for kindergarten, primary and secondary school students. For example, a mobile service to four-year old kindergarten students involving a skilful presenter in early learning and presented a session on topics ranging from *Australian Animals, Backyard Bugs, Dinosaurs and Fossils*, and *Ocean Wonders*. The off-site education programs also included *Learning Kits* in which museum-related objects and tools such as specimen, art materials, fossils and replicas were made available for teachers and schools to hire and use them in supporting student learning.

The findings based on the analysis made on MV’s annual reports from 2005/2006 to 2015/2016 indicated an increased focus given by the MV museums to its online resources. Resources and learning materials for MV’s online education programs connected to school curriculum had been made available online via the MV’s website for teachers and students’ reference and perusal. In addition, the organisations had established web-based resources that connected the museums to its school visitors through digital platform. For example, the *Digital Education* allowed the students to interact with museum educators and enabled the education programs for primary and secondary schools located in remote areas to be streamed live. Another example was the *Learning Lab*, a website with a focus on history and science developed in partnership with the Education Services Australia in support of the Australian curriculum.

### 7.4.2 The Education Programs at the NGV

The education programs carried out at the NGV were found to be similar to the ones offered by the MV museums. The gallery’s commitment towards museum education was demonstrated through its
on-site, off-site and online programs offered for both students and teachers ranging from kindergarten to tertiary level of education. The Department of Audience Engagement at the NGV, in addition to the development and implementation of education programs was also responsible for the gallery’s public programs.

The NGV’s education programs, on-site, off-site or online, were developed to engage learners of different age and level of learning, from early learners to kindergarten, primary and secondary school as well as university students. In addition to student audience, professional development programs were also offered to school teachers.

Most of the programs developed for children were designed to incorporate family engagement, some of the programs were in the form of an exhibition whilst others were exhibition-based. In 2014, the NVG Kids expanded its focus covering teenagers with tailored programs for 13 up to 17 years old. Programs such as Art Party and Creative Encounters programs were organised. Meet the Artists, a form of workshop-based programs, which introduced teens to industry experts and contemporary artists was also introduced to the teens (Council of Trustees of the National Gallery of Victoria Australia, 2015).

NGV School Programs were designed and implemented to address significant learning in relation to various areas of school curriculum. The content and delivery were designed to fulfil the curriculum related to the Victorian Early Years Learning and Development Framework, Australian Curriculum Victorian Essential Learning Standards (AusVELS), the Victorian Certificate of Education (VCE), the Victorian Certificate of Applied Learning (VCAL) and the International Baccalaureate curriculum (IB).

The topics covered in its education programs involved eight areas which included Arts; Humanities; English, Language and Literature; Science, Sustainability and Environment; Indigenous Australia; Languages an Intercultural Studies; Religion & Spirituality; as well as general and interdisciplinary topics (Museum Board of Victoria, 2016). The findings gathered from the interview sessions with the NGV educators showed that each of its educators was an expert person in at least one of the topics. They would be assigned to teach content in the area for the education programs that the students were booked into.
The NGV also provided negotiated programs in addition to the standard programs. The negotiated programs were developed in two ways: either elements of customisation were incorporated on the standard programs; or school teachers requested for the education programs to be developed specifically for the customized lessons. The findings derived from the analysis of semi-structured interviews involving Kate Collins and Emma Roberts detailed the advantages of the negotiated programs over the standard programs offered at the gallery. First, the negotiated programs allowed the museum educators to integrate the excursion into the curriculum and complemented the teaching in schools. With the standard programs, however, the educators did not have any information on how the lessons supported the teaching and learning process in schools. Second, the programs enabled the educators to target their teaching complexity to student level of ability more effectively. Third, the implementation of the negotiated programs provided a channel for the educators to obtain feedback in relation to teaching and lesson effectiveness. Finally, the implementation of the negotiated programs diversified the types of programs in which the museum educators were responsible for. Hence, the programs presented a challenge for the educators to constantly update their content and pedagogical knowledge.

Unlike the MV museums, the NGV did not incorporate a self-guided tour as part of their programs for school visitors. The student group guided tour had to be coordinated by the school teachers. The educators were not responsible for guided tours due to the gallery’s environment which would restrict effective communications between the tour group and the educators. In addition, managing a group of students in the gallery would be a challenge and hindered learning from taking place. The teachers, however, were advised to download the self-tour worksheet available on the NGV website and to distribute the worksheet to the students before the tour commenced. Task-focused tour would increase student engagement with the activity.

In addition to school programs, the NGV also embarked in professional development (PD) programs for school teachers, principals and educators. The tailored PD programs warranted for appropriately targeted content and delivery to the participants and the annual documents indicated the increase in the number of school visitors to the gallery as a results of the PD for teachers (Council of Trustees of the National Gallery of Victoria Australia, 2011).
Similar to the MV museums, the NGV’s collaborations with the tertiary institutions had paved ways for education-based programs offered across the gallery’s school audience segment. The findings from the document analysis showed that partnerships with the local universities such as the La Trobe University, for example, enabled the *NGV Summer School* program to be collaboratively delivered by the university academics as well as NGV curators, educators, conservators and artists (Council of Trustees of the National Gallery of Victoria Australia, 2014, 2015). The partnerships with the MV, La Trobe University and Charles Sturt University had led to the implementation of *Connected Learning*, professional development for teachers involving the delivery of inaugural accredited subjects. The collaboration with the Royal Melbourne Institute of Technology (RMIT University), Melbourne Conservatorium of Music, Melbourne Fashion School, Victorian College of the Arts (VCA) and TAFEs strengthened and diversified the nature of education programs offered at the NGV (Council of Trustees of the National Gallery of Victoria Australia, 2013).

The appointment of an Outreach Education Officer following a restructure of school programs in the NGV’s financial year of 2000/2001 enabled the gallery to give greater focus on the off-site education programs in providing access to the gallery’s collections, exhibitions and resources for Victorians in outer metropolitan areas and schools in other regional areas (Council of Trustees of the National Gallery of Victoria Australia, 2001). Through its *NGV Kids on Tour* program and its linkages with 13 regional galleries, six education programs were carried out in 30 participating venues (Council of Trustees of the National Gallery of Victoria Australia, 2016). *Gallery Visits You* involved introductory talks, exhibitions and collections brought to people in aged-care facilities and members of the community who were unable to visit the NGV (Council of Trustees of the National Gallery of Victoria Australia, 2014).

The analysis of NGV’s annual reporting documents found that the theme *online resources* became prominent in the gallery’s annual document since 2005/2006. The NGV website was viewed, on average, by 1.7 million online viewers every year and the website was redesigned and launched several times in June 2009 (Council of Trustees of the National Gallery of Victoria Australia, 2010) and in December 2014 (Council of Trustees of the National Gallery of Victoria Australia, 2015). Online
educational resources were made available to students and teachers focusing on a wide range of year levels, subjects, topics and focus.

The NGV actively worked on providing information to its online audience in innovative ways. These included the Broadband Innovative Project which involved the introduction of electronic whiteboard technology showcasing past exhibitions (Council of Trustees of the National Gallery of Victoria Australia, 2008); and a greater focus on social media, such as Facebook and Twitter, in reaching audience of younger demographics, as well as more prominent efforts in targeting younger visitors through comprehensive online media campaign in youth sites and blogs (Council of Trustees of the National Gallery of Victoria Australia, 2009). In 2009, the first NGV iPhone app was introduced providing subscribers with updated news and information about the latest happening in the gallery (Council of Trustees of the National Gallery of Victoria Australia, 2010). Other online initiatives include online forum, interactive online competition, access to the collections via NGV Collection, its Virtual NGV with artwork records portrayed online and online learning resources. In relation to online education resources, the NGV collaborated with various agencies such as the Department of Education and Training, Catholic Education Office, and the Victorian Curriculum and Assessment Authority in increasing its content validity for various education-based online resources (Council of Trustees of the National Gallery of Victoria Australia, 2007).

7.4.3 Summary

The findings pointed out that the nature of the education programs at the MV museums was similar to the ones offered by the NGV, in relation to the program types and the target audience. For both institutions, the school audience consisted of school students and teachers, and the education programs offered for the school students involved kindergarten, primary, secondary and university students through on-site, off-site and online programs. The on-site programs refer to the programs carried out within the museum establishment; the off-site programs, on the other hand, were programs carried out outside the museum premises and such programs include the outreach programs developed for individuals and communities in rural areas. The online education programs consisted of programs,
materials and resources that were disseminated to the school audience through the utilisation of the online platform.

The education programs implemented were with strong curriculum connection, carried out as an alternative to classroom learning and they were implemented to support the teaching and learning process in school. Therefore, the education programs at the MV museum and the NGV were developed based on the topics and syllabus contained in the national curriculum targeted for students of the respective year level.

Professional development programs for school teachers were also implemented and they were carried out to strengthen teacher knowledge, pedagogy and professionalism. In the MV museums, the content focus for professional development programs was determined by the nature of its museums’ collections. Similarly, the professional development programs carried out at the NGV were developed surrounding the gallery’s collections. The programs for teachers focused on arts, visual arts, art history and philosophy.

The off-site education programs were carried out for reaching the audience who had issues of visiting the MV museums and the NGV related to geographical distance and logistics. For both organisations, the off-site education programs were categorized as the Outreach Programs and they were developed to increase the museums’ connections with Victorians who resided in areas outside Melbourne. The implementation of this type of program also widened the school audience who perused the museums and its collections.

Both organisations were also committed in using the online platform to increase public access to the museum collections. In addition to online education materials and resources made available via both the institutions’ websites, the MV and the NGV had continuously incorporated technology in increasing the audience engagement and in diversifying the way the audience were connected to the education programs. The MV museums, for example, introduced Digital Education and Learning Lab. Digital Education allowed the students to interact with museum educators and enabled the education programs for primary and secondary schools located in remote areas to be streamed live. The Learning Lab, on the other hand, is a website with a focus on history and science developed in partnership with the Education Services Australia in support of the Australian curriculum. The Broadband Innovative
Project and iPhone app were some of the examples of the NGV’s technological innovations. The Broadband Innovative Project involved the introduction of electronic whiteboard technology showcasing past exhibitions (Council of Trustees of the National Gallery of Victoria Australia, 2008); the first NGV iPhone app was introduced in 2009 providing subscribers with updated news and information about the latest happening in the gallery (Council of Trustees of the National Gallery of Victoria Australia, 2010).

7.5 DISCUSSION OF FINDINGS: FOURTH RESEARCH QUESTION

The research question answered in this section provides a context of museum learning from the perspective of the museum educators. Specifically, the question explored the museum educators’ perceptions of museum education and how teaching and learning in the museum should be carried out. In addition, the museum educators’ opinions on the differences between museum education and formal education were also sought. The fourth research question is presented below.

How did the educators at the Museum Victoria and the National Gallery of Victoria distinguish museum education from classroom learning, and what were the educators’ expectations on teachers’ roles during museum visit?

In answering the above research question, the discussion of findings focuses on two specific aspects below:

i. Educators’ views on the differences between museum learning and formal education

ii. Educators’ expectations on teachers’ roles during museum visit

The data gathered from the semi-structured interview sessions with the museum educators served as a basis for findings in answering the research question.

7.5.1 Differences between Museum Education and School Education

The following findings discuss the educators’ views on what constituted museum education and how museum learning experience was different than formal learning in schools. It is interesting to
note that the educators’ personal view of museum learning contained strong relationships on the way they carried out their lessons. The following are the differences between museum learning and formal learning as described by the museum educators.

7.5.1.1 Nature of Teaching in Museums and Schools

A number of educators such as Pam Weisz, Alicia Martin and Rosita Hudson distinguished the teaching carried out in museums and schools due to the different foundation in which the lessons were built on. Museum education involved teaching and learning experiences that were developed around authentic collections. In schools, however, the teaching and learning process was based on the curriculum. According to Pam Weisz, learning in museums provided students with an opportunity to connect with history and collections through stimulating engagement with authentic objects. Weisz added that it would be difficult for teachers to replicate such environment in schools given the teaching workload that teachers had and the different types of subjects that teachers needed to teach.

7.5.1.2 Focus on Learning Experience and Focus in Knowledge Acquisition

Alicia Martin emphasized the different focus of the education programs that museums and schools had which led to the different ways in which lessons were carried out in these two settings. In schools, the teaching and learning process was implemented to assist student acquisition of knowledge, however this was different than the focus of the education programs in museums. The purpose of the implementation of the education programs was not designed for student understanding and the acquisition of knowledge, rather for students to make connections with the history or aspect of knowledge. At the Immigration Museum, added Martin, the focus of the education programs was for students to establish connections with real people through stories and narratives. Alicia also stated that the focus of museum education was on the experience whilst the schools focused on the curriculum.

Reese Webb, a senior educator at the NGV, provided a number of factors that supported the unique learning environment in museums and galleries, as opposed to learning in classrooms. According to Webb, museum learning promoted a more dynamic learning environment, more challenging and interesting as it aroused curiosity and engaged learners’ attention. Both the learning
experience in school and in museum involved an interplay of looking and talking to a certain degree. Museum, however, provided higher stimulation of objects due to its authenticity and its historical elements. The context of learning was also different. In school, students might be exposed to only one object. In the museum students were shown a range of related objects. For example, looking at an Egyptian mummy, the students might be looking at an Egyptian sculptor, carving, etc. Webb also added that museum provided narratives during object interaction that enhanced student engagement.

7.5.1.3 Knowledge and Prior Knowledge about Learners

One apparent difference between teaching in schools and teaching in gallery was the knowledge that teachers had about students. Emma Roberts believed that teachers were at an advantage, having exposure to the students over a period of time provided them with firsthand knowledge about student learning and their background, learning styles, learning preferences, etc. Educators, on the other hand, did not have access to such information.

Roberts added that the structure and preparation for lessons were also different. Students would normally have prior knowledge about schools unless if they were newly-enrolled students. However, most students who came for the excursion were first-timers in the gallery. Therefore, the educators had to structure their teaching to make these students feel more comfortable in a new environment.

7.5.1.4 Different Ways of Lesson Development

Lessons were developed differently at the museums and in schools. In museums, lessons were developed within a longer time frame targeted for larger and wider group demographics. Rosita Hudson, an educator at the Melbourne Museum, and Reese Webb, an educator at the NGV, indicated that lessons were also developed to fit different goals and purposes. For examples, some lessons were the outcome of permanent collections while others were developed specifically for temporary exhibitions. The education programs at the MV museums also were delivered through on-site, off-site and online platforms unlike school teaching which was dominantly carried out in classrooms.
7.5.1.5 Availability of Experts in Museum

Another difference between the two types of learning was the museum experts available who were responsible for developing programs that emphasized on museum collections in a manner that led to meaningful learning. Museum educators in both the MV museums and the NGV were qualified teachers with years of teaching experience. The knowledge of collections, subject matter, curriculum and pedagogy assisted the museum educators to develop programs that were unique to museum and difficult to be replicated in schools.

7.5.1.6 Teachers’ Limited Accessibility to Authentic Objects and Other Museum-related Resources

One strong attribute for museum education was the use of authentic objects in lessons and the employment of pedagogy that enabled for students’ active interaction with these objects. In schools, however, if objects were used to support lessons, these objects were hardly authentic due to teachers’ limited access to real objects. According to Pam Weisz, the educator at the Immigration Museum, this was one of the main reasons why teachers brought students to the museum.

7.5.1.7 Accountability on Student Learning

Weisz indicated the responsibility and the accountability that teachers had towards student learning was stronger than the museum educators. She added that the museum educators’ contact with the students was only during which the students engaged in the programs at the museum. Hence, the museum educators were responsible for student learning during the lesson. School teachers, however, were responsible for student learning for a given teaching and learning year, hence the accountability was more on the school teachers than on the museum educators. Alicia Martin, another educator at the Immigration Museum, stated that the learning in museum was only for 45 minutes for a single session, unlike in school where teachers had continuous contact with the students. Emma Roberts, the NGV educator, added that the short contact hour between the educators and students compelled the educators to thoroughly prepare their lessons in a way that ensured the accomplishment of the learning objectives.
within such a short period of time. The school teachers, however, had the flexibility to cover certain topics over a course of time duration.

7.5.2 Museum Educators’ Expectations on School Teachers

The museum educators participated in the study were in agreement that teachers’ active roles during the implementation of the education programs would lead to more effective teaching sessions. The educators were similar in their view that teachers possessed expert knowledge about their students and the curriculum, whereas the educators were experts in museum collections. The blend of knowledge about the students, curriculum knowledge and knowledge in museum collection would enable the museum educators to match their lesson complexity to the level of student ability more effectively; the recognition of prior knowledge would assist the educators to delve into topics that were relevant to student learning. However, this could only be made possible if teachers cooperate with the educators in lesson delivery.

Reese Webb and Emma Roberts were elaborative in teasing out their expectations on teachers’ roles in program delivery. Both educators shared similar view when they described that school teachers often viewed themselves as external to the process of program implementation at the museums. This resulted in teachers assuming a passive role throughout the duration of lesson. To the educators, teachers’ information of student learning was valuable to the educators, and sometimes during lessons, Roberts had hoped that teachers could prompt some learners to answer certain questions or be more proactive. She felt that some teachers came to gallery with the expectation that the educators would took over teaching responsibility completely without the need of teachers’ collaboration during lessons.

Webb and Roberts stressed the importance for teachers to use the opportunity to observe the educators’ teaching and their student learning while the sessions were ongoing. Roberts added that teachers should use the data from the observation to enhance their own knowledge and teaching practice. There were certain approaches and strategies that the educators employed which could be re-enacted in classrooms, particularly in object-based related strategies. Therefore, a museum visit would not just be a learning experience for students but for also for teachers.
7.5.3 Summary

The findings discussed in this sub-chapter focuses on the museum educators’ views on what constituted museum’s teaching and learning process and in what manner they differed from classroom teaching and learning. In addition, the discussion also addressed the findings in relation to the museum educators’ expectation on the roles of teachers during museum visit. Seven differences between museum teaching and learning process and classroom teaching and learning were identified based on the findings derived from the semi-structured interview involving the museum educators. The museum educators’ expectations on teachers’ roles during museum visit were driven by the belief that teachers’ knowledge of their students was important in assisting the educators to delivery lessons at the complexity level that was appropriate to student level of ability.

7.6 DISCUSSION OF FINDINGS: FIFTH RESEARCH QUESTION

The fifth research question focuses on gathering findings which pertain to the education programs carried out by the MV museums and the NGV, in specific, gathering data that explains the development, management and evaluation of education programs. The research question is stated below:

How were the educational programs developed, managed and evaluated in the Museum Victoria and the National Gallery of Victoria?

Based on the research question, the discussions of findings in the following sub-sections focus on three administrative aspects of education program which involve program development, program management and program evaluation. The findings pertaining to program development uncovered the process of which the education programs were developed. The management of education programs shows how bookings of the education programs were carried out and the findings based on the data gathered from the museum managers were valuable in providing insights of the development, management and evaluation of education programs in the MV museums and the NGV. The following are the discussions of findings for the fourth research question.
7.6.1 The Development of Education Programs

The findings derived from the semi-structured interviews with the museum managers and museum educators detail the process of program development, the aspects involved, and the considerations made by program developers for each aspect. At the MV museums, programs were developed by the program coordinators.

The process of program development discussed for both organisations below is categorized into aspects rather than stages. Even though the development appeared to be sequential in nature, some of the aspects discussed in the findings were carried out simultaneously in program development.

7.6.1.1 Program Development at the MV Museums

The development of education programs at the MV museums was the responsibility of the Program Coordinators who were attached to the Department of Education and Community Programs. The MV allocated two days in a year for the program coordinators across all the MV museums to plan for programs. This was then followed by planning updates which were carried out every two weeks.

The education programs developed at the MV museums were based on permanent collections, temporary exhibitions or the products of partnerships and collaborations with the private agencies. For every on-site education program, an online education program to support the on-site program would also be developed. The online resources assisted the teachers to prepare their students with sufficient content prior to museum excursion; and provided teachers with materials to continue with lesson even after the excursion was concluded.

The first aspect to program development at the MV museums was the assessment of needs. The needs assessments carried out involved the analysis of past programs and linking the curriculum with the museum experience and the expertise at the museum. This allowed for the formulation of learning objectives of the programs to be offered.

Establishing connections with the curriculum ensured the significance of the programs offered and in meeting the needs of teachers and students in schools. Rosita Hudson, the program coordinator with the Melbourne Museum explained that the Department of Education and Early Childhood had outlined key strategies about aspects of curriculum for which the museum educators used as their
guidance. Peter Milan, the program coordinator at Scienceworks, described the domains in which the programs must be based on which included the cognitive, affective and psychomotor domains. Rosita Hudson, the educator at the Melbourne Museum, explained that if the past programs were to be continued, then a discussion would take place among the program coordinators to better improve the programs.

Susan Parker, the Public Program and Humanities Manager at the Melbourne Museum, stated that the process of program development aligned with the budget application by each department at the MV museums. Developing program in line with budget application ensured that the developed programs matched with the available resources.

The second aspect to program development involved examining the content focus and the learning experience. This included the considerations for pedagogical approaches and strategies that would best showcase the objects used in lessons; the resources required; the learning engagement anticipated by students and teachers; and students’ misconceptions about a particular topic.

The third aspect required the structuring of basic ideas and information into an education program. This called for the determination of learning outcomes and structuring these outcomes around five key areas: knowledge and understanding promoted by the program; the skills students would acquire from the program; the attitudes and values inspired; the enjoyment and creativity; and finally, the behaviour and progression of learning instilled. Hudson stressed the importance of making sure that program coordinators and presenters were clear of the five key areas in ensuring that the program was carried out in standardisation.

The fourth aspect in program development is the determination of resources and the process was carried out by looking at the resources required in the implementation of programs and the available resources in the department as well as in other departments within the museums. According to Parker, reusing existing resources had been the priority in the execution of education programs at the MV museums. An education program in the past might use the same object that would be in need for a current program, therefore one of the reasons for analysing past programs in the development of a new one was the identification of resources. If the resources required in the implementation of new program was not available, then the Department of Education and Community Programs would contact the
internal staff, such as the Preparator Department to prepare the materials. The application for tools and materials for teaching was put forward up to six months in advance. Hudson and Parker detailed that in the event when the preparators were pressed for time or occupied with other projects, the department would recommend an external person to carry out the task.

At the MV museums, program evaluation was one of the key aspects to program development. Therefore, program evaluation was carried out in concurrent to program development. The fifth aspect detailed the evaluation tool and mechanism, and the program coordinators would have a discussion with the Evaluation Team in the department in developing an effective evaluation that would garner data for program improvement.

The sixth aspect to program development was the program trial. In the trialling process, the museums would invite curriculum bodies, professional teacher association or sought school involvement in measuring the program effectiveness and the main purpose was program improvement. Program trial is also an evaluation mechanism before the program was introduced to the school audience.

The final component in program development involved staff training. This was essential in ensuring standardisation among the different coordinators and presenters who carried out the teaching sessions. The training also addressed specific details in relation to each program implementation: the activities, the duration for each task completion; the materials and equipment required; seating arrangement; etc.

Although, in essence, the process of program planning at the MV museums followed through seven different aspects, the planning at Scienceworks involved an additional component. Due to the nature of the museum which inspired to inculcate the love for science and in enhancing the communities’ scientific knowledge; the content focus of the education programs at Scienceworks was fact-based. Therefore, the development of education programs at the museum would include content validation, in which, the content of the education programs would be scrutinized and approved by content expert before they were officially introduced as the education program. If the museum did not have any expert in the content area addressed by the education program, then the museum would locate
and sought assistance of external expert. All the education programs developed at Scienceworks were required to go through this process before they were formally implemented.

In addition to content validation of education programs, the programs developed at the Scienceworks museum must be represented by the three domains of learning: in specific the cognitive domain, affective domain and psychomotor domain. The information by Peter Milan, the program coordinator at Scienceworks, provided a detailed description of these domains. According to Milan, the learning outcomes were knowledge and understanding (cognitive), attitudes and values (affective), enjoyment and creativity (affective) and skills to practice (psychomotor). Any programs developed at Scienceworks must be able to tap into these domains.

Julie Howard, the Education and Community Program Manager for Scienceworks, explained the reactive nature of program planning at the museum. The department carried out its education programs depending upon the space available, and the availability of space was dependent upon the nature of temporary exhibitions carried out. If the exhibition was small and medium scale in nature, this would allow the department to utilize the remaining area in the exhibition hall in setting up presentation corner or exhibition. However, if a particular exhibition was larger in scale and the remaining space was limited, then the department had to creatively think of a suitable education programs to be carried out within the confining space.

### 7.6.1.2 Program Development at the NGV

The development of standard or fixed programs at the NGV was carried out six months ahead. Unlike other museum organisations which planned on an annual basis, the temporary exhibitions at the NGV were finalised twice a year. Hence, the development of education programs was implemented every six months in congruence with the temporary exhibitions. Tina Andrews, the NGV museum manager participated in the study, explained that it would be difficult to carry out program planning longer than the six months’ frame because the information about a particular exhibition would be limited. According to her, “People would like to do a year ahead, reality is we do not know enough about exhibitions to do that. So, we may know the exhibitions that are coming, and we might have a checklist but that’s different from understanding what the exhibition has to offer that links with school
curriculum. So, we really... got to research, read it... Because we have 22 changing exhibitions and 65,000 works in the collection and 2 buildings and 52 galleries, resource-wise you can’t work much more than six months ahead.”

The program development at the NGV entailed a number of aspects. The first aspect involved establishing a list of education programs to be offered. In carrying out this process, a program planning meeting was held where all the staff identified the existing programs and the temporary exhibitions that were going to be carried out at the gallery.

The ideas behind program development were fuelled in in several ways. From time to time the NGV organised focus group consisting of school teachers to identify schools’ current need, curriculum need, teachers’ demands and the best way in meeting the demands. In addition, the NGV was also involved in benchmarking process with the local, inter-state and international galleries. Partnerships with the education agencies such as the Department of Education provided information in light of the current trends in education, changes and innovations that needed to be introduced into the education programs.

This was followed by assigning a program to a team leader or coordinator which would then work in establishing the learning objectives or the learning outcomes for the program, and in doing so ensuring that the outcomes aligned with the curriculum. There were a number of factors considered along in this second aspect to program development, and these included the NGV’s vision and mission, its strategic planning strategies, teaching and learning practices, learning priorities, exhibition content, priority projects, stakeholder requirements, criteria, objectives and accountability.

The third aspect involved content development. The development of content often required the educators to embark on research and finding information that would support the content. This could be in the form of reading, attending curatorial presentations, attending professional learning, etc. The content of a particular education program was also determined through the considerations of learning priorities, the learning objectives, the theme and content of exhibition.

The fourth aspect of program development was a focus on audience development. Within this was the consideration on how the program could widen the school audience and to position the program so that it appealed to schools which have never participated in the gallery’s education programs. The
strategies developed should support the NGV’s strategic planning and its business plan on audience
development.

The fifth aspect involved the development of online materials on the same programs in enabling
the NGV to reach students of remote schools. Determination of resources and materials to support the
education program is the sixth aspect to consider in program development. In this respect, the
Department of Education and Public Programs worked very closely with other departments within the
gallery. These included the curatorial, conservation and exhibition management which were the key
areas in supporting the development of education programs.

Training of staff was the final aspect in the development of education programs at the NGV. The
training was a mechanism in ensuring that the same programs delivered by different educators
across different audiences was implemented in similar manner.

The development of programs was framed by models and guidelines prescribed by the
Department of Early Childhood Development and Education (DEECD). These included the Early Years
Framework, E5 Instructional Model, Digital Learning Statements and the Education Blueprint. The
gallery also based its education programs on contemporary research and the most recent theories in
teaching and learning practice.

7.6.2 The Management of Education Programs

The discussion of findings in this sub-section looks at the managerial aspects of the education
programs. Specifically, the discussion focuses on the bookings of the education programs by school
teachers and the allocation of teaching assignment to the respective museum educators. This discussion
in this sub-section also fills up the gap between program development (discussed in the previous sub-
heading) and program implementation (discuss in the findings for the sixth research question).

7.6.2.1 The Management of Education Programs at the MV Museums

The education programs, after having gone through a stringent process of program
development, were advertised to teachers and school administrators through email messages and
newsletters, and to public through the MV websites. The bookings and enquiries of the education
programs at the MV museums were managed by the Booking and Enquiry Department. The department was separate from the Department of Education and Community Programs and also handled bookings and enquiries. Very little information was required from the teachers at the point when booking was made and this information pertained to the topic booked, students’ age and year level, and the school from which they were from. The timetabling task was the responsibility of a senior program officer at each MV museum and the task was carried out two weeks prior to the teaching week. The timetable would be released during the first week which provided the educators with a two-week frame to plan and prepare for their lessons.

The timetabling responsibility was a bit more complex at Scienceworks, given the various types of education programs existed in the museum (the standard programs, presentations, experiments and exhibition-based programs, in addition to the Planetarium shows and the shows at the Lightning Room).

The size of the museum did not allow for all types of the education programs to be carried out simultaneously. Therefore, each type of the education programs could only be scheduled for the school groups for a certain period of time. Science shows were carried out in the morning until the afternoon; general viewing sessions in which students moved around exhibits that they were booked into took place at 10 am and 12 noon daily, 11am and 1pm were allocated for the teaching sessions and students were not allowed to carry out tours around the exhibits during this period. According to Pennie Stoyles, the program manager for Scienceworks, the Scienceworks building had outgrown its capacity. The building was initially built to accommodate 250,000 visitors a year but the museum had been receiving 500,000 visitors annually, about 100 percent more of its intended capacity. This had urged the museum staff to adapt reactive planning and to work within the resources that the museum had. Pennie explained that the booking staffs were well-versed with the schedule and the nature of the education programs and would effectively advice teachers who called on the appropriate programs for the students.

7.6.2.2 The Management of Education Programs at the NGV

At the NGV, bookings and enquiries were managed by the gallery’s centralised staff who also dealt with enquiries for other programs in the gallery. Bookings for the education programs were closed
two weeks before the actual session. The timetabling task was carried out by Reese Webb, a senior educator who participated in the study.

The timetable which contained information related to teaching assignments would be released midweek (either on Tuesday or Wednesday), a week before the actual teaching sessions. According to Webb, the NGV educators had three days to plan and prepare for their lessons and they would plan immediately after the timetable was released. Webb added that the educators planned individually for pre-fixed education programs and would carry out their planning in groups if they were assigned to workshop-based sessions.

The allocation of sessions was based on the educators’ area of expertise. According to Roberts, each educator in the gallery specialized in six areas. The 12 educators in the gallery would collectively represent all the themes represented by the gallery’s collections.

As a senior educator, Webb also oversaw the implementation of the education programs and monitored the consistency and coherence of the implementation. Webb stated that it was important to ensure the consistency of educators in delivering the same program for different student groups. It was also a common practice by the schools to attend the same program across a number of days involving a different group of students each day. Therefore, it was pertinent to make sure that the same educators would be able to stay consistent across groups.

7.6.3 The Evaluation of Education Programs

The following are the findings in relation to the evaluation of education programs carried out at the MV museums and the NGV.

7.6.3.1 The Evaluation of Education Programs at the MV Museums

The evaluation of education programs at the MV museums were carried out in two phases: during program development and after program implementation. The newly developed programs had to undergo a trialling process in which the program would be tested out on the targeted groups. Following the trial was a debrief session between the program developer and the teachers. The trial is a form of evaluation carried out to gather teachers’ feedback for program improvement. This would
ensure that the new program was effective in reaching its learning outcome when it was introduced to the public.

Only some programs were nominated for post-program evaluation at the beginning of every term and the evaluation was authored and carried out by the Marketing and Research Department of MV. The evaluation survey was distributed to the school teachers on the day of their excursion and the data was then collated and analysed for results. The evaluation helped the department to identify room for improvement of the evaluated programs. The data from the evaluation informed the kind of improvement that needed to be carried out. Changes were based on consultative process.

7.6.3.2 The Evaluation of Education Programs at the NGV

The findings for program development at the NGV were derived from the interview data with Tina Andrews. As the Head of Education and Public Program Department at the gallery, Andrews was responsible for the implementation, delivery and evaluation of facilitated experiences and interpretation of the NGV collections and exhibitions. Andrews explained that there were two ways in which the education programs were evaluated.

The first evaluation tool involved the use of a standard evaluation form that teachers and students could fill up as a way of channelling their feedback. The evaluation form was made accessible to teachers and students who were booked onto the program.

The second evaluation was more extensive in nature however the evaluation only involved selected education programs. Andrews explained that the NGV School Unit carried out up to 5,000 sessions or classes per year. Evaluation process that included only nominated programs was more cost-effective, manageable and practical.

The data gathered from the evaluation was analysed by the administrative staff who would then prepare a report of the feedback. The program developers and educators would scrutinize the information presented in the report for improvements. Improvements were in the form of modification of program, changes in delivery strategies or educators seeking advice or training.
7.6.4  Summary

The research question explored aspects related to the development and evaluation of education programs carried out at the MV museums and the NGV. The process of program development was based on the interview data with the museum managers.

The program development in both institutions was found to be quite similar in the process, in the aspects considered and in the education documents referred to. Both organisations followed through seven aspects in the planning and development of the education programs with a number of differences. Several aspects to program development were found to be pertinent to the MV and the NGV. In essence, the connections between the education programs with the curriculum framed the process of curriculum development. Both organisations were found to work closely with the key learning areas as well as teaching and learning models prescribed by the Department of Education and Early Childhood Victoria. Most importantly, the museums referred to the curriculum and identified the most updated teaching and learning strategies. In addition, both organisations referred to the models and education guidelines produced by the Department of Education.

The evaluation process in both organisations was slightly different. At the MV museums, evaluation of the newly developed programs was carried out as a measure for program improvement before the education programs were formally introduced and implemented. Evaluation of selected public programs and education programs was also carried out at the beginning of every term. The evaluation helped the department to identify room for improvement of the evaluated programs. The data from the evaluation informed the kind of improvement that needed to be carried out. Similarly, the NGV also implemented evaluation on selected education programs. The NGV believed that the evaluation process that included only nominated programs was more cost-effective, manageable and practical. Teachers and students were provided access to evaluate the education programs that they participated in by responding to a standard evaluation form.

7.7  DISCUSSION OF FINDINGS: SIXTH RESEARCH QUESTION

The sixth research question explores the planning and the implementation of the education programs by the museum educators. The sixth research question is presented below:
How were the educational programs planned and implemented by the museum educators in the Museum Victoria and the National Gallery of Victoria?

The findings in relation to the lesson planning were garnered from the analysis of the semi-structured interview data involving the museum educators. The findings related to lesson implementation were generated from the analysis of semi-structured interview data and teaching observation data of the museum educators. The discussion in this sub-chapter focuses on the practice of lesson planning in relation to four specific aspects:

i. Approaches to lesson planning;

ii. Prior information available;

iii. Linking lessons to curriculum; and

iv. Considerations and preparations in lesson planning.

The discussion of lesson implementation in the following sub-chapter is structured based on the following aspects:

i. Information of the education programs

ii. Nature of education programs at each museum

The following is the discussion driven to answer the fifth research question.

7.7.1 Lesson Planning

The lesson planning that took place in the MV museums and the NGV was reportedly different from the ones prepared by school teachers. In schools, teachers documented the intended learning outcomes and sequence of lesson prior to the actual lesson. Though the museum educators for the MV and the NGV approached their lesson planning differently, the practice was found to vary between the three MV museums.

The following are the practice of lesson planning by the museum educators at the MV museums and the NGV. The findings are structured in accordance to four aspects of lesson planning: approaches to lesson planning; prior information available; linking lessons to curriculum; and considerations and preparations in lesson planning.
7.7.1.1 Lesson Planning by the MV Educators

The following discussions represent the practice of lesson planning by the MV educators.

7.7.1.1.1 Approaches to Lesson Planning

The practice of lesson planning at the MV museums differed between museums. The development of education programs at the Immigration Museum was the responsibility of Alicia Martin, one of the museum educators at the museum, and all the staff with the Department of Education and Community Programs were involved in lesson delivery. Martin prepared the lesson plans and the sequence of the lessons before they were being handed down to the Program Officers and the presenters. She was also responsible in the training of the presentation of these programs as one of the measures in ensuring consistency across presenters. Because lessons were prepared by Martin for other staff members to present, detailed lesson plans were prepared. Pam Weisz, another educator at the Immigration Museum, prepared her own sequence of lessons due to her unique position in promoting Italian language and being the only one at the museum with such responsibility. According to Weisz, she had a written document which detailed the flow of the activities and the topics of the lessons, but they were not prepared in a detailed-like manner replicating lesson plans. In preparing for lessons, she tried to gather opinions and feedback from school teachers. She also identified the most current trends in Italian teaching and tried to incorporate those in her lessons.

The educators at the Melbourne Museum, however, did not have a documented plan for their lesson. The absence of documented lesson plan did not indicate the lack of planning. The educator at the museum interviewed for the study, Rosita Hudson, incorporated the planning for education site in her lesson planning more than the content delivery. Hudson would visit the gallery used in her lessons and identified her standing point while teaching, marked up the gallery space where the group would be able to hear and participate, and planned for the appropriate seating area. Hudson admitted that the educators often had to carry out lessons on similar topics multiple times each year that they only needed to visualize the sequence of the lesson prior to its implementation.

At Scienceworks, lesson planning was less rigorous because comprehensive information had been incorporated into the education programs during program development phase. The education
programs contained detailed information in every aspect of its implementation to ensure standardisation in lessons delivered by the coordinators and presenters. In addition, the program coordinators and presenters met and discussed the best way to approach education programs based on best practices and current trends in education.

The findings based on the interviews with Rosita Hudson, the program coordinator with the Melbourne Museum, and Peter Milan, the program coordinator with the Scienceworks, indicated that work was being carried out to develop a standard model for program planning across the MV museums in ensuring consistency in education plans of each program coordinator.

7.7.1.1.2 Prior Information Available

Effective lesson planning is the outcome of sufficient information about the lesson to be implemented, the learning of groups who booked into the program and the students’ ability levels. However, this was not a luxury for the museum educators. Very little information about student learning was provided prior to student visit.

At the MV museums, the educators were supplied with information with regard to school name, year level, group size and the programs which the students were booked into. The educators, however, had a general list which guided them to infer certain type of information from the nature of the booked programs. This included where the students were in their learning of the curriculum as well as their age group. When asked further about how the educators made sense about the unit that the students have done in schools, Hudson responded, “I guess you can make an assumption that if they’re here for bugs or for dinosaurs they’re probably doing a unit on it. They may be somewhere at the start of the unit, the middle or in the end of the unit, depending on how they fit in.” More information would be gathered when the students arrived, and the educators were presented with the opportunities of conversing with the teachers. Primary questions asked were in relation to whether the students had covered the topic which they were about to learn and the extent to which it was covered; students’ levels of ability; and teachers’ expectations from the program. Milan, the educator at Scienceworks, indicated that the quick information would still enable the educators to customize the education programs that the educators were about to deliver to a certain extent.
7.7.1.3 Linking Lessons to Curriculum

Linking lessons to the curriculum was found to be one of the most important considerations in lesson planning by the MV educators. The organisation viewed having connections to the curriculum as integral to the education programs.

The educators were discovered to carry out the process of linking lessons to curriculum based on their own established procedure. The educators at the Immigration Museum considered three aspects in planning for their lessons: how well did the program fit into the curriculum requirements; how could the objects be manipulated in a way that promoted learning; and what experiences did the students have prior to excursion which could be potentially used to heighten the learning experience. Alicia Martin emphasized the importance of providing museum learning experiences that were different than what was offered in schools. Hence, learning experience that was unique to museum was one of the aspects which drove lesson planning in making the connections to the curriculum.

Similarly, Peter Milan was also guided by three aspects in making the link between his lessons and the curriculum. First, lessons must meet the teachers’ and curriculum needs. Second, the lessons met the intended learning outcomes which could be further specified into four categories (knowledge and understanding, skills to practice with, attitudes and values; and enjoyment and creativity). Third, they met the identified learning styles that were trying to incorporate.

The MV educators were with the belief that making the connection was not difficult. Hudson, the educator at the Melbourne Museum, indicated two factors which supported the task of linking the developed lessons to curriculum. First, the emphasis on object interaction as a stimulus to learning within museum context was consistent with the curriculum aspiration that was built on constructivist orientation. This aspect of the curriculum was manifested in all education programs offered at the museum which included the element of object-based learning. Second, the DEECD had established key strategies of aspects emphasized in curriculum and these were used as guidance by the educators in the preparation and implementation of their teaching sessions. Hudson also added that the museum as an entity offered programs that were consistently aligned with the needs and requirements of the curriculum.
The process of lesson planning at the MV museums was carried out around five key areas which represented the intended learning outcomes of all education programs, in addition to curriculum links. The five key areas were knowledge and understanding; the skills learnt; the attitudes and values; the enjoyment and creativity; as well as the active behaviour and progression.

It was found that the MV museum educators’ beliefs about what construed museum teaching influenced the way they planned and implemented their lessons. Hudson, for example, allocated her lesson planning to students’ assessment of needs and linking the needs to the kinds of experiences that she wanted the students to have at the museum. Hudson listed the considerations that followed: identification of the group’s past learning; the resources available; selection of best pedagogical approaches that were age appropriate; misconceptions that surrounded the topic; identification of student interests and preferences in learning; anticipation of what students wanted to experience from their visit and what the teachers wanted the students to experience. She would then carry out a brainstorming session with the other educators in ensuring consistency and coherence in lesson delivery. The next step involved preparation of materials and this included working with the Imaging Team in the production of images; the Preparators’ Team if the lesson required the use of models; or working with the in-house designers in producing a particular design. Hudson stressed that a high amount of work had to be put in even for a simple 30-minute program.

Alicia Martin emphasized the integration of object-based learning (OBL) to museum learning experience. She said that it was important for the museum educators to understand that the teaching and learning sessions at the museum was not similar to the way the process was carried out in the classroom. Martin believed that the students have to engage in lessons that were different, fun, exciting and required involvement with authentic objects that were not available in schools. Therefore, Martin’s lessons were planned around these aspects.

The lesson planning at Scienceworks was framed by three main aspects: the curriculum; the five key areas (intended learning outcomes) shared by all the MV museums; and the teaching style. At the museum, an education officer would be assigned for each of the temporary exhibitions to develop education programs in line with the theme of the exhibition. The considerations involved in the
development of education programs for this purpose included the development of the learning outcomes and the establishment of link with the curriculum. The Scienceworks educators needed to ensure that their delivery did not deviate from the validated content due to the nature of the education programs at the museum which dealt mainly with factual information, scientific findings and procedures.

The personnel at the Department of Education and Community Programs at Scienceworks were with unique tasks and responsibilities, and they functioned quite differently than the personnel at the other two MV museums. At Scienceworks, the implementation of the education programs was the responsibility of the program officers, program coordinators and presenters. In addition to lesson delivery, the program coordinators were also responsible in training the presenters for the science shows, and each presenter oversaw the props, equipment and the consumable for the shows. The presenters would report to the program coordinators if they were running low on the equipment and props and the conditions of the materials. In the department, one of the staff members would also assume the role of an official shopper and was given a couple of hours a week to go shopping for products required by the other educators.

7.7.1.2 Lesson Planning by the NGV Educators

The way lessons were planned at the NGV depended upon the type of programs that students were booked into. The NGV carried out standard education programs and negotiated education programs and planning for both types of lessons were different in terms of the level of customisation of the content and delivery of the education programs, as well as the level of interaction with the teachers. The following are the findings in relation to aspects involved in lesson planning practice at the NGV.

7.7.1.2.1 Approaches to Lesson Planning

It was found, in general, that the NGV educators carried out their lessons without the use of written lesson plans. The Department of Audience Engagement did not enforce the use of documented lesson plans and the educators were given the freedom to carry out their planning based on their own preference. At the NGV, lesson planning began after timetable for teaching sessions was released (usually on Tuesday or Wednesday) indicating the teaching sessions for the upcoming week. The NGV
educators would either plan individually (teaching sessions) or in group (workshops). At individual level, the educators had the freedom and flexibility in deciding the styles and direction of their teaching sessions. However, the NGV emphasized consistency across lessons taught by multiple educators.

For the NGV educators participated in the study, years of experience teaching similar lessons provided them with clear understanding of the aims and objectives needed to be achieved in every lesson. In the case of Emma Roberts, Kate Collins and Linda Rogers, they would form a sequence of how the lessons were going to unfold mentally and be clear of the aims and objectives of the lesson.

There were occasions, however, in which detailed lesson plans would be developed and these were usually due to factors such as having to teach a particular lesson on a new topic or having to use an artwork for the first time. In addition to the preparation of lesson plans, the educators also had to carry out research before the lesson could be implemented successfully. For example, Collins did not require lesson plans to assist her lessons. However, this would be different for programs that were relatively new and programs with high level of complexity in the topics and the artworks used. In addition to the preparation of lesson plans, Collins would also prepare teaching notes and carried out research to assist her in her teaching. According to Collins, high degree of research was necessary if the artwork was not something that the educators were familiar with. This research was done by looking at related publications, books and the NGV catalogues, or by talking to curators, carrying out online search or asking her colleagues. Rogers admitted that she did prepare lessons plans in her early years as the NGV educators. She would develop lesson plans for lessons with a new area or focus with a lot of preparation, particularly reading.

The implementation of the negotiated programs required more efforts to be put in by the NGV educators as opposed to the implementation of the standard programs. The negotiated programs involved higher level of planning so that the implemented lessons could be tailored successfully to meet students’ learning needs and teachers’ expectations.

7.7.1.2.2 Prior Information Available

The NGV educators believed that the more information they were provided about the learners who were booked into their programs, the more effectively they could tailor the lessons to meet the
learners’ needs. The NGV educators, however, often had to infer about student learning based on the limited information available from the bookings. The need for prior information varied, and the educators were only provided with information related to the topic that the students were booked into and the students’ age group. Hence most of the time the NGV educators depended on their intuition and experience in deciding on what kind of preliminary information was important to have.

The nature of information required was dependent upon the type of programs the students were booked into. If it was a pre-fixed program, very little information would be required. However, if it involved more sophisticated programs such as tailored programs to specific audience, more information was required from the teachers. This involved personal conversations between the educators and the teachers normally either by phone and/or email communication.

The negotiated programs involved a high degree of communication between the educators and the teachers, particularly in determining the lesson structure. These kinds of programs normally targeted the curriculum specifically. Though teachers were encouraged to talk to the educators and discuss their preferences, most of the negotiated programs were initiated by the educators. The educators were responsible for putting the suggestions up and negotiating around the suggestions with the teachers.

7.7.1.2.3 Linking Lessons to Curriculum

Similar to the practice of the MV educators, making a connection between the lessons to the curriculum was important. Making this link was found to be the first consideration in lesson planning by the NGV educators. In the interview session with Emma, she stressed the importance for educators to acquire vast knowledge about the NGV collections. The knowledge then would guide in linking lessons to the curriculum, the gallery’s aims and objectives, theories of instructional practice and in meeting what the schools wanted to achieve. Rogers followed through four aspects in her lesson planning. She would first ensure that her lessons linked with the curriculum. This was then followed by the artwork selection that would highly engage the students. She would also develop her content at a level that would match student level of ability. Finally, there was consideration for variety (in techniques and strategies, activities) in her lessons.
Based on the interview sessions, Collins highly emphasized the importance of negotiated programs over the pre-fixed programs offered at the NGV. The negotiated programs were with high degree of curriculum relevance as they allowed for customisation of content in meeting teachers’ needs. According to Collins, the negotiated programs allowed for the lessons to be connected with the pre-visit and post-visit lessons carried out in schools, and this positioned the education programs at the gallery as an integral aspect to teaching and learning in schools. The negotiated programs also increased the degree of communication between school teachers and the educators, thus providing opportunities for the educators to gather as much information as possible from the school teachers’ prior lessons. This also enabled the educators to identify learning needs and the chance for them in meeting these needs.

7.7.1.2.4 Considerations and Preparations in Lesson Planning

The findings derived from the semi-structured interview data involving museum educators indicated that lesson planning was carried out based on considerations of multiple factors. In addition to linking the lessons to the curriculum, the NGV educators would also weight up a number of considerations.

A strong theme for artwork selection was derived as one of the most important factors considered. This was particularly so because it was common for the NGV educators to utilize a number of artworks in a single teaching session. The consideration for artwork selection also revealed the educators’ preferences in teaching and their style in implementing lessons with an object-based orientation.

Emma Roberts selected artworks with relationship to one another for her lessons. Hence, her selection of artworks would be guided by the theme that the artworks represented. Roberts stressed her speciality in teaching in context. She used the different artworks in trying to establish a link and developed students’ cognitive process, particularly in analysing how one artwork connected to the other.

Similar to Roberts, Rogers also preferred to choose artworks with connections to each other. The different but connected artworks were used to guide student thinking, enabling them to compare and contrast between the artworks. According to Rogers, even with the use of the same artwork, the
educators needed to consider various factors particularly when it was employed for different themes, topics and year levels.

Kate Collins’ selection of artwork was usually the outcome of her conversations with the school teachers. Her choice was normally guided by the teachers’ recommendations and suggestions in order to link her lessons with what the students were taught in the classroom. However, Collins indicated that teachers’ recommendations would depend on their knowledge of the collection. There were cases in which the decision for which artwork to use was entirely up to the educators. Her artwork selection would also influence by other factors. Collins preferred to try out new way of teaching and experiment with a different artwork. She would normally switch to a different artwork if she had to carry out the same lesson next day, or tried out an artwork which was previously used in a different context. Another consideration was the iconic artworks in which their use would be insisted by the teachers. According to Collins, artworks such as the Weeping Woman by Pablo Picasso, the El Diablo paintings and the Banquet of Cleopatra by Giovanni Battista Tiepolo were often requested by the teachers to be integrated into the lessons because they were well known and also because the NGV housed these original artworks. In addition, the educators also considered the temporary exhibitions that the gallery had from time to time as one of the venues for the student-led and staff-led tours especially if the exhibitions were free of charge.

In addition to the artwork selection, similar weight of consideration was allocated for the gallery’s mission statement, information about the students, and matching the content of the lessons to students’ age groups.

### 7.7.2 Lesson Implementation by Museum Educators

The findings showed that the way lessons were implemented at the Melbourne Museum, Immigration Museum, Scienceworks and NGV were different due to the nature of the collections at each museum and its general focus. Even though the Melbourne Museum, Immigration Museum and Scienceworks were governed by the MV through a networked-based organisation, the types and focus of their education programs differed. Similarly, the educators at each museum carried out their lessons with a slight differentiation. Table 7.1 presents the information with regard to the nature of the education
programs offered by each museum in the study. The information was generated based on the findings from the interview sessions with the museum managers and museum educators.

The table encapsulates the different types of education programs carried out by each museum. Of the three MV museums, Scienceworks was found to offer programs that were more diverse as compared to the other two museums, with curriculum-linked lessons, demonstrations and science shows. The museum also organised programs for school audience during weekdays and weekends. The Lightning Room shows were developed based on the topic electricity and were linked to the curriculum of primary school, middle school, secondary school and tertiary level.

<table>
<thead>
<tr>
<th>MUSEUM INSTITUTION</th>
<th>PROGRAM TYPE</th>
<th>LENGTH OF SESSION</th>
<th>STUDENTS PER GROUP</th>
<th>SESSIONS PER DAY (PER EDUCATOR)</th>
</tr>
</thead>
</table>
| Melbourne Museum   | Lesson       | • 30-minute session  
                    |               | • 1-hour session     | • Not more than 30 students       |
|                    |              |                   |                    | • 4 half-an-hour sessions or 2 one-hour session |
| Immigration Museum | Lesson       | • 45 minutes in classroom followed by 45 minutes in gallery | • 50 students in a group divided into 5 tables and 10 students for a table | • 4 sessions: 10am, 11am, 12pm & 1pm  
<pre><code>                |              |                   |                    | • Maximum of 3 sessions per presenter |
</code></pre>
<p>|                    | Lesson       | • 40-60 minutes for an Italian program | • Not more than 35 students per group | • 3 sessions: 11am, 1pm &amp; 2pm |
|                    | Lesson       | • 50-minute lesson  | • Not more than 30 students | • 2 sessions: 11am &amp; 1pm |
|                    | General viewing | - | - | • 2 sessions: 10am &amp; 12pm |
|                    | Demonstration (Science Buzz) | • 10 minutes (weekend) | • Up to 200 students | • 3 sessions |
|                    | Science show | - | - | - |</p>
<table>
<thead>
<tr>
<th><strong>Scienceworks</strong></th>
<th>• Carried out to complement exhibitions</th>
<th>• Up to 200 students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Touch trolley</td>
<td>• School holidays</td>
<td>-</td>
</tr>
<tr>
<td>Self-guided program</td>
<td>• 1 hour for an exhibit</td>
<td>-</td>
</tr>
<tr>
<td>Volunteer-led tour</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Lightning room show</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>• 1 tour daily (weekdays)</td>
<td>• 4 sessions</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>National Gallery of Victoria (NGV)</strong></th>
<th><strong>Lesson</strong></th>
<th>Not more than 20 students (less number of students with primary, preparatory &amp; kindergarten students)</th>
<th>• 3 sessions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• 1 hour</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Workshop</strong></td>
<td>• 2 hours</td>
<td>Not more than 20 students (less number of students with primary, preparatory &amp; kindergarten students)</td>
<td>• 3 sessions</td>
</tr>
</tbody>
</table>

Table 7.1: The education programs at the MV and the NGV

### 7.7.2.1 Lesson Implementation by MV Educators

The focus of the museums dictated the way lessons were presented, and this was also influenced by the venue, the space and the audience. The educators at the Melbourne Museum placed great emphasis on object interaction in their lessons. Students learnt by touching and handling objects and its strength was on the actual collection that the museum housed. The students were provided with stimulus that allowed them to construct their own understanding.
Rosita Hudson, the educator at the Melbourne Museum, stressed the importance of moving away from lecture-type teaching style. Depending on the program that the students were booked into, preparation prior to the actual session was as important. She marked up the gallery space where the group would be able to hear and participate, and marked the appropriate seating area. Her lesson started with a very short introduction directed at informing the students of what they would be doing before they were assigned to their projects. One way to manage the group behaviour is by presenting a lesson that was engaging. Hudson felt that hands-on activities suit this purpose better than a lecture-type lesson. Making sure that a proper seating area was selected where every student would be able to hear and participate was essential.

To Hudson, the teaching aids used should assist the educators in getting the students to apply their understanding to a different context and allow them to learn through playing particularly with young children. These included the use of laptops and flip cameras where students could record and make a video, hand lenses, getting the children to play dress up, etc.

The education programs at the Immigration Museum were built around narrations and communicative story-telling and for its Italian education programs, the lessons were delivered in Italian. The lessons at this establishment had strong communicative elements through the use of authentic stories and objects such as props and images.

Both educators at the Immigration Museum talked about their lessons with contrastive pedagogical approaches. Weisz employed both teacher-centred and student-centred approaches and shifted between them whenever appropriate. Martin, on the other hands, strongly supported the constructivist approach.

In teaching Italian language, Weisz stressed the importance of her modelling and presenting the lesson in Italian, and she normally would commence her lessons through presentation which was highly teacher-centred. Midway through the teaching, she gradually shifted her orientation of be more student-centred by getting the students to engage in a variety of hands-on activities. She utilised more objects with younger students and included more element of interaction with this group of students. Weisz believed that presentation or lecture-style of teaching allowed for easier classroom management. She often used this at the start of her teaching so that she could impart information to the students and in
getting information from them. She found that the issue of group management was more attributed to the group size rather than the approach she employed. According to her, it was difficult to have an engaged lesson with 50 students. Hence, she limited her class to only 35 students and believed that students were easily distracted and had difficulty in focusing if the group size went beyond 35.

Weisz considered teaching aids as important tools in teaching, as a means of getting the students to focus and engage to the story. At the beginning of the teaching, she tried to gauge where the students were in their learning, particularly the students’ knowledge about migration. To do this, she used cards and the placements of the cards on certain columns would reveal the level of knowledge they have about migration.

According to Martin, she assumed the role of facilitator and not the disseminator of knowledge. Students were provided with the opportunity to construct their own learning and to be inspired in asking more questions in building on their understanding. Martin added that because the nature of the activities at the museum was hands-on, students were compelled to be more engaged and encouraged to ask questions. It was quite difficult for the students not to get actively engaged in the lessons due to the way the lessons were structured, despite the range of students’ abilities. Besides, she added, each lesson only lasted for about 45 minutes. To her, teaching aids were essential as they assisted the educators and presenters in telling the stories and she tried to connect the use of teaching aids to what was in the galleries in the museum collection. She also prepared a question sheet for the teacher to keep track on their students’ engagement during the lesson. This allowed teachers to scaffold student learning once they returned to school.

There was a strong focus on interactivity and action-based activities that led toward discovery in Scienceworks as their education programs were shaped by demonstrations, experiments and presentations. Lessons at Scienceworks were built around experiential learning and focused on providing students with an interactive experience through the use of objects. If an actual object was not practical for a class use, a model appropriate for teaching would be designed for that purpose. For example, replicas of fossils were produced when the actual object was too rare and valuable to be used for the teaching sessions.
Teaching at Scienceworks, Milan commenced his teaching by talking about aspects that students already knew before reaching the level of knowledge where there was a content gap. Asking questions in the beginning also allowed him to identify students’ preconceptions about the topic. This would then be followed by an introduction of the concepts that were foreign to the students. To him it was about introducing a concept followed by repetition of ideas in building students’ knowledge.

7.7.2.2 Lesson Implementation by NGV Educators

Identifying where students were in their learning and scaffolding this appears to be the main focus of most of the NGV educators at the start of their lessons. According to Webb, despite the groundwork, the initial contact with the groups was allocated for action research. She tried to gather as much information from the students by asking questions that enabled her to infer their level of proficiency and knowledge so that the teaching could be better targeted to the students’ levels of abilities. Her teaching was structured around several parts. The first part was about establishing relationship with the students and this involved introduction about herself and finding out information about the students. This was then followed by making the objectives of the lesson clear to the students before she resumed the teaching process. There was an artwork component to her teaching where the students were engaged in producing artwork and during the course of the lesson, Webb made a point to ensure that students felt comfortable and in pace. According to her, her conclusion was always with a two-tier focus, to conclude the lesson and to provide an opening for the students to do a repeat visit. Webb’s teaching approach was student-centred, and any theoretical frameworks had to be aligned with the current teaching pedagogies promoted by the DEECD.

Webb stated that she had carried out many of her teaching sessions without teaching aids but would bring them in whenever appropriate. Some examples discussed were the use of artworks and fabrics to appeal to students’ senses. Teaching aids were used in a variety of ways. For instance, comparing the reproduction with the original artwork in cases like the Banquet of Cleopatra and the reproduction of it by a group of contemporary artists. Sometimes it might involve comparing few artworks of the same artist, that is, The Weeping Woman by Picasso and some of the paintings from his
earlier work. Other teaching aids used included a diagram showing perspective related to an artwork and the X-ray photographs.

Emma Roberts tailored her teaching accordingly to the level of the students. When teaching young children, she used explicit language as a means of managing the students. Saying things clearly and clarifying what was expected on the students during the session would make the students to be more focus. She believed that her strong point was teaching in context, particularly in trying to make connection or link between the artwork and students’ lives. Roberts stressed that students might not remember everything when they were finished with the teaching session, but they would always remember the relationships stressed during teaching and how they connected to their lives. She also modelled in front of the students. She would model the first work, a three to four steps process known as a prolong-observation. Using this approach, her questioning was multilevel. First, it was directed to what the students could see and observe with the purpose of picking up the obvious. Second, asked more detail question in gathering more detailed information about the artwork, and the relationship they could identify between the people and object. Third involved the interpretation of meaning and how the students justified their opinions.

For every lesson, Kate Collins had a preconceived idea how the lesson would unfold, however, the first five to ten minutes of the session would determine the course of the lesson. She said that after engaging the students at the initial phase of teaching, she would be able to tell what kind of strategies that would work best for a particular group. Collins found that students needed to be guided at the early phase of teaching before they could independently construct meaning for themselves. She would normally start the session by imparting specific information and by asking questions and offering information before students could engage in a more independent form of learning.

Teaching aids were an important part of teaching particularly teaching in museums and galleries. According to Collins, a lot of educators carried with them a map of Australia and used it in their lessons to show the different regions or the origins of the indigenous people. In the earlier parts of the interview, she mentioned the use of mystery bag and quotations as her teaching aids. She would also compile a number of supporting visuals that relate to a particular artwork being discussed. For
example, she would prepare a laminated reproduction of Guernica when using *The Weeping Woman* in her teaching.

In teaching, Linda Rogers tried to connect the students with the artwork and this often involved tailoring the lessons to level of the students. She also tried to get students to do the thinking and guided the students to go deeper into their thoughts. Rogers placed emphasis on both process and product-based approaches. Not underestimating the importance of the learning process, she believed that students would leave the gallery happier if they had produced something, it would give them a sense of accomplishment. Her teaching usually focused on creating contrast, this was used mostly to emphasize on similarities and differences. Rogers would often select two artworks that contrasted each other to assist students to better analyse these artworks.

Rogers relied on a number of teaching aids to assist students’ understanding such as visual resources, handouts and Power Point presentations. She preferred the use of the same artworks because it provided her with the opportunity to be really familiar with the objects and enhanced her teaching skills the more she used them.

### 7.7.2.3 Summary

The findings in relation to the practice of lesson planning by the MV educators and the NGV educators were discussed from the perspectives of the approaches to lesson planning; the prior information available; linking lessons to curriculum; and the considerations and preparations undertaken by the educators in planning for their lessons. The findings suggested that the educators from both organisations did not prepare a written lesson plan to guide their lessons. Generally, the educators would form the sequence of the lesson mentally and acquired clear understanding of the aims and objectives of the lessons, the content and the learning needs in which the lessons needed to achieve. Both museum organisations were provided with limited information about the students at the point in which bookings were made. This was different when the students were booked into a negotiated program at the NGV, which allowed the educators to commence further communications with the school teachers and gathered more information about the group learning. In relation to the considerations made in lesson planning, the MV museums and the NGV were found to place curriculum
link as the most important consideration for an effective education program. In addition to curriculum link, the MV educators planned their lessons around five key areas of the intended learning outcomes whilst a great deal of planning by the NGV educators focused on artwork selection. The remaining considerations by the MV and the NGV educators were carried out based on the theme and topic of the lesson, lesson complexity and the educators’ teaching style. The findings on lesson implementation indicated a slight differentiation between each museum participated in the study. Both the education programs at the Melbourne Museum and Scienceworks contained elements of interactivity and the engagement of objects in task complementation. The education programs at the Immigration Museum, on the other hand, were delivered through narrative approach and manipulation of objects. At the NGV, the use of artworks served as the focal point of lessons and the pedagogical approaches were employed to enhance the understanding of students of the objects.

7.8 DISCUSSION OF FINDINGS: SEVENTH RESEARCH QUESTION

The seventh research question was specifically developed to identify the teaching styles of each museum educator and this involves the educational theories that framed their teaching, the teaching strategies employed and the teaching approaches that they used throughout their lessons. The question is listed below:

What educational and pedagogical theories, strategies and approaches were utilised by the museum educators in the implementation of education programs in the Museum Victoria and the National Gallery of Victoria?

Three aspects of teaching were explored in this question:

i. The educational and pedagogical theories employed by the museum educators (this included the pedagogical theory, framework or an orientation or inclination towards the use of a particular theory);

ii. The teaching approaches utilised, and

iii. The teaching strategies used by the museum educators.
The findings obtained from the semi-structured interviews and teaching observations of museum educators provided the key information in answering the research question. The following is the discussion of the findings related to the three aspects identified above.

7.8.1 The Educational and Pedagogical Theories Employed by Museum Educators

This sub-chapter presents the findings related to the use of educational and pedagogical theories by the museum educators of the four museums involved in this study. Discussion focuses on the application of theories at individual level before they are summarized to present the teaching practice at organisational level.

The findings derived from the semi-structured interview and teaching observations of the MV and NGV educators showed the educators’ preferences towards a particular style of teaching and the utilisation of instructional theories, approaches and strategies in the implementation of the education programs. The following table presents a summary of the findings, with data in relation to the instructional theories, approaches and strategies employed by each museum educator participated in the study.

Table 7.2 presents key findings of the instructional theories, approaches and strategies utilised by the museum educators of the MV and the NGV participated in the study. The table also consists of three types of information in relation to the theories, approaches and strategies employed: first, that there were approaches consistently utilised by all the participating museums; second, that there were approaches unique to specific museum; and third, approaches that were unique to the museum educators.

<table>
<thead>
<tr>
<th>EDUCATOR</th>
<th>MUSEUM</th>
<th>THEORIES</th>
<th>APPROACHES</th>
<th>STRATEGIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rosita Hudson</td>
<td>Melbourne Museum</td>
<td>• Constructivism</td>
<td>• Multiple intelligences</td>
<td>• Use of gadgets and technological tools</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Object-based learning</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Community of inquiry</td>
<td></td>
</tr>
</tbody>
</table>
| Alicia Martin | Immigration Museum | • Behaviourism  
• Constructivism | • Narrative approach  
• Object-based learning  
• Student-centred approach  
• Discovery learning  
• Thinking-oriented curriculum | • Story-telling  
• Use of historical objects  
• Facilitation of learning  
• Peer collaboration  
• Learning by doing |
| Pam Weisz | Immigration Museum | • Behaviorism  
• Constructivism | • Narrative approach  
• Object-based learning  
• Combination of both teacher-centredness and student-centred approach in a lesson  
• Targeted teaching | • Story-telling  
• Use of historical objects  
• Scaffolding |
| Peter Milan | Scienceworks | • Constructivism | • Object-based learning  
• Experiential learning  
• Discovery learning  
• Kinesthetic-based learning | • Use of scientific and advance technology object  
• Object interaction  
• Experiment  
• Learning by doing |
| Reese Webb | National Gallery of Victoria | • Constructivism | • Object-based learning  
• Student-centred approach  
• Socio-contextual learning model | • Use of artwork  
• Scaffolding  
• Questioning |
| Emma Roberts | National Gallery of Victoria | • Behaviourism  
• Constructivism | • Explicit instruction  
• Object-based learning  
• Inquiry-based learning  
• Targeted teaching  
• Thinking-oriented curriculum  
• Multiple intelligences  
• Optimal learning | • Use of artwork  
• Zone of proximal development (ZPD)  
• Scaffolding  
• Questioning  
• Conducive environment |
| Kate Collins | National Gallery of Victoria | • Behaviourism  
• Constructivism | • Object-based learning  
• Inquiry-based learning  
• Thinking-oriented curriculum  
• Multiple intelligences | • Use of artwork  
• Questioning |
Behaviourist and constructivist theories were the two main theories utilised by the educators investigated. Behaviourist theory of learning uses stimuli, feedback and reinforcement and students learn through positive and negative behaviours which promote extrinsic motivation (Rowan-Kenyon, Swan, & Creager, 2012; Sidney, 2015; Swiderski, 2011). Behaviourism is often associated with teacher-centred approach to teaching where teachers are viewed as the focal point of instruction (Hall, 2011; Swiderski, 2011). Student engagement in learning is achieved through punishment and reinforcement, with punishment prevents students from repeating undesirable behaviours while reinforcement encourages students to repeat desirable behaviours (Rowan-Kenyon et al., 2012; Sidney, 2015).

The theory of constructivism builds on the active role of learners in making meaning through the interaction with the immediate environment and constructing knowledge (Bada & Olusegun, 2015; Oliver, 2000; Windschitl, 2002). Hence, provision of environment which promotes learning and social interaction are central to learning within constructivist theory (Bada & Olusegun, 2015; Driscoll, 2000). At the heart of social constructivist theory is scaffolding, customized assistance provided by a more able peer introduced at the point of learning readiness (Krause, Bochner, & Duchesne, 2003). The employment of instructional elements which closely resemble social constructivist model and scaffolding in museums and galleries is not new. Many authors agree that constructivism provides the best framework for teaching and learning activities in museum and gallery settings (Silverman & Bartley, 2013; Wang & Yoon, 2013; Wolf & Wood, 2012; Yoon, Elinich, Wang, Schooneveld, & Anderson, 2013). Similarly, the findings for this study indicated elements of constructivism in the lessons implemented by the MV educators.
The sub-chapters that follow present the findings related to the use of educational and pedagogical theories by the museum educators of the four museums involved in this study. Discussion focused on the application of theories, approaches and strategies at individual level before they are summarized to present the teaching practice at organisational level.

7.8.1.1 The Instructional Theories, Approaches and Strategies Employed by MV Educators

The following findings detail the educational theories, approaches and strategies undertaken by the MV educators which defined the education programs carried out at the museums.

7.8.1.1.1 The Instructional Theories Employed by MV Educators

The MV educators were found to mainly engage in constructivism as instructional theory which framed their lessons. Constructivism was found to be the main theory employed in the MV museums as it was believed by the educators to be the most appropriate in providing learning engagement and environment that was unique to museum education.

7.8.1.1.1.1 Constructivism

The reliance on constructivist-based approaches was expressed explicitly and implicitly by the MV educators. A constructivist framework was also the most cited theory in the discussion on the instructional theories, approaches and strategies employed by the educators.

The statement produced by Rosita Hudson, the educator with the Melbourne Museum, showed the employment of constructivist-based approaches as a culture in the MV museums. She pointed out,

The constructivist approach is an approach that we [MV educators] take. We don’t do this approach that the students are gonna sit here and I’m gonna talk for half an hour and the information is gonna go in, that’s an awful approach. We definitely take the constructivist approach.

Milan was open with his utilisation of teaching approaches and strategies that aligned closely with constructivist theory. When asked about educational theories that he associated his teaching with, Milan believed that the job of museum educators was to scaffold and build on what students already
knew. He added that constructivist approaches allowed the incorporation of student-centred experiences and enabled students to explore lessons from their point of view.

In addition to the utilisation of constructivist theory, Milan’s statement addressed a number of aspects that supported his use of the theory. Peter Milan explained how he viewed students’ interaction with the world and how this worldview affected the way they learned. His comment,

I always take this function of students will come in to the classrooms with the world view and things they know and that the job of their teacher is to build on that...

might suggest the application of scaffolding in Milan’s teaching. Scaffolding, often associated with the concept of zone of proximal development (ZPD), refers to a balance in the provision of learning support and its gradual withdrawal targeted at individual ZPD. This learning support is monitored by more knowledgeable peers, and from Vygotsky’s perspective, this could be the teacher, parent or friend (Rodgers & Rodgers, 2004). Rodgers and Rodgers (2004) described the forms of learning support represented by questioning, modelling, feedback as well as instruction.

Milan also addressed the concept of scaffolding in a different part of the interview. In responding to a question about how he organised his teaching, he said,

I tend to try and go with what they already know. So, there’s a bit of questions to find out their pre-conceptions on the topic already, so what you already about the topic. And then start introducing the concepts that are foreign to them.... So, everything is... introduce a concept and then repetition of ideas to build up.

Milan also mentioned experiential learning and a strong use of objects in his teaching specifically, and the teaching and presentations at Scienceworks generally. These two approaches link closely to constructivist framework of teaching. This is noted in the literature which discusses constructivist aspects to teaching and learning. Baker et al. (2002), for example, related experiential learning to constructivism due to the nature of the approach which emphasized on collaborative efforts and project-based tasks with for meaningful, creative and authentic learning outcome. Mughal and Zafar (2011) described experiential learning as engagement in learning that was meaningful as the result of the learner’s interaction with experience directly. Hence, the authors indicated the similarities between
experiential learning and constructivism. Associating his teaching with learning through experience, Milan indicated,

It’s very much along the line of pull this lever to see what happens. And that’s experiential learning we want. We want not to talk about what happen if we pull the lever. We want them to go pull the lever and then talk about what happen. So, it’s all about the experience for us. There was an abundance of reference made for object-based learning. For example, “because we’re in museum, we try to make it object-based as much as possible.” Responding to a different question, he also included ... in the museum, we have the advantage of collection of objects, important historical objects so we incorporate those a lot in our programs.

Alicia Martin, the educator with the Immigration Museum, also thought highly of a constructivist theory and the use of the theory in teaching. Martin elaborated this in relation to her lessons with an orientation of student-centredness and the role she played as a facilitator who assisted students in their learning. She revealed,

It’s all about hands-on constructivist student-centred, it’s about the adult expert as the facilitator not as standing up there as a point of knowledge, it’s about discovering for themselves and it’s about the students being inspired to ask more questions because of the information they are gathering by their collaboration. And because it’s so hands-on, they can’t help but ask questions and get excited about things.

Martin acknowledged several elements of constructivism in this statement. First, the role of teacher as a facilitator in student learning and not the one who disseminated the information. Second, an important aspect of constructivist theory that emphasized on learning by doing and discovery. And this was demonstrated through hands-on learning activities that would increase students’ engagement.

Although constructivism was the main model utilised in lesson development and implementation at the MV museums, the educators at the Immigration Museum did not utilize the use of constructivist framework exclusively. The educators, Alicia Martin and Pam Weisz, incorporated both behaviourist and constructivist models in their lessons.
7.8.1.1.2 Behaviourism

The findings based on the analysis of the semi-structured interview data with the MV museum educators and the data analysis of the teaching observation indicated the utilisation of teacher-centred approaches in the lessons implemented by the educators at the Immigration Museum. The reference to the behaviorist-based approaches, however, was not exclusive as the lessons also involved the integration of constructivist-based teaching approaches.

Pam Weisz, for example, framed her lessons based on constructivist theory to a certain extent but she would also include the element of behavioural theory in her teaching. Weisz held a unique position in the Immigration Museum, the education programs at the Immigration Museum were used as a platform to create awareness towards the Italian language and to improve students’ literacy in the language. The extent to which a behaviourist framework was used depended upon the Italian proficiency level of the students. She stated,

For language learning, I find that being able to present to students and them responding to me is easier. If they have a lot of language, then they can do hands-on, quite easily. But you just have to set up in different way. I’ve done, I’ve done both. Last year I ran a program where it was hands-on, and students did very well but I still had to give them some input. I still had to give them some input at the beginning then they do an activity in groups and then I would try to bring them up together.

Based on this statement, Weisz’s engagement with behaviourist-based approaches differed between groups, based on the groups’ level of Italian proficiency.

For Weisz, it was particularly important especially when teaching in Italian, she needed to first model the language through modelling and presentation. According to Weisz,

I think for me the teacher-centred is probably easy in the sense because the students are coming to see me speak in another language. For them, for me to do that I have to present. So, for me, with the Italian language, I try to mix it up. So, there’ll be a bit of presenting in the beginning and then the students might be doing something....

The findings are supported by the teaching observation data. The audio recording indicated a lesson that relied heavily on the use of narratives and Weisz dominated the lesson by telling stories...
about the lives of three immigrants who migrated to Australia between the periods of 1950s to a more recent period. In the lesson focused on Migration and Identity, Weisz employed a narrative approach in order to tell these stories and each story was followed by a short discussion between her and the students, and the students had to provide answers for three different questions that she had described earlier. Her narration was teacher-centred because she imparted all the information and the students assumed the role of listeners. However, her stories were information-rich, and she did use questioning from time to time and utilised objects, images and map to support her stories.

The semi-structured interview session was carried out after Weisz’s observed lesson, provided her with the opportunity to explain the teaching approaches which she had employed. In her interview, Weisz explained the use of teacher-centred approach during the lesson,

It’s a lot more work but it’s more student-centred. Today for example, my presentation was more centred on me, and me giving information to the student s and they’re interaction, interacting. Some of the other styles that we do are more student-centred, so the student is in control and then the presenter will try and get information out of them.

The lesson carried out by Alicia Martin that was observed by the researcher incorporated both teacher-centred and student-centred instruction. Similar to Weisz, Martin used narrative as the main approach in her teaching. She communicated stories on topics such as the Gold Rush, British Migration, Post World War II, Inside Refugee and Post Vietnam and in telling these stories, students took the role of listeners because they needed to identify the answers to the questions stated on the activity sheet. Each story was followed by a student from each group presenting what they had written on the activity sheet. In this lesson, teacher-centred teaching was the most dominant approach used.

7.8.1.1.2 The Teaching Approaches Employed by MV Educators

It was found that the MV educators implemented their lessons through the application of a number of approaches. The most commonly cited approach was the object-based learning (OBL) approach. Other approaches used included the narrative approach, discovery learning, experiential learning, discovery learning, etc. The following are the findings in relation to the instructional approaches employed by the MV educators.
7.8.1.2.1 Object-based Learning (OBL)

The object-based learning (OBL) approach was the most commonly mentioned approach by all the MV educators in the study. Weisz thought highly of OBL and incorporated the approach in her teaching. Explaining her selection of objects for teaching,

I try to find objects that make them curious, that the students have never seen before. And I try also to introduce like a mystery object, something that is very unusual so they have to try and figure out what is this object, what its purpose, you know... what it’s made out of, who would have used it.

Relating the objects used to the content of her teaching, Weisz said,

And you’re trying to find an object that connects the stories, of course. And you try to find object that you know tell a little bit about the culture. Or try to tell a little bit about the person’s life. So, the objects are often things that we have a department here that has objects what we call as interpretive objects. We can borrow them and this department has lots of objects which aren’t on display at the museum, they are not precious objects so they can be used by students. We can borrow things from them.

Weisz also described the authenticity of the objects used. She disclosed,

No [did not use replicated objects]. We try and use the original. The only time we’ve used replica last year we had an ancient Roman program and so we used replica but we’ve also found ancient Roman objects which we used as well. So, we try to balance. We try to use some real object if, you know... we have to.

Peter Milan was a strong advocator of teaching using objects. This was evidenced through his responses during the interview. Responding to a question about students’ engagement during the teaching sessions, Milan emphasized the use of objects and the authenticity of these objects. According to him,

It’s an object-based education program, then it’s…To make it a different experience, we try and make sure the objects are real objects, if you understand what I mean. It’s so often a model of something or a recreation of something. If we can, we try to make sure we get the real things. The program that you’re gonna see with Rosita, we went source a meteorite that was
actually dug out of the ground. We’ve got amber with insect trapped inside of it. We’ve got a rock with dinosaur fibre in it…

The interviewer continued whether students were given the chance to touch and hold these rare objects. And to this, Milan answered,

Yes. They’ll [the students] get a box that’s so big [made hand gesture]. When they open it, they’ll get a video camera and an object set in… so they’ll be able to hold that. Now that one does have model cause for rare fossils we couldn’t put them in the box but our preparatory department has done very, very accurate model of them. So, we still class them as real objects. So yes, if it’s object-based we’re going to make sure that we use, if we’re talking about steam engines. Then we go to our collections and we’ll take an antique steam engine and we use that.

Milan explained the use objects in the teaching at Scienceworks in relation to experiential learning. He said,

It’s very much along the line of pull this lever to see what happens. And that’s experiential learning we want. We want not to talk about what happen if we pull the lever, we want them to go and pull the lever and then talk about what happen. So, it’s all about the experience for us.

Another educator that stressed the importance of experience was Alicia Martin. She said,

You’ve got to understand with the education programs in the museum is we don’t want to run a classroom. This is not about a classroom, this is about a museum learning experience. So, it’s a very different learning experience to the way you run a classroom. Because we don’t want teachers to come here and have the kids do exactly what they do in the classroom. They’ve got to come here and do something that is new and different, exciting, fun and they’ve got to have materials that they won’t have in the classroom.

Martin associated this different learning experience with the use of objects in museum teaching. According to Martin,

We spend quite a lot of time thinking about what the curriculum required, thinking about how we would connect the idea of object-based learning to the experience of what the students have.
In a different part of the interview, Martin stated,

All the stories [stories used in the teaching] were about real people. And when she [one of the students in her lesson] saw that she was quite astounded. So, it’s about the cultural-social museum allows students to get access to original documents and primary sources, it’s a real thing type experience. We’re not taking them to a textbook, we’re taking them to real objects that tell them the stories.

Rosita Hudson stated that OBL was an approach that she employed in her teaching. In addition, she said,

I hope the museum is providing a pretty unique learning experience, it enhances objects, it enhances really interesting experiences, and it enhances experiential experiences, multimedia rich. I think it also offers engaging experience and more directed.

However, she felt that the approach is not exclusive to museums and galleries. She explained,

I think that a museum specializes in but I don’t think that it happens exclusively at the museum, other places probably can do it too… Is that we have 16 million objects, we have real collection materials and we have real things that’s highly significant that people can see and engage with. You can really see momentosaurus skeleton whereas you can only imagine how big it would be.

7.8.1.1.2.2 Teacher-centred versus Student-centred Approaches

Though several educators had stated their preferences towards constructivism, Weisz felt that teaching using a blend of teacher-centred and student-centred approaches was more effective in language teaching. In teaching Italian, she would normally commence her lessons through presentation (teacher-centred) and midway through the lessons students would engage in hands-on activities and she assumed the role of facilitator (student-centred). She clarified,

I like both [teacher-centred and student-centred approached]. I think for me the teacher-centred is probably easy in the sense because the students are coming to see me speak in another language. For them, for me to do that I have to present. So, for me with the Italian language, I try to mix it up. So, there’ll be a bit of presenting in the beginning and then the
students might be doing something... something more like a hands-on thing. So, I try and do a variety of things, a variety of activities.

She explained why she had to revert between teacher-centred and student-centred teaching,

I think it depends on the students and situations. For language learning, I find that being able to present to students and them responding to me is easier. If they have a lot of language, then they can do hands-on, quite easily. But you just have to set up in different way. I’ve done... I’ve done both. Last year, I ran a program where it was hands-on and students did very well but I still had to give them some input, I still had to give them some input at the beginning then they do an activity in groups and then I would try to bring them up together. I think.... I think both styles work.

Weisz saw her approach as effective though in the past she did face difficulties in getting the students to engage. However, the issues could have been attributed to the large number of students in a session (50 students) and not necessarily due to the approach used. Now she limited her class to 35 students and believed that students were easily distracted and had difficulty in focusing if the class goes beyond 35.

For Martin, even though she mentioned student-centred instruction very briefly during the interview, she strongly believed that the most appropriate way to teach at the museum is through activities that were application-based and student-centred. Data from the audio recording, however, indicated that Martin employed some elements of teacher-centred activities. At some point of her teaching, students were guided with direct instruction. This involved story-telling where she communicated history on migration based on topics such as Gold Rush, British Migration, Post World War II, Inside Refugee and Post-Vietnam. Nevertheless, the educator’s autonomy was transferred to the students during the discussion activities.

7.8.1.2.3 Narrative Approach

In the findings, the narrative approach was a dominant approach used at the Immigration Museum. The educators, Alicia Martin and Pam Weisz, utilised the approach in imparting lessons on migration and immigration history. The narrative approach employed at the Immigration Museum was
assisted by OBL. The educators would bring a briefcase to the lessons, and while telling stories, relevant objects which represented the subjects in the story were taken out and showed to the students. The method increased student engagement towards the stories told.

7.8.1.2.4 Experiential Learning

Experiential learning was mentioned during the semi-structured interview with Peter Milan, the educator at the Scienworks. Milan explained that the education programs at the Scienworks were delivered through hands-on activities which required student direct engagement with the object. This, according to Milan, provided learning experience that was meaningful to the students. Milan explained the focus of the education programs at the Scienworks,

It’s very much along the line of pull this lever to see what happens. And that’s experiential learning we want. We want not to talk about what happen if we pull the lever, we want them to go pull the level and then talk about what happen. So, it’s all about the experience for us.

Milan’ statement was supported by the findings derived from the teaching observation data of his lesson. The lesson was on Robotic and Sensor, and in the lesson students were divided into groups and each group was given robot components for them to assemble. Upon completion, they were then taught how to manoeuvre and control the robot’s movement. The lesson required active engagement of the students through hands-on activities. The lesson was also found to integrate kinaesthetic-based learning and discovery learning where students had to perform physical-related task in the lesson.

7.8.1.2.5 Community of Inquiry

Rosita Hudson, the educator at the Melbourne Museum, was the only educator who talked about Community of Inquiry and compared the model to her teaching. She explained an approach in Community of Inquiry used by her colleague who was the Arts and Humanities Educator and expressed the similarity between her teaching and that of her colleague. Explained Hudson,

She [Rosita ’s colleague] runs her humanities programs through an approach that’s called Community of Enquiry. So, she has the students work in groups and she places objects... Like in one of her programs they have to run through a number of objects that somebody will call
it rubbish and trying to tell the story of that person’s life through those objects and that’s getting them to think about the significance of other objects and what objects can tell us. But it’s also a very constructivist approach, because the students construct their understanding, it’s really about their conversations in the room. She, as a teacher, directing the conversation and facilitating that and not ramming content down students’ throat. I think in many ways we both are taking similar approach in teaching. But just one science and one humanities.

7.8.1.1.2.6 Thinking-oriented Curriculum

In designing lessons and modules, Martin focused on the thinking curriculum, which involved provision of lessons through delivery, tasks and activities which presented students with the opportunity to think and develop their cognitive ability on a particular topic. The pedagogical approaches cantered on the use of inquiry-based learning, constructivism, community of learners and student-centredness. The presenters assumed the role of facilitators and not the disseminators of knowledge. Students were provided with the opportunity to construct their own learning and to be inspired in asking more questions in building on their understanding. According to Martin, because the nature of the activities at the Immigration Museum was hands-on, students were compelled to be more engaged and encouraged to ask questions. Martin also prepared a question sheet for the teacher to keep track on their students’ engagement during the lesson. This allowed teachers to scaffold student learning once they went back to school.

Alicia Martin was the only MV educator who mentioned such pedagogical framework. Even though Peter Milan and Rosita Hudson produced responses that aligned with the thinking curriculum, there was insufficient data to rule their teaching reference of the framework.

7.8.1.1.2.7 Multiple Intelligences

Rosita Hudson made a brief statement about MV’s reference towards Multiple Intelligences. She said,

I guess all of us think about multiple intelligences and in a way catering for all those multiple intelligences in the program. Milan’s response to one of the interview questions demonstrated
his awareness of different preferences towards learning that students have. However, he stated that because Scienceworks had a focus on experiential-learning, lessons were object-based oriented. He answered a question about the effectiveness of object-based learning in teaching, you have certain students who are not predisposed to that kind of kinaesthetic style of learning. Would prefer their information presented in a different way, you know they might do better with actual reading description on verbal description. But generally, as I said, because we want the unique experience, we were always try to make it object-based learning.

7.8.1.1.3 The Teaching Strategies Employed by MV Educators

This sub-chapter focuses on the discussion of findings in relation to the teaching strategies used by the MV educators. The teaching strategies employed aligned with the approaches and theories that the educators relied on.

7.8.1.1.3.1 Questioning

Questioning was utilised as a teaching strategy by all MV educators participated in the study. Milan and Martin used questioning in identifying where the students were in their learning. According to Peter, in addition to gauging students’ level of knowledge about the topics, asking questions at the start of the lessons also allowed him to determine students’ conceptions, and particularly preconceptions. The teaching sessions carried out by Martin and Weisz appeared to unfold in a similar manner. The lessons were structured around stories of immigrants and immigration, followed by a series of questions at the end of each story. Hudson did not explicitly address the use of questioning in her instruction. However, her response on the utilisation of the community of enquiry suggested the use of questions to construct students’ understanding. However, the role of questioning in this sense might be transferred to the students as they formed and synthesized information about the objects studied.

7.8.1.1.3.2 Scaffolding

Scaffolding was one of the strategies utilised by Peter Milan and Pam Weisz. Scaffolding is an element in social constructivist framework in which teachers employed to progress student learning
from one level to another. Milan’s explanation about his teaching at the beginning of the lesson indicated the utilisation of scaffolding strategy. According to Milan,

I tend to try and go with what they already know and introduce to. So, there’s a bit of questions to find out their pre-conceptions on the topic already, so what you already know about the topic. And then start introducing the concepts that are foreign to them.” He explained further, “Once we talked about the things that they are already comfortable with. For example, this one with very young children, which is a sort of Introduction to the Scientific Method. So, we looked at what do we know about scientist already, we talked through that. Here’s some of the things scientists do and we can show you how they do it. And because they were very young kids, 4 and 5 years old, we looked at scientists figure out how things are, and scientists figure out how things work. And so, we looked at those two concepts. So, everything is... introduce a concept and then repetition of ideas to build up.

Though Weisz did not mention about scaffolding during the interview, she carried out flash card activity in the lesson where the students were given cards with pictures and they were required to match the cards with appropriate themes on the board. Weisz explained this activity during the interview,

I use the cards because... I use it as a prior knowledge questions at the beginning. When they do that activity, I do then know what they know about immigration, do they know a lot about immigration, do they know nothing. And I can tell by the way they do that activity; how much they know and what I need to focus on.

She added,

If they done putting things in incorrect column [order], I now I need to focus on that and this because they don’t... because that’s really the only way you know you can engage and find out.... so, I try to use prior knowledge questions, always just to focus myself as well so that I can see where the students are at.

The concept explained by Weisz is closely associated with scaffolded lessons.
7.8.1.3.3 The Use of Gadgets (Experiential Learning)

Rosita Hudson emphasized on active interaction with objects in her teaching. This was carried out through ‘learning by playing’ as she put it, involving the application of understanding in different contexts. Some of the activities included getting the students to dress up in particular costumes and apparels, recording and making video. The teaching observation data supported her use of this strategy. In her lesson, the students were provided with a flip camera for video recording and when the task was completed, they were supplied with mini laptops to download video clips.

Active interaction with objects also appeared to be a theme for the education program at Scienceworks. Milan explained the museum’s interactive orientation,

We do have a very large collection, when you’re outside see all the warehouses and they are full of our history and technology collections. So, we’ve got steam engines and printing presses and scientific devices from over the last 150 years, we’ve got massive collection. But only a small selection of them get to be on display because we tend to get them all interactive device type exhibit.

Stressing on experiential learning, he said,

So, it’s very much along the line of pull this lever to see what happens. And that’s experiential learning we want. We want not to talk about what happen if we pull the lever, we want them to pull the lever and then talk about what happen. So, it’s all about the experience for us.

7.8.1.3.4 Story-telling

If at the Melbourne Museum and Scienceworks’ teaching activities revolved around experiential learning, the Immigration Museum structured their sessions around the use of story-telling. Story-telling was one of the strategies which supported the narrative approach. At the Immigration Museum, story-telling was used to enhance students’ understanding on immigrations and immigrants and objects were used to support and to better illustrate the stories. This was manifested in both types of data collected. During the observed lessons, Alicia Martin instructed a lesson on Period of Migration and five different stories were presented: Gold Rush, British Migration, Post World War II, Inside Refugee and Post Vietnam. Pam had a focus on Immigration and Identity and talked about three
individuals who had migrated to Australia during different eras for different purposes: Carmella who came to Australia in 1957 as a proxy bride, Piero who migrated to Australia in the 1940s for a better work opportunity; and Enzo who studied in Australia in the 1990s and decided to live in the country. In both lessons, students were provided with an answer sheet containing a list of questions which were discussed after each of these stories were told.

Rosita Hudson from the Melbourne Museum did have an element of story-telling in her lessons. In her explanation about the use of community of enquiry as an approach in her teaching, Hudson briefly indicated how she facilitated conversation and building students’ understanding through the use of story-telling. The stories that she used linked to and explained the objects discussed.

7.8.2 The Instructional Theories, Approaches and Strategies Employed by the NGV Educators

The interview transcripts and audio recordings of teaching by four educators at NGV were analysed in relation to their application of educational and pedagogical theories, approaches and strategies utilised as well as the model and framework used to support the implementation of the education programs. The findings derived from this analysis is presented below.

7.8.2.1 Educational and Pedagogical Theories of NGV Educators

The findings indicated that the educators at the NGV framed their lessons with theories that were similar to the ones used by the MV educators. The discussion in relation to the instructional theories adopted in the implementation of the education programs at the NGV is presented below.

7.8.2.1.1 Constructivism

Similar to the MV educators, the constructivist theory was found to be a strong theme in the analysis of instructional theory employed by the NGV educators. The NGV educators also believed strongly that the constructivist framework in the development and implementation of the education programs enhanced the uniqueness of teaching and learning process in the museums and defined what museum education really was.
Emma Roberts clearly admitted her reliance on social constructivist theory. Her response to this demonstrated her application of various constructivist approaches and strategies. Responding to a question about the educational theories or pedagogical framework that she used, Roberts replied,

Definitely constructivism. And in it I try and scaffold the learning. So, I also use what we loosely call it inquiry-based learning. I would use Vygotsky’s notion of proximal development and the understanding that I try to get. Because I don’t know the students, my questioning initially is to get them to reveal their level of knowledge...

These teaching approaches are explained in detail in the following sub-chapter. Roberts explained that, with her work, she had to teach students whom she has very little information about their abilities and learning. She would use the initial phase of the lesson trying to identify students’ zone of proximal development (ZPD) and then use the rest of the lesson to scaffold students’ learning.

Reese Webb did not make explicit about her use of any educational or pedagogical theories. However, she discussed theories that are close to the educational practice of museums and galleries such as constructivism and addressed approaches under this theory particularly student-centred instruction and scaffolding of students’ learning. She explained,

You know what works and then you think, “Oh yeah... that model actually makes I make it.”

And I think what’s good about being aware of the theoretical framework is that it helps you make sense of what you do. But I think as educator in a gallery, .... The social interaction between the groups, you know they’re all important things and you see this model and you think, Yes, that’....” I think we draw from all sorts of different things. I don’t think there would be one particular model.

She also added,

I supposed it’s student-centred learning, that would be one thing when you’re very focused.

And I think any frameworks that we do use would be related to current teaching pedagogies promoted by the Department of Education.

Webb emphasized her awareness of theoretical body of knowledge that is related to art museum education, for example, the constructivist theory that centres around student-centred learning in building on what students already know and the scaffolding of that.
In addition to student-centred instruction, Webb strongly emphasized the importance of socio-contextual model of learning, which is one of the pedagogical models under the constructivist umbrella. Responding to a question about educational theories used by the educators in planning and lesson delivery, Webb included the model in her response,

There’s socio-contextual model of learning so understating the interaction between the social and the personal, the contextual. I think that’s important.

Admitting that she did not begin her career by employing the use of the model in her teaching, she added that she progressed through her career and became more aware about a number of models that later shaped her teaching.

Kate Collins understood the significance of constructivism in building upon students’ learning. However, she felt that there were times when educators need to impart information before students acquire sufficient knowledge to proceed with the activities and tasks planned. Hence, she felt that sole reliance on constructivist framework to plan and implement teaching may not be appropriate for students at all levels. There were times, explained Collins, when she had to tone down the level of complexity of her content. Collins stressed that sometimes she had to use beginning of the lesson to answer basic questions about arts and said,

I frequently stop my lesson here with students if they’re coming for general introduction to the gallery with ‘What is art?’, ‘Why do people make art?’, ‘What can we learn from art?’ Because I think that’s incredibly important to break down the barrier that’s often there, which is, “Oh, you only come to the art gallery if you’re interested in art. So, I want them to be able to discuss and see the relevance to their lives.” Saying this, Kate Collins quickly added, on the other hand, you know, if you were to just stand there and to talk, it’s not always the right way to engage the students. So, by drawing them in, it’s often the way to engage them.

In a different part of the interview, Collins expressed her doubt about relying only on constructivist approaches in teaching. According to her,

Look, I particularly believe very, very firmly in the inquiry approach but I would have to say I was taught that in the university, but I have questioned it quite specifically over the years
because I feel sometimes the inquiry approach does have its drawbacks. And I think that’s because as educators we have part of our role very specific information that only we have.

Therefore, she explained that she did not stick to a particular use of theory but commonly having a blend of few theories to guide her teaching. In relation to student-centred versus teacher-centredness, she employed a combination of both constructivist and behaviourist approaches in her teaching.

7.8.2.1.2 Behaviourism

The findings revealed that the elements of behaviourism were also incorporated into the teaching programs implemented at the NGV. For the NGV educators involved, imparting information at the beginning through one-way interaction and guided instruction were sometimes necessary. To these educators, a mix between student-centred approach (constructivist theory) and teacher-centred approach (behaviourist theory) was more appropriate in setting context about the topic or for students who came to the museum with insufficient background knowledge about the topics to be introduced.

Kate Collins questioned the effectiveness of instruction that was solely developed based on constructivist approaches. She felt the students needed to be provided with information before they could attempt the tasks and activities effectively. This suggested the utilisation on behaviourist theory to a certain extent in her teaching. She also responded,

I feel terribly strongly that we need to be able to give this very specific information and that if any teacher during ... professional teacher can walk in here and ask the right question and get the students talking about the artwork but they might not have that specialist knowledge.

So, what I tend to do is to very, very hard to balance that and have a blend of the inquiry approach and me imparting information.... And I think it’s something that all of us try desperately hard to achieve the right balance. It’s hard.

Based on her responses during interview as well as the findings from her teaching observation, Collins did not utilize constructivist approaches entirely or behaviourist approach specifically. She explicitly explained that she did not stick to any educational theories in particular, rather had a blend of approaches governed by a number of educational theories.
The findings from the analysis of semi-structured interview and teaching observation suggested Linda Rogers’ application of some elements of behaviourist theory. Rogers used compliments as reinforcement for students and reinforcement is one of the aspects of the theory. She provided a lot of compliments to students if they managed to perform tasks given, and this was evidenced in both interview transcript and the audio recordings. Words such as good, excellent and impressive were commonly used. In the interview, Rogers talked about one of the male students in the group that she was just teaching and how the use of compliments improved the relationship between her and the student and motivated the student to be more engaged with the lesson. According to Rogers,

It’s good to praise students like that because he may not be recognized in curriculum areas and suddenly you’re giving them credibility. And I always quite like to relate that to year 12. Cause in the year 12 especially if they can give you that analysis and descriptive analysis, even if it’s not correct of the painting but if they can make the examiner understands what they are thinking and clearly and see the relevance...

The findings based on the analysis of teaching observation data pointed towards Rogers’ employment of a blend of activities for students with focus given on teaching activity that was student-centred. In her lesson, she introduced students to seven artworks and for each of the artworks, she imparted information and provided details about the artworks before proceeded with the two-way discussions. Therefore, even though Rogers focused on providing information for every artwork, the focus shifted to students during the discussion session that followed.

7.8.2.2 The Instructional Approaches of NGV Educators

The NGV educators were found to have employed seven different instructional approaches in the implementation of the education programs at the NGV. The seven approaches were determined based on the findings derived from the semi-structured interview and the teaching observation data. These approaches aligned with the findings involving the educational and pedagogical theories discussed in the previous sub-chapter. The approaches highlighted were the object-based learning, community of inquiry and student-centred approaches (constructivism), teacher-centred approach (behaviourism), as well as the process and product-based approaches.
7.8.2.2.1 Object-based Learning Approaches

The NGV educators agreed that object-based learning (OBL) approach was unique to museum and gallery settings. Reese Webb believed that OBL was an essential focus in student-centred teaching. She stressed that this made learning in the museum unique and different from learning in the classrooms. Replying to an enquiry about OBL or using display in teaching, Webb said,

I think it’s integral to what we do, it defines what we do actually. That’s what makes our teaching very different. That unique experience that we can offer….

Webb believed that teaching in gallery presents itself with a lot of advantages in providing unique learning environment. The combination of various factors creates teaching environment that fosters learning.

Supporting Webb’s statement, Kate Collins explained the relevance of OBL in museum and galleries. According to Collins, because almost everything was accessible online, galleries presented unique opportunity for the students to look at real objects and to appreciate the details, hence making OBL more relevant than before. She revealed,

To answer that question, it’s still relevant [to teach using artefacts and objects]. I think it is more relevant now that it has ever been because I think, as you mentioned earlier, it’s now so easy to access everything online. And our job is to show that coming to the museum is an utterly unique experience cause you get to engage with the real things to see the scale, to see in some cases the brush strokes close up, the texture of the paint, to feel the aura, the magic of the object, or the artwork, whatever it happens to be.

Linda Rogers did not explicitly state her use of OBL approach in her teaching. Her application of the approach was inferred from the descriptions of her teaching associated with the use of artworks. And this implied the use of objects as a focus in content delivery. For example, she mentioned about one of the techniques she used in her lessons was on identifying similarities and differences with the aim in comparing contrast between artworks that she showed to the students. In addition, she indicated that she had with her an inventory of visual resources of exhibition. Webb described the aspects that guided the educators in making selection of objects to use.
We’ve got a whole collection, bits and pieces that people [educators] use in different ways. Sometimes it might be... One thing that we might look at is a procreation, for example the Banquet of Cleopatra that you probably know, that’s been reworked by a group of contemporary artists. So, we might have a reproduction of that, say... “Look at what... You know, here’s the artwork and look at what the contemporary artists did with it.” Or you might have another artwork by the same artist. For instance, with the Picasso of the Weeping Woman which is a very abstract work, we might often show students a very early painting by Picasso that shows that he was really skilled in realistic type of paintings early in his career and why did he change like that. A comparison helps. Or we might show Guernica which is... has got a figure of a weeping woman in it and say that this relate to this artwork. So, we might contextualize the work by showing reproduction of other artworks as relevant. Sometimes especially for young kids you might have hands on things.

In a different part of the interview, Webb described the process of object selection,

So, first of all you think about what the students have booked in for, what you think students are going to be interested in... You know, the students’ interests... they might book in for the landscape and start to think about what you have in that area and try to relate that to the theme and to the students’ interests and a bit of variety too. I think that’s important. I would usually hope that, unless it’s a class that’s specified in one way, you might do some traditional contemporary, a range of media so that they go away with the idea that art is diverse. It’s about a broad experience generally, unless it’s specified otherwise, they just want to look at something very particular.

7.8.2.2.2 Student-centred Approach

Student-centredness was addressed by all the educators interviewed when they were asked about the teaching approaches that they used. Webb stressed the importance of this approach and how it supported lesson planning and delivery of all educators at the NGV. It was the first approach that she mentioned when asked about the question. According to Webb,
Appropriate way of teaching in the museum... I think the student-centred approach, you know.... I mean, I don’t know whether that, whether you can characterize that as an approach. But just to be, you know, really focus and students and their needs. It’s a primary importance always.

Emma Roberts did not explicitly mention her focus on student-centred instruction, however, she provided details about her lessons that represented the characteristics of student-centred teaching. For example, she described how she focused on students establishing relationship with the artworks. Roberts stressed,

I think it can be boring listening to educator all the time and as a teacher we love to talk. So, I can talk whole day about a topic, and I think it’s really fascinating listening to myself. But I’m pretty alert to the kids at the back who were tuning out and trying to make the conversation That’s what I’m trying to establish is a conversation between themselves and the artwork and me. And so, it works really well when they start saying, “Well Susan said that’s an orange but I think it’s more of a magenta.” So, I’m trying to get kids excited about looking at an artwork and then be interested in discussing and describing and seeing and analysing...

7.8.2.2.3 Student-centred versus Teacher-centred Approaches

In the discussion on the use of educational and pedagogical theories by NGV educators presented in the previous heading, it was stated that Kate Collins employed a balance of teacher-centred and student-centred instruction. She found that students needed to be guided with information at the initial stage of the teaching before they could independently construct meaning for themselves. She said,

A group [students] can come in and we’re trained to ask exactly the right questions. I mean I frequently stop my lesson here with students if they’re coming for general introduction to the gallery with ‘What is art?’ ‘Why do people make art?’ ‘What can we learn from art?’ Because I think that’s incredibly important to break down the barrier that is often there, which is, ‘Oh, you only come to the art gallery if you are interested in art.’ So, I want them to be able to discuss and to see the relevance to their lives. So, I do ask a lot of questions. Having said that
I also feel terribly strongly that we need to be able to give this very specific information that if any teacher during... professional teacher can walk in here and ask the right question and get the students talking about the artwork but they might not have the specialist knowledge. So, what I try to do is to try very, very hard to balance that and have a blend of the inquiry approach and me imparting information.

Therefore, she would normally start her lessons by imparting specific information by asking question and offering information before she shifted her focus on student-centred activities.

7.8.2.2.4 Process and Product-based Approaches

The data from the interview indicated that Linda Rogers placed a strong emphasis on both process and product-based approaches. She compared this focus with the focus of other educators who might have stronger emphasis on the outcome of the activities which was on the product. Rogers informed,

Some educators disagree with me that it’s more about their experience and their process but I still like them [students] to walk out with the product that they’re happy with and they feel like they’ve achieved something.

Rogers added,

Some people think it doesn’t matter that they walk out with a good finished artwork but I like them to go out with good finished artwork. They might think it’s more of a learning and the skills and things like that, working with the materials something like that...Anyway, that’s what I think. I like them to go out with something at the end.

Therefore, in her one-hour class, she often planned for students to produce an artwork such as line and cut printing. However, Rogers’ lesson that was observed had a different focus and did not have an activity with a focus on producing a product.
7.8.2.2.5 Community of Inquiry

Linda Rogers and Emma Roberts briefly mentioned community of inquiry, one of the approaches under the umbrella of constructivism. Rogers, in responding to a question about the approach that she used in her teaching, briefly said,

Probably that community of inquiry but I’m not sure who started that. I always use that...

Roberts mentioned community of inquiry as an approach in passing. However, she described the focus on active engagement in students’ learning and associated this to the Community of Inquiry. During discussion of teaching approaches, Roberts stated,

I think Webb, Collins and probably Rogers [NGV educators and Roberts’ colleagues] would say that we use inquiry method of teaching. So, what we’re looking at here is engagement. So, we want the students to be interested, we want them to be listening but we want them to be active.

From her response, it appeared that Roberts viewed students’ engagement as an outcome of community of inquiry approach of teaching. However, she also associated students’ engagement with the thinking-oriented curriculum and related this to the state curriculum which is one of the major guidelines used by NGV educators in planning for their lessons. She said,

The Victoria curriculum, in the last five years, is very interesting and we have emphasis on what we call thinking processes. I’ve been teaching for a very long time and I can see a huge improvement in children’s ability to think abstractly. So, if we look at an artwork, for example, we’ve got an artwork from the 1850’s that has no electricity pole. So, one of my strategies is to try to get the kids to realize that electricity was not yet invented. So, I question them about things till they reveal that information themselves. I could tell them but what I want them to do is to think and keep commenting.

7.8.2.2.6 Thinking-oriented Curriculum

There was very little discussion during the interview about the educators’ view towards the Thinking-oriented Curriculum. The focus on the Thinking Curriculum was inferred based on the educators’ responses that aligned with the framework. Rogers, for example, explained about her use of
questioning to build on students’ thinking. She added that she often used questioning to get the students to analyse the contrast when a particular lesson focused on more than one artwork. She modified the level of complexity of her questions and worked on increasing the level of complexity as students went through the lesson. One of the responses by Rogers that could be interpreted as a reference to the Thinking Curriculum,

The best way to teach, I think, is to get them to do the thinking.... They must come out and they feel like they have a relationship with that artwork.

One of the activities stressed in her teaching was the identification of contrast between different artworks and this activity aligned closely with the thinking-oriented curriculum. She indicated that looking at similarities and differences would enable the students to analyse artworks at a deeper level,

A particular work it’s good to contrast it with another particular work. Now this contrast might be similar, so it’s comparing contrast. So, similarities and differences between particular works of art.

7.8.2.2.7 Multiple Intelligences

One of the NGV educators who adapted the use of seven multiple intelligences was Emma Roberts. Her words on the topic,

Use Howard Gardner’s multiple intelligences. I’ve been teaching for a very long time. Because I was a teacher educator like yourself [referring to the researcher], we kind of know this stuff. So, I would, you know, if you observe me you might see a bit of that, a bit of that, a bit of that... And it's all just because I make an assessment that this group needs this kind of dynamic to communicate [associating to the types of multiple intelligences] ....

During this part of the interview, Roberts mentioned a range of theories that she use but provided elaboration on approaches related to constructivism and did not elaborate on the use of the Theory of Multiple Intelligences.

Another educator that made an association with the Theory of Multiple Intelligences was Kate Collins. She described her use of educational theories in relation to Artful Thinking and the project was
the umbrella project for Artful Thinking as well. Collins provided quite a lengthy discussion on the topic,

Artful Thinking [responding to the researcher’s question about the theories she employed in her teaching] ... It’s a new project, well... it’s seven years old now from Harvard in America. And it’s from Project Zero Education Team. And it’s mean... They work out a mean of developing particular thinking disposition and skills through looking at artwork. So, if a teacher comes in and looking for that, we’ll have to make sure that we select appropriate works, we learn about a particular thinking discipline and we research it. So sometimes it’s more pedagogical, sometimes it’s more information in terms of the research that we need. So, it’s incredibly varied...

7.8.2.2.8 Flow Theory

During the interview with Emma Roberts, she mentioned her reference towards Mihaly Csíkszentmihályi’s concept of flow or autotelic experience, or what Roberts named as Csíkszentmihályi’s Optimal Theory of Learning. The theory proposes that human beings are equipped with basic drives which motivate and compel them to initiate and finish a task with high level of engagement and concentration (Csikszentmihalyi, 1992). Csíkszentmihályi added that the heightened flow of concentration would result in deep learning and high level of work satisfaction.

According to Roberts, she followed Csíkszentmihályi’s Optimal Learning Theory in creating an environment that allowed and encouraged students to engage in learning. Once this environment was set, Collins explained that teachers would find the engagement as satisfying and rewarding and the students would engage in their learning are more likely to repeat the learning behaviours. Collins explained lengthily.

So, it’s trying to empower the students to engage in this, and this is a bit of Mihaly’s theory where if you set up this environment, if you have a learning environment that’s very rich and very dynamic and quite active in questioning, he argues that we find that process actually very satisfying, very rewarding. And once you’ve learned that you can achieve that, you actually want to do it again. And so, it’s quite motivating, so when I’m doing my teaching I’ll set this
questioning strategy up in the first work. And by the third work, I usually about half of the
group have worked this out and they just do it which is fantastic…

Collins explained briefly about the way she employed questioning technique,

No right or wrong answer. Then what we see is teachers [teachers who accompanied students
during the visit] going, “I didn’t know that the kid could think of that.” So, it’s a different way
of questioning and permitting almost to have an opinion. And the kids go away excited. So,
it’s that notion of enthusiasm, excitement…

Collins’ response about her questioning technique aligned closely with the Flow Theory she mentioned
earlier.

7.8.2.3 The Teaching Strategies Employed by NGV Educators

The findings in relation to the instructional strategies employed by the NGV educators showed
that all the strategies were used for the purpose to encourage students’ connections with the artworks
utilised in lessons. The following is the discussion on the educators’ use of instructional strategies in
the implementation of the education programs at the NGV.

7.8.2.3.1 Questioning

Questioning was found to be the most common strategy utilised by the NGV educators. The
most common use of questioning was during the introductory phase of the lessons in which the
educators used questioning to gather information about student learning and their level of ability. The
NGV educators were provided with very little information about student groups who had booked into
their programs prior to the visit. With information limited to the topic booked, student age and the
school they were from, it was difficult for the educators to target their teaching effectively. Hence,
questioning was a vital strategy incorporated during the initial stage of the lesson and the data derived
from the strategy assisted the educators in deciding on the level of complexity of the lesson.

Emma Roberts and Linda Rogers provided a lengthy account of how questioning was
strategically used in their lessons. For Roberts, questioning was used within the context of the
identification of students’ zone of proximal development (ZPD), inquiry-based learning, and in
enhancing students’ understanding; when it was combined with explicit instruction, it was utilised as a method to control students’ behaviours and to garner their active engagement in lessons. Data derived from the questions asked fed Roberts’ decision making in identifying the right level to scaffold student learning. She would normally use questioning when the students were directly in front of a particular artwork. Collins revealed,

So, if we [Collins and students] look at an artwork, for example, we’ve got an artwork from the 1860s that has no electricity pole. So, one of my strategies is to try to get the kids to realize that electricity was not yet invented. So, I question them about things till they reveal that information themselves. I could tell them but what I want them to do is to think and keep commenting.

As explained by Collins, her questioning was directed to getting the students to think critically until they arrive at the answer themselves. Roberts related her questioning strategy to visual analysis approach,

The other thing I do is I will model the first work. So, I’ll model what I call prolonged observation and a kind of three for four-step analysis. And that will be what can you see, what can you observe, what is the obvious thing and then the next level of questioning is what are the details that you can see, are there any relationships in the painting, either between the people and the object. And then finally it will be interpretive what is the meaning behind this work and how do you justify your opinion. So, this notion of visual analysis, looking at a work, being able to absorb the different components of it. And then we might talk about the artist intention, the use of colours and lines and all those formal elements. And again, this comes back to the topic what the teacher wants to get out of the session.

Roberts’ questioning strategy was also evidenced in the teaching observation data. She employed thought provoking questioning that was directed to challenge students’ thinking and moved from one question to another in a way that would sustain students’ interest and engaged students in a meaningful discussion. She clarified,

And sometimes you might be wanting contrast. You know, it might be important especially for the students to really learn about. A particular work it’s good to contrast it with another
particular work. Now this contrast might be similar, so it’s comparing contrast. So, similarities and differences between particular works of art. You know, I often do that in a tour how this is different with an artwork that we saw before.

The audio recording of Rogers’ lesson indicated questioning as the most prominent technique during her lesson. The lesson involved students shown with seven different artworks at different places in the gallery. For example, in the first activity, the students were asked to lie on their backs and stare at the hand-cut stained glass that formed the ceiling of the gallery, she asked the students questions such as what are they looking at, what does it remind them off? After students provided some answers, she proceeded by providing information about the artwork. For the third activity, students were asked to identify the origin of the artwork based on the elements and features of the artworks through a series of questions posed by Rogers. For the fifth activity, students were required to identify the element in the artwork that indicated the era which the artwork represented, again, through the use of questioning. During the teaching observation, the observer noted the increasing complexity of the questions used and how the questions were targeted to different individual students.

7.8.2.3.2 Narratives

The use of stories or narratives was explained by Kate Collins. According to Collins,

Look, I find the kids.... Even in these days of the internet, and the opportunity to engage with the films, the TV and the rest of it at their fingertips, they still like to just sit and listen to a story if it’s a good presenter. And I find that really heartening. And the other great things about storytelling is that it makes a strong connection between art as a communicator and literature as a communicator. They do the same things but in different way.

7.8.2.3.3 Mystery Bag

Kate Collins explained that she discovered the strategy during her visit to Tate Modern Museum in London. She pointed out that the strategy was particularly effective in bringing out rather unique and various views about artworks from the students. She described one of her lessons which she used mystery bag,
We did it [mystery bag], and the child was with the teacher the other day... So, the kids take out some interesting shell or children’s toy or whatever, and in somewhere or other, they have to relate the descriptions of what they are having in their hands towards the painting. And it’s an amazingly good strategy for bringing out rather unusual interpretations of the painting.

7.8.2.3.4 Quotations

Another teaching strategy mentioned by Collins was the use of popular quotations and the students used this and identify artworks that represented the quotations given. According to her, NGV educators were developing a series of resources and one of it is the use of quotations. She said,

And another one that we’re going to do is to give the kids quotations, well-known quotations, and then get them to match that with the artwork.

7.8.3 Summary

The final research question explored the utilisation of the instructional theories, approaches and strategies by the MV and the NGV educators in the implementation of the education programs. The findings for this research question were based on the analysis of the semi-structured interview data and the data of teaching observation of the museum educators.

Constructivism was found to be a consistent theme in the educational theory employed by the museum educators in all the four museums. The development and implementation of the education programs based on the constructivist framework also aligned with the curriculum and the pedagogy proposed by the Department of Education and Early Childhood Development of Victoria (DEECD). The educators interviewed believed that constructivism provided learning environment that was unique to museum learning and created a learning engagement that detached from classroom learning.

Object-based learning (OBL) was an approach favoured by all museum educators at the MV museums and the NGV who participated in the study. It is interesting to note that though OBL was adopted to support the teaching and learning processes in these museums, the nature of objects utilised varied between one museum and another and was largely influenced by the types of collections and the focus of the museum. The Melbourne Museum, for example, engaged the learners with the use of
gadgets in their education programs. The Immigration Museum, on the other hand, relied on the use of a briefcase containing objects that represented migration and immigration stories in supporting the educators’ narrative approach. Whereas, at Scienceworks, the education programs carried out required students’ active participation through the adoption of hands-on activities. The education programs at the NGV focused on the use of artwork as the centre of teaching and learning activities.

The analyses of teaching strategies employed by the educators suggested the application of different strategies that linked very closely to the nature and operation of the museums. In the case of the Melbourne Museum and Scienceworks, for example, even though both organisations focused on experiential learning, the way this was achieved was unique to each museum. The implementation of teaching sessions at the Melbourne Museum aligned closely with technological advancement, active interactions between students and the objects through the application of most advance gadgets and tools. On the other hand, the education programs at Scienceworks stressed on active engagement and direct interaction with objects through hands-on activities. The collections at the Immigration Museum were vastly different than the other MV museums and the teaching sessions carried out were structured around instilling and enhancing students’ understanding of immigrations, immigrants and immigration histories. Hence story-telling was used as a strategy to achieve this purpose. The teaching strategies employed by the NGV educators were with a focus of enabling the students to identify the relationships between the artworks and the topics discussed.

7.9 DISCUSSION OF OTHER FINDINGS

In addition to the findings generated to answer the seven research questions which framed the study, three themes emerged that were derived from the analysis of semi-structured interview data. The themes were the challenges experienced by the educators in the implementation of the education programs; the museum educators’ view on the similarities and differences between museum learning and formal learning in schools; as well as the museum educators’ expectations on the roles that teachers should play during school excursion. The discussions of these findings are presented in the sub-chapter that follows.
7.9.1 Challenges in the Implementation of the Education Programs

There were a number of challenges experienced by the museum educators in the effective implementation of the education programs. These challenges are discussed below.

7.9.1.1 Engaging Lesson Delivery

Rosita Hudson, the educator with the Melbourne Museum, and Pam Weisz, the educator with the Immigration Museum related their experience in providing for engaging lessons. To Hudson, having a group of students who were completely switched off even before the lesson began was her greatest challenge. When she was teaching in Scienceworks, she was assigned to a group of students who misbehaved and were disengaged to her sessions particularly because the content had no relevance to the curriculum that the students were doing at that time. In addition, the group’s excursion was during their off day therefore they saw no relevance for being there. Few students who were enthusiastic acted otherwise because they feared it would not be cool to the others if they were to engage in the session. She tried to make her lesson more engaging by making it appealing to the students’ interests and preferences. Hudson admitted that it was really challenging because the students themselves did not want to engage.

7.9.1.2 Mismatch between Student Ability and Lesson Complexity

Targeting teaching at the level below students’ actual ability was also another challenge faced by a number of educators. Hudson admitted to experiencing this issue when the group she was assigned to was already quite advanced in their learning. Midway through her lesson, she had to think of new questions to pose that could be better targeted to their levels, thought of new direction to take and new information to feed.

From Weisz’s experience, students’ level of engagement differed, they might be more engaged in one activity and less engaged in another. She tried to get everybody to focus by asking questions to the less involved students or used her voice in an animated manner to excite the students when she felt that the students had gradually lost focus. She said that there was not much that she could do with a 45-
minute session but she would be happy if the students left with positive experience and that her teaching reinforced what the teachers taught in schools.

7.9.1.3 Fulfilling Teachers’ Needs

The challenge, to Alicia Martin, was in providing learning experiences to students that catered for teachers’ specific focus in student learning. Martin expressed that teachers sometimes did want the lesson to have an emphasis on different aspects than what was provided in the pre-fixed program. And even though she tried to fulfil these demands, it was quite difficult. Martin was the only educator at the museum with the responsibility in program development and training of presenters. All the lesson plans needed to be comprehensive and detail so that when they were handed over to the presenters, these presenters would be able to maintain consistency of the lessons. Therefore, most education programs were fixed and were implemented in a standardized manner. Martin herself had few teaching loads as her work focus was in program development. With the limited number of staff, the presenters’ lack of teaching qualifications and the role Martin had to fulfil in developing programs, it was very difficult for teachers’ request for customisation to be met.

7.9.1.4 Meeting the Changes and Development in Content Knowledge

One of the challenges in implementing education programs at Scienceworks included the need to update the content knowledge of the programs in line with the discovery of new knowledge. An example of these, presented by Peter Milan, was the space programs ran by the Planetarium. In introducing a new program, there was a possibility that the programs needed to be streamlined and improved on. The robot program being new was introduced to a group of students and it was found that some of the terms did not go well with students’ understanding and had to be explained verbally several times. Students were also required to do a lot of navigations to move the robot and this confused them in the process. Milan used this experience and feedback from teachers and students to improve the programs.
7.9.1.5 Being Flexible and Knowledgeable in Accommodating Changes

When asked about the challenges for teaching in the gallery, Webb, Rogers and Roberts’ responses were similar. Reese Webb explained that working in a gallery with displays that constantly changed and replaced, the educators needed to be flexible. They also needed to work around with what the curators do. Webb provided one instance that there were artworks that came highly recommended in running teaching sessions for a particular topic or focus area, an example of this was the *Federation Series* by Julie Darling. The curators, however, decided to put the artworks away to enable the display of other artworks. This was when the educators needed to compromise and had enough knowledge of other collections in the gallery to still be able to carry out their teaching sessions effectively. Similar to Webb, Rogers believed that educators needed to be resourceful, flexible and considered the back-up plan or alternative when planning for lessons. From her experience, there was a chance that a particular artwork could not be used because it had been moved. Therefore, the educators had to be prepared and knowledgeable enough about the collections to be accommodative. Roberts viewed highly the importance of flexibility. To her, possessing sound knowledge of collections was essential so that teacher could be accommodated appropriately when a particular artwork could not be used.

7.9.1.6 Lack of Consistency of Teaching across Educators

Emma Roberts and Reese Webb both confided that there was a need to ensure consistency in the lessons delivered by all NGV educators. Roberts felt that the educators carried out their lessons in isolation, and discussions between the NGV educators been assigned with the same topics should be made a norm in the gallery. Even though Roberts personally believed that the incorporation of one’s teaching styles into teaching implementation was important, consistency in lesson delivery was also crucial in ensuring standardisation across educators. Webb was in the opinion that certain amount of consistency should be expected in lessons and presentations particularly when the educators worked collaboratively.
7.9.1.7 So Much to Do, So Little Time

Kate Collins felt that one of the greatest challenges to the educators was when they had to achieve the learning outcomes stated for lessons within one contact hour. Collins explained that an introduction session had to be included in the session if the group consisted of students who had never come to the gallery prior to the excursion. This reduced the time available in the delivery of the planned content. There were also cases where students had no prior knowledge of Indigenous people and their artworks (one of the topics of the NGV’s education programs). This would often consume 15-minute session to encompass as much information as she could about what it was to be indigenous in Australia and the whole function of arts in indigenous community, as well as how it was different from the western traditions.

7.9.2 Assessment Practice

The museum educators’ assessment practice was another theme that emerged. Interestingly all museum educators participated in the study admitted to using the same assessment form in their lessons. The following is the discussion of the findings.

7.9.2.1 The Form of Assessment Employed

The findings derived from the semi structured interview data and the teaching observation checklist of all the educators as well indicated the educators’ use of informal assessment as an integral aspect of teaching and learning carried out at the museums.

The word ‘informal’ in informal assessment represents an assessment technique or a practice that is embedded into classroom routines and learning activities without score implications (Bell & Cowie, 2001), hence its ‘informal’ nature (Zakaria, 2008). This form of assessment provides immediate evidence of learning which teachers can act upon. Unlike formal assessments that can only be administered and implemented several times during a particular teaching and learning period, informal assessments are more cost effective, requires minimal amount of planning and data is obtained continuously (Bell & Cowie, 2001; Duschl, 2003; Zakaria, 2008)
7.9.2.2 Context for the Use of Assessment

Within the context of education programs carried out at museums and galleries, the short-term nature of the contact between educators and the students placed great emphasis for data from informal assessment. This enabled the educators to immediately plan and execute intervention strategies and modified their instruction in a manner that would appeal more to the learners.

Informal assessments were found to be crucial to the educators particularly during the first ten to fifteen minutes of the lesson. This was so because the educators did not have much information about their audience aside for the topics that they were booked into, their age and the schools the students were from. The lack of information about students’ ability level, their interests and socio-economic background made it difficult for the educators to appropriately and effectively target their lessons. Therefore, the educators usually spent the first part of their lessons gathering as much information about the learners before they decide on the complexity of the lessons.

In Roberts’ case, for example, she had to teach students whom she had very little information about their abilities and learning. Hence, she would use the initial phase of the lesson trying to identify students’ zone of proximal development (ZPD) and then used the rest of the lesson to scaffold student learning. The use of assessment data in the identification of learners’ ZPD help teachers in providing for instruction that supports developmental learning (Burns, 2000). Assessment data informs teaching practice, and the identification of ZPD would assist teachers in the utilisation of targeted and differentiated instruction (Burns, 2000).

7.10 SUMMARY OF THE CHAPTER

The chapter presents the discussion of findings for the seven research questions which framed the study. The findings were derived from the analysis of data collected through the means of semi-structured interview involving the museum managers and the museum educators; teaching observations of the museum educators and the analysis of documents. The research questions explored the management and implementation of education programs from the perspective of management and administration of resources; the development, implementation and evaluation of the education programs; as well as the pedagogy which supported its implementation. It was found that the nature of
the collections and the focus of the museum influenced the theme and the manner in which the education programs were developed and implementation. Though the MV museums were governed by the networked-based organisational structure, there were variations in the way the education programs were carried out by each MV museum. The education programs at the Melbourne Museum were implemented through tasks and activities which required students to employ their tactile and visual ability. At the Immigration Museum, the focus of the education programs was to enhance the understanding of migration and immigration history of Australia through pedagogy which supported the delivery of historical information, whereas Scienceworks required students to demonstrate their kinaesthetic skills in the learning of scientific facts and topics. The NGV’s focal point in its education programs were the artworks, the education programs at the gallery were developed and implemented to deepen student understanding of these artwork. The use of instructional theories, approaches and strategies aligned with the focus of each museum.
CHAPTER EIGHT
CONCLUSION, IMPLICATIONS AND RECOMMENDATIONS

8.1 INTRODUCTION
The study has explored the development and implementation of the education programs at three museums and one gallery in Melbourne, Australia. The study assumed a comprehensive approach in defining and describing how the museum programs were carried out. In addition to lesson delivery by the museum educators at both the MV museums and the NGV, the participation of the museum managers in the study provided a perspective of program implementation from managerial standpoint.

This chapter begins with a review of the major insights reflected from the findings of the study. This involves the discussion on the key findings of the study, explanation of the organisational norms of the MV museums and the NGV, with connections to museum practice and review of literature made. The implications of findings are discussed in relation to the administrative aspects in supporting museum education; development and implementation of the education programs; and museum pedagogy. Recommendations for future studies are made at the end of this chapter.

8.2 REVIEW OF FINDINGS
The study examined the education programs at the Melbourne Museum, Immigration Museum and Scienceworks (Museum Victoria) and the National Gallery of Victoria (NGV), the main museums in Melbourne, Victoria. The participation of four museum executives, one from each museum, provided insights on the organisational and managerial aspects behind the development and implementation of the education programs. Seven museum educators participated in the study (four educators from the MV and three educators from the NGV) enabled findings in relation to the planning and execution of the education programs to be generated. Data was gathered through the means of semi-structured interview sessions involving the museum executives and museum educators; teaching observation of the museum educators; and the analysis of documents related to the operation of both museum organisations. The interview data and selected documents were analysed thematically, whereas the teaching observations were documented through the utilisation of a checklist.
8.2.1 The Key Findings

The discussions presented in the previous chapter detail the findings for seven research questions which serve as the foundation for this study. The discussion in this sub-chapter takes a holistic view of the findings, which some findings merged to explain the practice of both museum organisations. The findings are also compared to current practice in museum education and museum pedagogy through the comparison made with the review of literature.

8.2.1.1 Support from Management

The first findings indicated the significance of museum management in influencing the culture of program planning, development and implementation; as well as the practice of museum educators. The networked-based organisational design adopted by MV streamlined all operations in its museums, hence resulting in similar standard operating procedures within each and across all MV museums. The three MV museums participated in the study followed the same protocol in the development, planning and implementation of education programs. Before networked-based organisational structure was adopted, MV museums were hierarchical in structure, with each MV museum with different structure and slightly with different job positions.

The findings contradicted literature which conveyed the lack of confidence in museums as educational institutions. Sandell and Janes (2007) indicated the uncertainties faced by people inside and outside museum institutions over the credibility of museum personnel in carrying out relevant education programs. Kristinsdottir (2016) felt that museum educators were uncertain of the future of museum education due to challenges in museums’ organisational structure. Museums were said to be in the state of ‘flux’ due to these uncertainties (Sandell & Janes, 2007). Morgan (2013) found that the museum staff viewed their establishment as within a state of static due to their over concern of the museum ability to survive. Such was the morale of MV staff in the early 2000 when the museum organisation experienced lack of sufficient funding. The MV however managed to break out of the possibility of having to close down through a method rarely employed by other museums. In addition to the adoption of a networked-based organisation, the organisation retained all its employees except three of its top management employees.
The findings also indicated that the networked-based structure employed by MV removed employee attachment to only one museum, to all employees serving all the three museums, enhancing the mobility of its employees moving from one museum to another and increased the employees’ knowledge about all MV museums. For top management personnel, it was common for a manager to have more than one museum under his/her care. This was supported by the interview data which showed that the managers were able to explain not only about the particular MV museum that she was interviewed for, but also about the management and operations of other MV museums.

The findings in relation to the managerial aspects which supported the Education Unit and the education programs for both the MV museums and the NGV indicated that support from top management was vital. It was found that both museum organisations placed strong emphasis on the importance of education programs and the roles in community, hence the organisational vision, mission and aims, the strategic direction and planning were accommodated towards supporting the pursuit for education. The vision, mission, strategic direction and planning which emphasized on the education of public aligned well with the framework and key objectives outlined by the Department of Education and Early Childhood Development (DEECD) Victoria, making it easier for the museum managers and educators to develop and implement curriculum-linked programs.

The top down support eased the management and implementation of education programs at departmental level. The effectiveness of the education programs carried out at the participating museums was also contributed by the organisation’s marketing efforts, allocated budgets and the funding secured.

8.2.1.2 Influence of Nature and Theme of Collections on Education Programs

One of the key findings to the study was the influence of museum focus and its distinctive collections on the use of pedagogy and instructional strategies that were unique to each museum, and the emphasis each museum placed in its learning tasks and activities. The Melbourne Museum, Immigration Museum and Scienceworks, although were governed by Museum Victoria, embraced different ways of program implementation. The Melbourne Museum, for example, showcased
collections that highlighted natural history, culture and human development. Its education programs were framed by community of inquiry approach through the use of questioning. Another approach unique to the museum was experiential learning which was achieved through the use of gadgets and IT-related tools such as flip cameras, iPad, camera and storage devices in task completion. The Scienceworks, operated as a science-based museum, also focused on experiential learning-based pedagogy however this was promoted through physical engagement in enhancing learners’ interaction in their approach to learning tasks and activities. The Immigration Museum, on the other hand, exhibited collections related to migration and immigration history. The narrative approach was prominent to the implementation of the education programs in this museum. The NGV featured paintings and artworks of different era as its focal point. The instructional approaches and strategies employed were directed towards deepening learners’ understanding of these artworks.

The findings provided detail on the influence of museum collections on its museum pedagogy. The literature reviewed emphasized the relationship between museum collection and museum pedagogy from the perspective of providing a whole new learning experience as compared to learning in schools (Hein, 2005; Hein, 2006; Wetterlund & Sayre, 2009). Another aspect mostly ventured in the literature was the use of collections as objects to assist students’ understanding and engagement in the course of their learning (Carr et al., 2012; Castle, 2006; Ng-He, 2015; Tran, 2007; Vallance, 2006). However, there were no specific connections made on the nature and themes of collections of museums and how they specifically influenced the manner in which their education programs were delivered.

8.2.1.3 The Utilisation of Education Theories

The findings showed an inclination towards constructivist theory and constructivist-based approaches by the museum educators at the MV museums and the NGV. The museum managers and educators strongly believed that constructivism was the most appropriate framework in the development and implementation of the education programs at the museums, primarily because it did not conform to the traditional type of learning influenced by behaviourism. In addition, constructivism promoted flexible learning (O’Neill, 2007), and free-choice learning (Falk & Dierking, 2002) which took place in an informal and a less structured environment.
Four educators (two from the Immigration Museum and two from the NGV) were found to employ a combination of both constructivist and behaviourist-based strategies in their lessons. The findings were derived from the semi-structured interview data and the data from teaching observations. The educators would allot the initial phase of their lessons on imparting information before they embarked on constructivist-based activities. The main reason behind the utilisation of behaviourist strategies was students’ lack of knowledge on a given topic, hence the educators needed to ensure that sufficient information was provided in order for the students to attempt the designed tasks and activities successfully. The behaviourist strategies, however, did not characterize every lesson and would only be employed when the students needed background knowledge before their learning can be scaffolded.

Just a year ago, Kristinsdottir (2016) contested that the field of museum education experienced uncertainty due to serious practical and theoretical challenges in its organisational structures which left museum educators in precarious position. In addition, literature which explored museum pedagogy seemed to suggest that the shift towards constructivist based teaching had never taken place and learning environment was still characterized by behaviourist pedagogy (Sandell & Janes, 2007). The review of literature pointed out that there was a notable difference in museum pedagogy prior to the year 2000 and after. Discussions on the characteristics of museums’ education programs described the pedagogy as focusing on content with the employment of teacher-centred strategies (Cox Petersen et al., 2003; Flexer & Borun, 1984; Parks, 1985). The literature on museum pedagogy took a different turn in the mid-2000, with many authors reported the preference towards instructional approaches and strategies framed by constructivist theories (Carr et al., 2012; Castle, 2006; Nielsen, 2015; Rose, 2014; Tran & King, 2007).

The findings also pointed out a number of pedagogical theories and approaches that had yet to be the focus of literature in museum pedagogy. This included the Mihaly Csikszentmihalyi’s Theory of Flow (1992) and the use of informal assessment data in the identification of students’ zone of proximal development (ZPD).

The Theory of Flow articulated by Mihaly Csikszentmihalyi (1992) found that artists had an unusual level of concentration and engagement while completing their paintings, and this concentration would quickly subsided once the paintings were completed. Hence, the theory proposed that human
beings were equipped with basic drives which motivated and compelled them to initiate and finish a task with high level of engagement and concentration (Csikszentmihalyi, 1992). Mihaly added that the heightened flow of concentration would result in deep learning and high level of work satisfaction.

Emma Roberts, the NGV educator, used the theory to accommodate appropriate learning environment in her lessons which would encourage student engagement. Once the environment was set, according to Roberts, students would find learning enjoyable and were more likely to repeat the positive behaviours, whilst teachers would find the experience satisfying and rewarding. Roberts added that the notion of enthusiasm and excitement as well as the different kind of questioning employed in the method would influence deep learning in students.

Roberts also mentioned the identification of students’ zone of proximal development (ZPDs). ZPD was explained in a number of articles in museum education (Dardanou, 2011; Jensen, May 2010; Thorhauge, 2014), however, the concept was not exclusively derived from research findings, it was proposed as an appropriate method in museum education. ZPD was first mentioned as a concept by Vygotsky in his Theory of Cognitive Development in 1930s (Bowler, Large, Beheshiti, & Nesset, 2005), and it was described as the gap between the knowledge and skills which learners have gained and the ones have yet to be gained (Zakaria et al., 2016). Zakaria et al. (2016) added that teachers’ ability in identifying this gap or ‘zone’ and to target teaching at this zone would lead to meaningful learning.

The data on ZPD assisted Roberts in targeting students’ level of ability for scaffolding of learning. Roberts revealed that she would employ inquiry-based learning particularly in the initial phase of her lessons, specific questions were directed. Student responses then would be used to aid the identification of individual students’ ZPD.

8.2.1.4 The Unique Use of Objects for Each Museum

Another key finding was the strong emphasis for object-based learning (OBL) in the education programs across all museums participated in the study. It is interesting to note, though, that the nature of collections and the focus of each museum influenced the distinctive manner in which the objects were utilised. At the Melbourne Museum, objects used (such as iPad, camera, flipped camera) required active engagements of students in activity and task completion. In the Immigration Museum, historical
objects were used to assist story-telling which focused on the history of migration and immigration of Australia. At Scienceworks and NGV, objects became the focal point of lessons, however, the manner in which the objects were used and showcased were different between the two museums. Object use at Scienceworks required active interaction and manipulation on the part of the students. The observed lesson by Peter Milan on Robotic and Sensor required students to assemble components of robots and manoeuvre the assembled robots, an evidence of lesson stimulated by active interaction with objects. The topics of the education programs offered at the NGV were directly linked to the artworks in the gallery, hence these artworks became the centre of lessons.

It was also found that the OBL approach could be integrated into a repertoire of pedagogy in enhancing learners’ engagement. The museum educators at the Immigration Museum used objects that represented immigration and migration history in supporting their narrative approach. Specifically, objects were placed in a briefcase and they would be taken out and showcased to students during the story-telling. At the Melbourne Museum and Scienceworks, objects were utilised to promote experiential learning. The use of objects at this museum was embedded with approaches such as the thinking-oriented curriculum, multiple intelligences and the community of inquiry. Similarly, the utilisation of objects at the NGV were often the result of its integration with other approaches. The approaches which characterized the education programs at the gallery were similar to the ones adopted by the MV museums. Objects were used to complement approaches such as the thinking-oriented curriculum, multiple intelligences and the community of enquiry. In addition, the use of objects at the gallery would either characterize the lessons with process-based or product-based orientations. Lessons with a focus on product-based approach placed more emphasis on the lesson outcome, particularly in the production of objects. In process-based lessons, the emphasis was placed on the learning skills and experience. The decision whether a lesson should be based on either process or product-based was dependent to the NGV educators or request made by teachers for negotiated programs.

The discussion above indicated the similarities in the instructional approaches employed by the educators at the MV museums and the NGV. Furthermore, both organisations used constructivism and behaviourism as framework for their lessons. Even though constructivist approaches and strategies were norms in these museums, there were MV and NGV educators who relied on teacher-centred components
in their instruction particularly when information needed to be imparted to students. However, the utilisation of behaviourist approaches was not exclusive with the educators embedded element of constructivism to a certain extent in their lessons. Hence, it was observed that the utilisation of educational theories, instructional approaches and strategies which framed lesson delivery at the MV museums and the NGV were not significantly different.

The findings were congruent with current museum practice, the review of literature carried out indicated strong preference for OBL in the implementation of education programs and the integration of OBL with other instructional approaches. The review indicated that OBL use was the results of its incorporation with other instructional approach or method. OBL was commonly associated with inquiry-based learning (Biggs, 2011; Din, 2004; Hooper-Greenhill, 2000; Mudd & Beran, 2003), this was also supported by the findings in this study which demonstrated the use of questionings in relation to the main objects used. The review of literature also pointed out the application of OBL in the employment of narrative approach (Biggs, 2011; Fisher et al., 2008; Giaccardi, 2006; Saroj, 2014; Staats, 2011). This aligned with the practice of the educators at the Immigration Museum who were found to use narrative approach as prominent approach in their lessons. Narrative sessions carried out would be assisted by a briefcase containing real objects or replicated objects which the educators would sequentially showed to students depending on the parts of the stories. The use of objects to assist storytelling strengthened the learning experience as the objects provided deeper engagement and enhanced meaningful learning.

8.3 IMPLICATIONS

In this study, I have sought to investigate museum education in relation to its education programs. Specifically, the study assumed a top down approach by first addressing the setting in which the education programs were carried out through the examination of the aspects of museum management which supported program development. These were made possible through the interview sessions with the museum executives and the analysis of selected documents which described museum management practice and the challenges faced in positioning their museums as education hub. I also examined the practice of museum educators in the planning and implementation of education programs,
noted their pedagogical practice through teaching observation, and understood their rational and aspirations from the interview sessions. The findings addressed seven research questions which collectively represented comprehensive overview of the education programs in four museums in Melbourne, Australia in relation to its corporate information, managerial planning, program development, implementation and evaluation as well as aspects related to educational theories, pedagogical approaches and strategies which framed the programs.

8.3.1 A Reference for Museum Leaders on the Establishment of an Education Unit

The first main contribution of the present study is that it provides comprehensive reference to a museum which aspires to integrate museum education in their portfolio through the provision of curriculum-linked programs to school audience. The following is the discussion of how the study can assist museums to accomplish this:

8.3.1.1 Supports Provided by the Top Management

The establishment of an Education Unit in museums requires support from the top management. Formulation of organisational vision, mission and aim which supported museum education and the development of strategic planning strategies need to reflect the museum’s commitment towards its education programs. Strong footing by the museum administration, though may not be the only precursor for the long-term success in the organisation of museum education, is one of the strongest factors.

Commitment towards museum education, as evidenced by the findings of the study, should also be demonstrated through allocation of budgets and rigorous marketing efforts to promote the education programs. Sufficient funding in ensuring long term support and success of education programs may be one of the issues faced, therefore, the management may include in their strategic planning and direction for an increase in partnerships and collaborations with external organisations. Such partnership and collaborative efforts would lessen museums’ financial burden particularly in the availability of funding and provision of appropriate resources in support of the implementation of education programs.
8.3.1.2 Change is Inevitable

The findings also related the major transformation and unconventional measures undertaken by the Museum Victoria’s (MV) executives in the museum’s survival for existence. Threatened by the possibility of having to shut down by the end of 2000 with financial strength enough to cover only 40 percent of its employee wages, the museum took a radical step through the adoption of networked organisational structure. The structure aligned all MV’s establishments into a network of organisations which reported to the same management. The operations of each department and unit were examined; employee roles and functions were revised; with the museum programs given a new direction.

The MV’s experience provides guidance to other museum leaders in overcoming challenges particularly one that is financially related. It also indicates that change is inevitable. Museum managements need to be dynamic in their approach and be more susceptible to the needs of the community. I have stated, in various parts of the dissertation, the importance for museums to shift away from their traditional roles and assume more active roles within the society. Change is eminent for museums to be more relevant.

In the education world, the content, pedagogy and classroom resources are continuously reviewed and updated, to be more relevant to 21st century education (Christen, 2009; Larson & Miller, 2011; Posner, 2002; Warlick, McLeod, & Lehmann, 2011). Museums too need to revive their roles and be flexible in adopting changes, from time to time, in ensuring that museums stay relevant within the digital age society. Martin (2003) reminded that cultural organisations, such as museums, need to continuously recognize current realities, anticipate future possibilities while maintain values of learning, human rights, cultural diversity, equitable access and incorporate museum organisations as part of an integrated whole. He stressed the importance for museums to innovate new ways in assessing learners and provide new means for visitors to engage with collections.

8.3.1.3 Attributes of Impactful Museum Educators

The museum educators at the MV museums and the NGV were experienced teachers before they assumed their current roles. This was found to be one of the factors which contributed towards the effectiveness of the education programs at these museums. The knowledge of the curriculum, pedagogy
and learners were major assets. The integration of the knowledge with the knowledge of collections enabled the museum educators to deliver lessons that effectively showcased the collections as focal point; through the use of pedagogy and objects that engaged learners with the tasks and activities. This also serves as reference for museum managers to recruit potential museum educators among those who already acquire knowledge in education and instruction.

In the anticipation of future success and museum capacity to stay relevant in the digital age economy and the ever-changing needs of the society, museum educators need to continuously update their knowledge and skills in relation to issues and development in education and keep abreast with new pedagogy, approaches and strategies in ensuring that their instructional practice is in line with and supports classroom learning. 21st century education, for example, has paved many paths to learning: learner-centred and personalized instruction (Centre for Educational Research and Innovation, 2008; Rotherham & Willingham, 2009; Scardamalia & Bereiter, 2006) collaborative learning and project-based instruction (Centre for Educational Research and Innovation, 2008; Rotherham & Willingham, 2009) co-construction of deep and meaningful learning (Hattie, 2008; Jan, 2017; Scardamalia & Bereiter, 2006) assessment for learning (Centre for Educational Research and Innovation, 2008) digital footprint and technology-integrated learning (Jan, 2017; Scardamalia & Bereiter, 2006) problem solving, innovation and creativity (Jan, 2017; Rotherham & Willingham, 2009) and global (Centre for Educational Research and Innovation, 2008; Jan, 2017). Therefore, the education programs developed and implemented should centre around the utilisation of current pedagogy, assessment and technology.

8.3.2 Acquisition of Pedagogical Knowledge for Museum Educators

The study provides museum educators with a reference towards current museum-based pedagogy in relation to the utilisation of educational theories, instructional approaches and strategies in museum setting. Specifically, it provides knowledge for museum educators’ professional development which adds onto their expert knowledge. The findings derived from the study present specific information in relation to the employment of particular pedagogy appropriate to distinctive museum setting. The museums participated in the study represented different focus and themes for their collections. The same approach employed, for example, the object-based learning (OBL) approach, was
implemented differently in each museum. This is one of the gaps in the literature addressed by the findings of the study. In the literature that I reviewed, I was able to find only a few which included the discussion of museum pedagogy with connections made to the varied contexts and themes of museum collections. One of it was in a project report by Barth, Perreault, Santos and Shattuck (2013). However, their publications based on this report addressed other aspects and the discussion on OBL approach in relation to specific museum collection was very limited. Another was in the form of an online flyer discussing the utilisation of OBL for school groups in museums by the Museums and Galleries of NSW (2017). Therefore, the findings from this study provide rich information to museum educators in matching pedagogy to specific museum collections.

8.3.3 Acquisition of Pedagogical Knowledge for School Teachers

Another implication involves the enhancement of pedagogical knowledge among school teachers. Some of the instructional approaches and strategies employed by museum educators documented in this study are transferable to school setting. School teachers could diversify their teaching approach through the utilisation of approaches and strategies promoted in museums. The OBL approach, for example, could be used in a number of subjects offered in schools (such as history, science, geography, arts and language) to enhance student understanding of objects. Teachers could also adopt the philosophy of thinking-oriented curriculum, experiential learning, multiple intelligences and community-of-inquiry and integrate its use in their classrooms. Common strategies used in lessons such as questioning can further be enhanced to scaffold student learning and increased students’ cognitive complexity on the understanding of topics.

8.3.4 Awareness of Museum Education among School Leaders and Teachers

The reporting of the study would increase the awareness of school teachers and principals towards museum education and the education programs offered as alternative to classroom learning. This would encourage teachers to organize school excursions to museums and utilize the education-based services in ways that are beneficial to both teachers and students. It also would encourage school principals to embrace flexible learning philosophy and promote museum excursion to school teachers.
Students would also benefit from such museum excursion. The difference in learning environment, particular the one which promotes active learners’ interaction with objects, would increase student engagement with task at hand. The different way in which lessons are approached would heighten student understanding of the topics taught and appeals to learners who prefer teaching styles other than textual and auditory.

8.4 RECOMMENDATIONS

The following recommendations emerged throughout the course of the study. These recommendations are targeted for more effective education programs and communication between educators and teachers.

8.4.1 Clarification of roles and expectations

School teachers need to understand the roles played by museum educators during museum visit and the implementation of education programs. They also need to be aware of the roles they are expected to play. Similarly, museum educators need to understand teachers’ expectations on them, communicate their own expectations and clarify the roles of teachers for more effective execution of the education programs. A way to achieve this is by providing teachers with a piece of papers upon registration containing information with regard to the things teachers are encouraged to do prior, during and after lesson.

8.4.2 Recommendations for pre-and post-visit tasks and activities

To ensure connections between the education programs carried out at the museums and classroom learning, museums may consider recommending pre-and post-visit tasks and activities to teachers, depending on at what point of learning the unit is covered at the museum. The recommendations could also serve as a guide for teachers in carrying out suitable activities before or after the museum visit.
8.4.3 Request for more information during booking

One of the major challenges experienced by the museum educators in the implementation of the education program was the limited information they were provided with about the learners who booked into their programs. All the educators who participated in the study agreed that information in relation to where the students were at with regard to the topic booked and the group’s level of ability would greatly assist the educators in carrying out their lessons more effectively. Therefore, it is recommended that the Bookings and Enquiry Department at the museums and galleries provides an open-ended response that teachers could fill up (if booking is made online) or respond to (telephone booking) in relation to the group’s level of ability and where the students are in their learning of the booked topic.

The personnel at the Booking and Enquiry Department which answers teachers’ phone calls might also want to recommend teachers to contact the subsequent museum educators prior to lesson delivery.

8.4.4 Lesson plan as a culture

At the point of data collection, there was an intention by the MV educators to start developing written lesson plan as a culture. Written lesson plans would ensure standardisation in lesson delivery across educators. Standardisation is important in ensuring that students are provided with similar learning experience. Hence, it is recommended that museums embrace written lesson plans as a culture. Given the nature of museums and galleries which are different from school, lesson plans in these institutions can be prepared along with program development. Therefore, a written lesson plan may not necessarily have to be prepared by museum educators, they can be written up by the program developers.

The lesson plan, however, should not be used as a tool to control educators’ creativity and contrive the manner in which lessons are delivered. Though there is a need to ensure standardisation of the same education programs delivered across groups of students, the educators should be given freedom to exercise their own teaching styles and approach. A balance has to be achieved in the way lesson plans are prepared to allow for standardisation and educators’ flexibility.
8.4.5 An assessment system for education programs

The educators’ employment of informal assessment practice was one of the emerged themes for this study. This was inferred from the interview and teaching observation data. None of the educators explicitly addressed the topic of assessment, however, their assessment practice was elicited based on the data which the educators derived from their questioning strategy and observation particularly in the identification of groups and individuals’ level of ability.

Literature which delved into the assessment practice of museum education indicated a mismatch between the increasing number of education programs implemented and the assessment practice utilised (Gorman, 2007; Griffin & Paroissien, 2011) Griffin, (2011); However, the attention given to the assessment in museum education is increasing (Gorman, 2007; Hicks et al., 1996; Martin, 2004; Wetterlund & Sayre, 2009) due to the unique nature of educational assessments in museum and gallery settings (Devito, 2005; Garoian, 2001; Martin, 2004).

It is recommended that museums and galleries which offer education programs establish formal assessment system which provides the educators with tools and mechanism to carry out formal and informal assessments in their instructional practice. This would provide valuable data that educators can immediately use while the teaching is ongoing, and data of learning which can point out lesson effectiveness. The assessment data could be valuable to teachers too as it serves as evidence of student learning.

Museum educators’ knowledge of informal assessments in relation to its tools, strategies, implementation and the ability to link assessment data to practice should be given a strong emphasis. Informal assessment was not explicitly stated by the museum educators and their informal assessment practice was deduced based on the demonstration of its implementation in the observed lessons. Given the importance of informal assessments in supporting teaching and learning processes in museums and galleries, it is recommended that professional development programs for museum educators to integrate knowledge and skills of carrying out informal assessments.
8.5 DIRECTION FOR FUTURE RESEARCH

Studies which examine the effectiveness of museum’s education programs from teachers and students’ point of view would bridge the gap in the empirical data provided in this study. Teachers’ view of the effectiveness of teaching and learning processes and students’ conceptions on the learning experience they gathered from museum visit would provide a more comprehensive finding of the effectiveness of the education programs implemented. Hence, it is recommended that studies which attempt to explore the quality of museum education also consider teachers’ and students’ perspectives.

A mixed methodology with the utilisation of both qualitative and quantitative frameworks would yield richer data as the quantitative approach enables data to be gathered from wider sample. Each museum is unique and different given the nature of its collection, hence, the education programs from one museum to another would also be inherently different. Data gathered quantitatively would include wider sample size which encompasses higher number of museums. Such data would provide better understanding of the education programs and instructional practices as well as the perspectives of museum educators.

One of the aspects which can potentially be explored in studies that look at museum education is the concept of change: the susceptibility of museum as an organisation to embrace change and museum educators’ willingness to change elements in their practice. I have illustrated in different parts of this report that change is eminent. The changing demographic of the society, the shift in interests and styles of learning, and the advancement of technology: these create a demand for personalized museum experience (Martin & Toon, 2003). Hence, museums need to be able to shift from one-fits-all experience to a customized experience that meets individual visitors’ needs.

8.6 SUMMARY OF THE CHAPTER

The concluding chapter presents the key findings of the study together with the implications, recommendations and direction for future research. The study documents the education programs implemented in two museum organisations in Melbourne, Australia, from managerial and implementation perspectives. One of the major implications of the study is the use as a reference for museum leaders and policy-makers who intend to establish an education unit and provide curriculum-
linked programs to its school visitors. Recommendations made in this chapter aimed at improving the communication between museum educators and school teachers and easing museum educators’ approach to their lessons. Finally, two aspects of museum education are proposed to be explored and the findings derived from such studies would further inform the practice and management of museum education.
REFERENCES


Kolb, A., & Kolb, D. (1999). Bibliography of research on experiential learning theory and the Learning style inventory. Department of Organizational Behavior, Weatherhead School of Management, Case Western Reserve University, Cleveland, OH.


Tran, L. U. (2002). The roles and goals of educators teaching science in non-formal settings. (Master’s Thesis). North Carolina State University Retrieved from https://repository.lib.ncsu.edu/bitstream/handle/1840.16/830/etd.pdf?sequence=1&isAllowed=y


APPENDICES

Appendix 1: Interview questions for Museum Educators

SEMI-STRUCTURED INTERVIEW FOR MUSEUM EDUCATORS
Museum Victoria (MV) & National Gallery of Victoria (NGV)

Interviewee : 
Date of Interview : 
Time : 
Location : 
Organisation : 

A. DEMOGRAPHIC QUESTIONS/BACKGROUND QUESTIONS
1. As a start, could you please provide me some information about yourself and your role in this institution?
   a. Current Position, types of work (Information on job scope), how long in present position, and your previous work position prior to present job etc.
   b. Information on academic background and/or art background.

B. THE ORGANISATION OF TEACHING (PLANNING)
1. What kind of information (demographic information) about the school groups that museum educators should have before they can commence their teaching sessions?
2. How do museum educators plan their educational experience for students? What is the process of planning that they go through?
3. Is the teaching preparation by educators in museum similar with teacher in school?
   a. If YES, what kind of preparation do they do?
   b. If NO, or it is not important?
4. Does each museum educator have to plan their own lessons?
   a. If YES, what kind of teaching plans?
   b. If NOT, why? Or it is not important?

C. EDUCATIONAL THEORIES
1. Do you use/refer to any particular educational theories or framework in your teaching such as constructivism, behaviorism, etc.?
   a. If YES, what types of educational theories or framework?
   b. If NOT, why? Are there any other approaches? Or it is not important?
2. How does the teaching process take place in the Melbourne Museum?
   a. Is there any special approach or a module to deliver the lesson?
3. Through your experience, is there an appropriate way of teaching in the Museum?
4. Do you think children/visitors learn differently in museum than in school?

D. STRATEGIES AND APPROACHES
1. A museum educator uses a variety of approaches and strategies in their teaching. What are the techniques in your teaching?
2. Could you explain how you organize your teaching?
3. How long does it usually take to complete a single teaching session?
   a. How do you divide the time?
4. How many students are involved in one teaching session?
   a. Do you break them into a small group?
5. How many sessions do you normally handle in one day?
6. Do you use object or object-based learning approach in your teaching/display in your teaching?
7. How do you choose the objects or the displays?
8. Who determines the selection of gallery/section in the museums for teaching session?
9. Besides using exhibits and display in the museum, do you use other materials such as teaching aid to support your teaching session?
   a. If YES, how?
   b. If NOT, why?
10. Do you incorporate ICT in your teaching?
11. Have you ever experienced a scenario while you are teaching, the strategies or approaches that you were using did not work very well with the audience? What do you do to overcome this scenario?

INTERVIEW SESSION ENDS
Thank you for your time, cooperation and valuable information you have provided for the study.
Appendix 2: Interview questions for Head of Education and Programs

SEMI-STRUCTURED INTERVIEW FOR HEAD OF EDUCATION AND PROGRAMS
Museum Victoria (MV) & National Gallery of Victoria (NGV)

Interviewee:
Date of Interview:
Time:
Location:
Organisation:

A. DEMOGRAPHIC QUESTIONS/BACKGROUND QUESTIONS

1. As a start, could you please provide me some information about yourself and your role in this institution?
   a. Current Position, types of work (Information on job scope), how long in present position, and your previous work position prior to present job etc.
   b. Information on academic background and/or art background

B. THE ORGANISATION STRUCTURE OF EDUCATION UNIT/DIVISION

B 1: Mission and Goals and Functions of Education Unit/Division
1. Could you please elaborate on the functions of the Education Unit/Division in NGV?
2. Could you please explain about the mission / vision of the education units/divisions?
   a. If there is mission / vision,
      i. How do you formulate the mission / vision of the education units/divisions?
      ii. Who formulate the mission / vision of the education units/divisions?
   b. If there is NO mission / vision
      i. Why? Or it is not important?

B 2: Staff and Human Resources / other resources in Education Unit/Division
1. How many staff are assigned in the education units/divisions?
   a. How many are educators/museum teachers?
   b. How many are administrative officers and administrators?
   c. Are they all permanent posts or on a contractual basis?
2. Who are the members/staff in the education units/divisions?
   a. What is their educational experience and background?
3. How are the members/staff in the education units/divisions selected/employed?
   a. Are there any special criteria or experience needed to become one?
4. What is the organisational structure of the education units/divisions?
5. In addition to museum educators, who else is responsible in carrying out the education program in your organisation (i.e. other personnel or volunteers)?
   a. What are the job scopes?
   b. Is the job scope similar with museum educators?
   c. Are they attached under the education units/division?
6. How the Education Unit/Division develops and manages the facilities?
7. How is the allocation of budget, types of exhibits, acquisition of objects/artifact in the museum and gallery determined for education programs?

C. THE PLANNING OF EDUCATION PROGRAMS
1. Could you explain the processes of planning the education programs?
2. How long does it normally take to plan, design and develop the education programs?
3. Is the budget allocated by the management sufficient?
   a. How is the budget allocated?
4. How do you determine the content of the education programs?
   a. Do you have any models or guidelines/theories use to plan the education programs?
5. Are there any other units/divisions involved in planning the education programs?
   a. If YES,
      i. What are the contributions of each units/divisions in developing the education programs?
      ii. Could you explain the process?
   b. If NO- proceed with next questions
6. Besides providing and designing education programs for school-based visitors, is the education unit/division involved in organizing other seasonal exhibitions or special events?
   a. If NO- proceed with next questions
   b. If YES, what are the contributions of your units/divisions in developing the seasonal exhibition or special events?
7. Is your unit also responsible in planning and developing education program/professional development programs for school teachers?
8. How does the education units/divisions develop education resources?
   a. Do you seek help /advice/expertise from other bodies/ institutions in developing the education resources?
9. Who is the target audience?
10. What are the marketing strategies used to promote the education programs?
11. How do you know that the target audience will be interested in your education resources?
   a. Do you have any study or mechanism to identify this problem?
12. How does the organisation and the planning of the education programs fit within the mission of your institutions?

D. RESOURCES
1. Do you ask for any funding/sponsors from outside your organisation to help with the education program?
   a. What types of contributions do you receive from these organizations?
   b. Does your organisation seek funding for special events?
   c. What do they get in return and what do you offer in return?
2. Do you seek help /advice/expertise from other bodies/ institutions in designing the education programs and its content?

E. THE MANAGEMENT OF EDUCATION PROGRAMS/ ACTIVITIES
E 1: Bookings for Education Programs/ Activities
1. How do you coordinate the booking of sessions, could you explain the whole processes?
   a. Who responsible for the bookings made by school/teacher?
2. What are the obstacles in managing the bookings?

E 2: Managing Education Programs/ Activities
3. What are the issues and concerns in managing the education program?
   a. How do you tackle those issues and concerns?
4. Do you charge for your education programs?
   a. If NO- proceed with next questions
   b. If YES,
      i. How the payment is made?
      ii. What are the charges and how much?
      iii. Who determines the rates?

F. THE IMPLEMENTATION OF EDUCATION PROGRAMS
1. Could you explain the processes involved in the implementation of the education programs?
a. Starting from the booking made by school till the end of the teaching session.

2. Which staff/member of the team operates /implements/coordinates the education programs/activities for school?

3. Your education programs are very well supported with the education resources on the web. Which of the education unit/division is responsible for developing the education resources?

4. Can you explain the processes of developing the education resources?

5. There are schools which are not able to participate with your education program due to many reasons. How do you ensure that schools in Victoria are given access to participate in your education programs?

G. THE EVALUATION EDUCATION PROGRAMS

1. How do you measure and evaluate the success of each education program?

2. How do you get feedback from teachers and students regarding your education programs?

3. Who analyses the feedback?

4. How do you response to the feedback?

5. How does an evaluation affect the education programs?

6. Do you make change based on the recommendations of the evaluation process?
   a. If YES, how do you make those changes?
      i. What are the processes?
   b. If NOT, why? Is there any specific reason?

INTERVIEW SESSION ENDS

Thank you for your time, cooperation and valuable information you have provided for the study.
## Appendix 3: Observation Checklist

### OBSERVATION CHECKLIST FOR EDUCATIONAL SESSION IN THE MUSEUM/GALLERY
Museum Victoria (MV) & National Gallery of Victoria (NGV)

<table>
<thead>
<tr>
<th>Respondent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Observation</td>
</tr>
<tr>
<td>Time/Session</td>
</tr>
<tr>
<td>Age Group</td>
</tr>
<tr>
<td>Location/Venue</td>
</tr>
<tr>
<td>Sections in museum/gallery</td>
</tr>
<tr>
<td>Observation series</td>
</tr>
</tbody>
</table>

### MANAGEMENT OF EDUCATION PROGRAMS

<table>
<thead>
<tr>
<th>Facilities.</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What are the facilities provided for example storage trolleys, lighting, name tag etc.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Staff on Duty</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How many staff on duty to help with the management of the programs? For examples: registration counter, security, volunteers etc.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Payment</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How is the payment being made?</td>
<td></td>
</tr>
<tr>
<td>2. Who make the payment?</td>
<td></td>
</tr>
<tr>
<td>3. Who received the payment?</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Communication and Interaction Among Staffs</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How do staff and other member of the museum communicate?</td>
<td></td>
</tr>
</tbody>
</table>
### Registration and Documentation

<table>
<thead>
<tr>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How is the registration process?</td>
</tr>
<tr>
<td>2. How many staff involved in the registration / work at the front desk/registration counter?</td>
</tr>
</tbody>
</table>

### Program Content

<table>
<thead>
<tr>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Content of the education Program aligned with school/teacher/subject/ Curriculum in school.</td>
</tr>
</tbody>
</table>

### Length of Class

<table>
<thead>
<tr>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How long the education program in museum/gallery</td>
</tr>
</tbody>
</table>

### STRATEGIES AND APPROACHES IN TEACHING

#### Teaching /delivery

<table>
<thead>
<tr>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Does teaching operates using guidelines, or any operational framework or teaching structure</td>
</tr>
</tbody>
</table>

#### Museum/gallery educator/s on site

<table>
<thead>
<tr>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How many museum educators involved in the session?</td>
</tr>
<tr>
<td>2. If there is more than one educator on site, describe the role of each educator.</td>
</tr>
<tr>
<td>3. Is the session supported by technical staff? Was the level of support adequate and appropriate?</td>
</tr>
</tbody>
</table>

#### Objects or artefacts

<table>
<thead>
<tr>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Do museum educators use Objects or artefacts during the teaching session?</td>
</tr>
</tbody>
</table>

#### Exhibits and displays

<table>
<thead>
<tr>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Do museum educators use exhibits and displays during the teaching session?</td>
</tr>
</tbody>
</table>
2. How museum/gallery educators use objects/artwork or artefacts during the teaching session?

<table>
<thead>
<tr>
<th>Interactivity (Level of interaction)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Interaction with students</td>
<td></td>
</tr>
<tr>
<td>2. Interaction with museum/gallery staffs</td>
<td></td>
</tr>
<tr>
<td>3. Who talks? To whom, and for how long?</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Overall Presentation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How clear and well organised is the presentation?</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What are the equipments use to support the teaching?</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Instructional methods:</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Did the opening gain the class’s attention? Did it establish rapport?</td>
<td></td>
</tr>
<tr>
<td>2. Did the opening outline the topic and purpose of the lecture?</td>
<td></td>
</tr>
<tr>
<td>3. Is the delivery paced to students’ needs?</td>
<td></td>
</tr>
<tr>
<td>4. Does the instructor introduce topic, state goals, present material or activity effectively, summarize, or suggest an idea to consider before the next class?</td>
<td></td>
</tr>
<tr>
<td>5. Could the instructor be seen and heard?</td>
<td></td>
</tr>
<tr>
<td>6. Were key points emphasized?</td>
<td></td>
</tr>
<tr>
<td>7. Were explanations clear to students?</td>
<td></td>
</tr>
<tr>
<td>8. Were examples, metaphors, and analogies appropriate?</td>
<td></td>
</tr>
</tbody>
</table>
9. Was the lecture stimulating and thought provoking?

<table>
<thead>
<tr>
<th>Student interest with the session</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Describe the form and extent of student participation</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Handout and teaching material</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Is there any teaching handout or material distribute to the students?</td>
<td></td>
</tr>
</tbody>
</table>

**ON-SITE MANAGEMENT AND TEACHING ACTIVITIES**

<table>
<thead>
<tr>
<th>Facilities</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What are the facilities provided on-site? For examples: Table, chair, special chairs, lighting, seating, room set-up etc.</td>
<td></td>
</tr>
<tr>
<td>2. What does the classroom/gallery look like?</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Seating arrangement</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How is the seating arrangement for students/participants.</td>
<td></td>
</tr>
<tr>
<td>2. What is the set-up of the desks and chairs?</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Teaching equipments</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Is there any teaching aid equipments such as TV, OHP, white board, media available, technology etc.?</td>
<td></td>
</tr>
</tbody>
</table>

**RESOURCES**

<table>
<thead>
<tr>
<th>On-site resources</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What kind of space that the museums allocate for the teaching programs? Classroom, exhibition gallery, special site etc.</td>
<td></td>
</tr>
</tbody>
</table>
Appendix 4: Request for permission to conduct research at National Gallery of Victoria

National Gallery of Victoria
PO Box 7259
Melbourne, VIC.
3004 AUSTRALIA

Dear [Name],

PERMISSION TO CONDUCT RESEARCH PROJECT AT NATIONAL GALLERY OF VICTORIA (NGV)

My name is Badrul Isa. I am conducting a research study for a Doctor of Philosophy (DR015) in the School of Education at RMIT University. The purpose of this letter is to request permission to conduct a research project in your organization, and my research project is entitled ‘A Study of the Education Programs at Melbourne Museum and National Gallery of Victoria: Implications for Malaysian Museums and Galleries’.

The purpose of the study is to explore the education programs in these two institutions in relation to five main aspects: the organizational and administrative roles, the related policies, the implementation of education programs, the educational theories and approaches utilized, and how this information can be effectively employed to Malaysian museums and galleries. These five important aspects would greatly assist museums and galleries in Malaysia in establishing an Education Department and initiating their own education programs.

National Gallery of Victoria (NGV) has been selected as a subject for this case study because of its successful and impressive education programs as well as other criteria I have set out for the study. The study on the implementation of education programs will require me to obtain information on the administrative part of your organization, the related policies on education programs, the implementation of education programs, the representation of different discipline-based (e.g., science, art, history), the existence of an active teaching program in the galleries, an experienced and thoughtful museum educators/teacher, and the willingness of the institution and teacher to participate in education programs.

If you require any further information regarding this project may be directed to:

1. The researcher: Badrul Isa, RMIT University, School of Education, Bundoora West Campus, Building 220 Level: 2 Room 38.

2. The research supervisor: Associate Professor David Forrest, RMIT University, School of Education, Bundoora West Campus.

I hope this letter will be received favorably and I look forward to talking with you in the near future.

Yours sincerely,

Badrul Isa
Appendix 5: Request for permission to conduct research at Melbourne Museum

Dear [Name],

PERMISSION TO CONDUCT RESEARCH PROJECT AT MELBOURNE MUSEUM

My name is Badrul Isa. I am conducting a research study for a Doctor of Philosophy (DR015) in the School of Education at RMIT University. The purpose of this letter is to request permission to conduct a research project in your organization, and my research project is entitled ‘A Study of the Education Programs at Melbourne Museum and National Gallery of Victoria: Implications for Malaysian Museums and Galleries’.

The purpose of the study is to explore the education programs in these two institutions in relation to five main aspects: the organizational and administrative roles, the related policies, the implementation of education programs, the educational theories and approaches utilized, and how this information can be effectively employed in Malaysian museums and galleries. These five important aspects would greatly assist museums and galleries in Malaysia in establishing an Education Department and initiating their own education programs.

Melbourne museum has been selected as a subject for this case study because of its successful and impressive education programs as well as other criteria I have set out for the study. The study on the implementation of education programs will require me to obtain information on the administrative part of your organization, the related policies on education programs, the implementation of education programs, the representation of different discipline-bases (e.g., science, art, history), the existence of an active teaching program in the galleries; an experienced and thoughtful museum educators/teacher, and the willingness of the institution and teacher to participate in education programs.

If you require any further information regarding this project may be directed to:

1. The researcher: Badrul Isa, RMIT University. School of Education, Bunndoo West Campus, Building 220 Level 2 Room 38, Tel: [Tel Number] Mobile: [Mobile Number] Email: [Email Address]

2. The research supervisor: Associate Professor David Forrest, RMIT University. School of Education, Bunndoo West Campus, Tel: (03) [Tel Number] Email: [Email Address]

I hope this letter will be received favorably and I look forward to talking with you in the near future.

Yours sincerely,

Badrul Isa
Appendix 6: RMIT Ethical Clearance Approval

Human Research Ethics Sub-Committee

23 December 2009

Mr Bardul Isa

Dear Bardul,

Re: Human Research Ethics Application – Register Number HREC A-2000201-047/09

The Design and Social Context College Human Research Ethics Sub-Committee, at its meeting on 9 December 2009 assessed your amended ethics application entitled “A Study of the Education Programs at Melbourne Museum and National Gallery of Victoria: implications for Malaysian Museums and Galleries”.

I am pleased to advise that your application has been approved as Low Risk (Level 2) classification by the committee. This approval will now be reported to the University Human Research Ethics Committee for noting.

This now completes the Ethics procedures. Your ethics approval expires 31 December 2011.

All data should be stored on University Network systems. These systems provide high levels of manageable security and data integrity, can provide secure remote access, are backed on a regular basis and can provide Disaster Recover processes should a large scale incident occur. The use of portable devices such as CDs and memory sticks is valid for archiving, data transport where necessary and some works in progress. The authoritative copy of all current data should reside on appropriate network systems; and the Principal Investigator is responsible for the retention and storage of the original data pertaining to the project for a minimum period of five years.

You are reminder that an Annual /Final report is mandatory and should be forwarded to the college Ethics Subcommittee Secretary by mid-December 2009 This report is available from: URL: http://www.rmit.edu.au/rd/hrse_apply

Should you have any queries regarding your application please seek advice from the Chair of the sub-committee Associate Professor Heather Fehring on or contact Cheryl de Leon on

Please quote the ethics registration number and the name of the Project in any future correspondence.

On behalf of the Ethics Committee I wish you well in your research.

Yours sincerely,

Cheryl C. de Leon
Secretary
DSC Human Research Ethics Sub-Committee

cc: Assoc Prof David Forrest, School of Education
Appendix 7: List of documents analysed MV

Appendix 8: List of documents analysed NGV