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Museum Learning: Using research as best practice in creating future museum exhibition

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Abstract

The purpose of this paper is the identification of issues from the perspective views of museum scholars and experts toward creating direction in developing museum exhibitions in Malaysia for public learning. Many researchers had recognised that museums are important path of broader learning and knowledge institution for the society. Recently, museums have developed a strong interest in technology as their path more towards of leisure industries. However, there are contradicting opinions arising between using "*traditional*" approach and *"interactive"* technology exhibition techniques for visitor learning. The issues identification will be based on only literature search focusing on their viewpoints on an effective and meaningful ideas in creating extensive and highly developed exhibition for future generation. This paper also initiates a search for such literature and identifies key concepts for further deliberations. Finally, these findings are intended to formulate the best-practice on learning "tool" in a museum exhibition practice.

1. Introduction

In defining museum, a well-known researcher in museum studies, Adler (2004), agreed with International Museum Association and many museum scholars and expertises had established with the decision of International Council of Museums (ICOM) in 1984 was elaborated that museums are a non-

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profit making, permanent institution in the service of society. The definition of a museum has evolved, in line with developments in society. ICOM updates this definition in accordance with the realities of the global museum community. In addition to that, with its development and once open to the public, ICOM elaborated the role of museum further as institution that which acquires, conserves, researches, communicates and exhibits for purpose of study, educational and enjoyment, material and evidence of people and their environment at 21st General Conference in Vienna, Austria, in 2007. They are added that exhibition consists in museums as a medium, and the status of the exhibited project, has occurred within the academic discipline of cultural anthropology. This definition is a reference in the international community.

In Malaysia, other than well agreed with an International Museum Associations and museum scholars, a museum functions are not limited as to preserve and store artefacts of national treasures, but it is also a source of knowledge for a holistic view towards all way of life. Referring to local context, Ismail (2011) has stated that it was seen vital to gather entire material heritage in the construction of cultural identity and the civilization of a country. Cultural heritage attraction has became one of the niche products in Malaysia tourism industry (Ahmad & Badarulzaman, 2005) and has also been identified as influencing factors in the tourism industry (Mey & Mohamed, 2010). Not only that, museums has also been identified in Malaysia as an institution to spread knowledge to the public on the history, culture and natural (Tambi, 2011).

Such role of museum stated by Tambi (2011) is supported by Ramey-Gassert, Walberg and Walberg (1994) statement acknowledging museum being part of cultural institution is an integral part of the broader learning and provide education to the public that also called '*museum learning'*, playing a key role in *'lifelong learning'* and educational leisure. Museums are informal learning settings where learning is intrinsically motivated and proceeds through curiosity, observation and activity. Hence, Museums present a distinct context for informal learning, often described as *'free-choice learning'* environments and are visited by a broad range of people (Falk and Dierking, 2000).

Encouragement given by Griffin, Kelly, Savage & Hatherly (2005) proved the necessity of research such as which this paper is based on, uncovering learning through gathering of information through informal setting exhibition techniques that will give an enormous impact to the quality of future exhibitions. Previous studies regarding museum as informal learning context (Crane, Nicholson, Chen and Bitgood, 1994; Falk and Dierking, 1995; Hein, 1998) had divided the visitors into several segments as follows:

- families (Borun, Chambers, and Cleghorn, 1996; Moussouri, 1997),
- school children (Birney, 1988; Griffin, 1998) and
- adult visitors (McManus, 1993; Silverman, 1995; Falk and Dierking, 1997; Falk, Moussouri, and Coulson, 1998).

This paper seeks, *through an extensive literature search, to identify specific museum learning scenario of static approach and interactive technology exhibition for informal education of solitary adult visitors in Malaysia.* The paper intends *to initiate a discussion on a problems faced in delivering information by using static approach and interactive technology exhibition and measuring level of the visitors' understanding of information presented.* Besides that, *the intellectual debate of trend for good design of museum learning based on relevant research and theory will be discussed* as a guide to produce 'tool' of best-practice for future exhibition making for Malaysian multi-racial society.

The paper shall be divided into three sections; the manner of which the search of literature was initiated and undertaken; intellectual view in the field of museum learning issues of using the traditional approach (static) and interactive technology in exhibition and finally, further deliberations for future directions.

2. Literature resource

Understanding the interaction of museum learning in how the adult visitors engage with artifacts in informal learning environment depending on static approach versus interactive technology exhibition. A greater understanding of these variables would contributes to the literature on solitary adult's experience in museum and would inform museum staff's and exhibit designers' understanding of what shape visitors' engagement. There were researchers who backboned in museum learning participated on exhibition setting where their input in contribution their research publication and their guidelines for best practice to future museum exhibition such as Museum Association, Museum Department, Exhibition Consultants, Exhibits designers and others who related to the development of museum learning. As Universiti Teknologi MARA strives to achieve its aspiration as the leading university in Malaysia, there has been a momentous thrust in the development of academic sourcing via online journals (Bajunid, Abbas & Nawawi, 2012). This can be performed if one to just Google museum learning and exhibition connected with SAFE Premier, Science Direct, SciFinder Scholar, Scorpus, Wiley On-Line Library and many Digital Library whereby there exist numerous journals and books from International Museum Association such as American Museum Association and International University which involved a research on museum education or museology. Some journals and books which interested were subscribed on-line from the distributors. The paper limits the scope in specific to only museum learning within the context of Malaysia. However, in order to better understand a complete picture of its relationships, a thorough search of initial scholarly literature that frames the periphery of the museology disciplines, was undertaken.
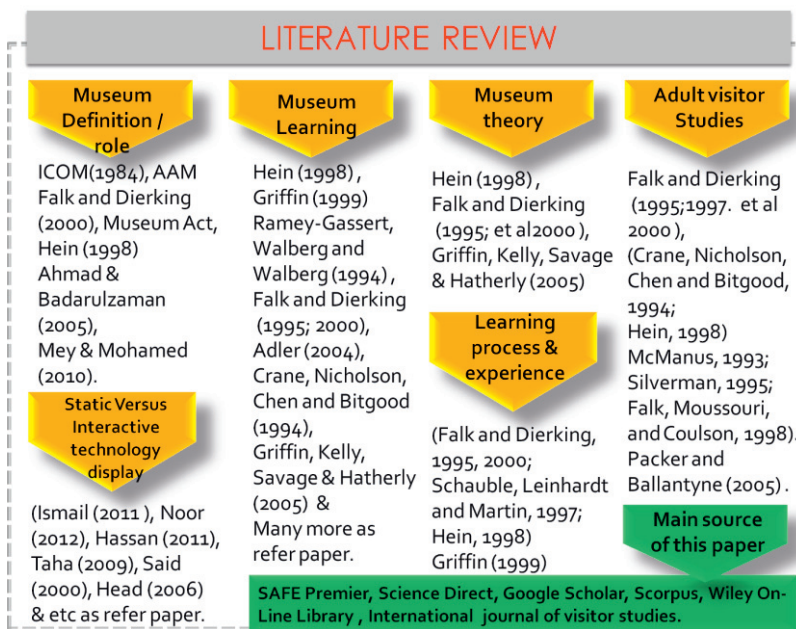

Fig. 1. Illustration of literature review related the identification of issues from the perspective views of museum scholars and experts toward creating direction in developing museum exhibitions

Table 1. UiTM's online database in direct connection to the built environment . Source: Adapted from UiTM's Online Database. Available at http://library.uitm.edu.my/v1.0/eresources/S.html.

LIST OF SUBSCRIBED DATABASES BY CLUSTER/FACULTY (Science & Technology)

Faculty of Applied Science Faculty of Computer & Mathematical Science **Faculty of Architecture, Planning and Surveying** Faculty of Sport Science & Recreation Faculty of Plantation & Agrotechnology		
● American Chemical Society (ACS) ● ACM Digital Library (DL) ● Bankscope ● BLIS (Bernama Library & Infolink Service) ● CAB Direct ● Emerald Management Plus & Backfiles ● EBSCO : Academic Search Premier ● EBSCO : Business Source Complete ● EBSCO : SPORTDiscus	● Food Science & Technology Abstract (FSTA) ● Health & Wellness Resource Centre ● Web of Knowledge ● IOP Science ● IndianJournals.com ● ProQuest Dissertations & Theses ● Osiris ● Oxford Journal – Human Reproduction ● Science Direct & Science Direct BackFiles	● SAGE Journals ● Springer LINK ● Springer Protocols ● SciFinder Scholar Web ● Scopus ● Sage Research Methods Online ● Scientific.Net ● TOMES Plus Systems ● Taylor & Francis (Geography Archives) ● Wiley Online Library ● Wiz folio

Table 2. SMITHSONIAN Museology Journals Resource. Museum Studies - Information for Museum Professionals and Scholars

No.	Type of Journal	Web-site
1.	American Archivist Journal	http://www.archivists.org/periodicals/aa.asp
2.	Annolog: A Collaborative Annotated Bibliography Blog	http://annolog.sarcenet.org/
3.	ASTC Dimensions	http://www.astc.org/pubs/dimensions.htm
4.	Collections: A Journal for Museum and Archives Professionals	http://www.altamirapress.com/RLA/Journals/Collections/
5.	Common Ground: Preserving Our Nation's Heritage	http://www.cr.nps.gov/CommonGround
6.	Conservation: The Getty Conservation Newsletter	http://www.getty.edu/conservation/publications/newsletters/
7.	Cultural Resources Management: The Journal of Heritage Stewardship	http://www.car.nps.gov/crm/
8.	Curator: The Museum Journal	http://www.altamirapress.com/RLA/Journals/Curator/
9.	Folklife Center News	http://loc.gov/folklife
10.	Heritage Management	http://www.lcoastpress.com/journal.php?id=7
11.	History News	http://www.aaslh.org/historynews.htm
12.	ICOM News	http://icom.museum/thematic.html
13.	ICOM Study Series	http://icom.museum/studse.html
14.	International Journal of Arts Management	http://www.hec.ca/ijam/
15.	Journal of Museum Education	http://www.lcoastpress.com/journal.php?id=3
16.	Journal of Museum Management and Curatorship	http://www.tandf.co.uk/journals/titles/09647775.asp
17.	Muse	http://www.museums.ca/Cma1/publications/publications.htm
18.	Museuse Estudos Interdisciplinares	http://revistamidas.hypotheses.org
19.	Museums & Social Issues	http://www.lcoastpress.com/journal.php?id=4
20.	Museum History Journal	http://www.lcoastpress.com/journal.php?id=6
21.	Museum News	http://www.aam-us.org/pubs/index.cfm

Source: http://museumstudies.si.edu/Header3.html/

3. The methodology

The methodology of this research is based on a triangulation method. But for this paper only uses qualitative methods which refer the literature review in the purpose the identification of issues from the perspective views of museum scholars and experts toward creating direction in developing museum exhibitions in Malaysia for public learning. Majority of literature review are based on western scholar in knowing the scenario of museum learning within adult visitors. It would be required to further enhance the robustness of this research. This will be the foundation idea towards a study on solitary adult visitor studies in Malaysia because there is a limited study on museum learning through exhibition using static versus interactive technology in local context.
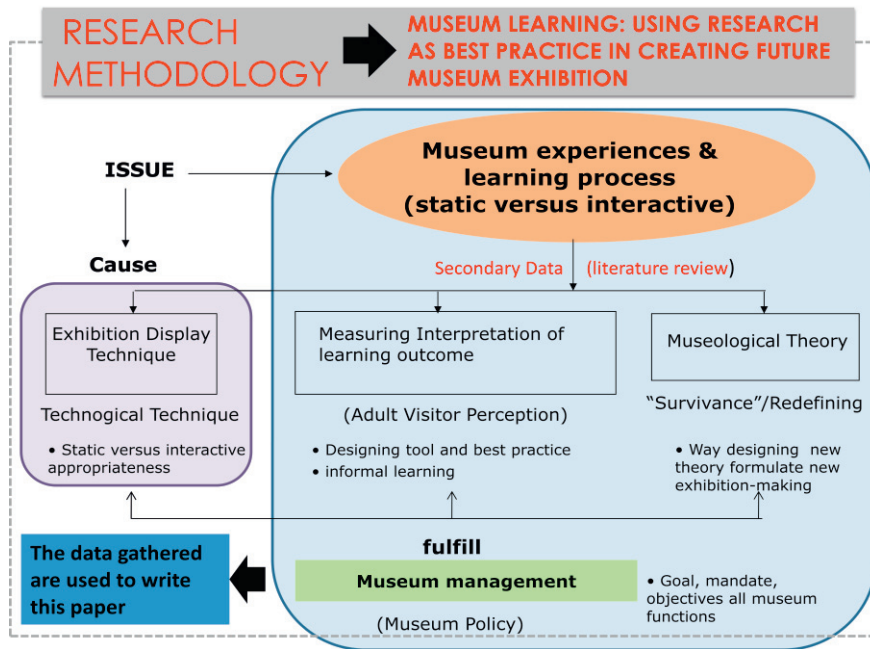

Fig.. 2. Illustration of the flow diagram screening on literature review as a secondary data for the research and identifies key concepts for further deliberations.

3.1. Research limitations

Owning to parameters set by research grant, where funds are only for site for local site activities (secondary data gatherings) within Malaysia. Therefore, any information and data regarding other countries within the current paper are totally dependent on the secondary data.

4. Discussion

This paper set out the interest of the key concepts to bring forwards that studying research from the scholars and experts could formulated a best-practice on learning "tool" in museum exhibition practice. This adaptation in this paper only highlights a preliminary synthesis of the sourcing narratively, identifying trend or gap with limited graphical displays towards museum learning on informal learning contexts

focussed on solitary adults' visitor in static exhibition approach versus interactive technology exhibition setting in Malaysia.

The research conducted by Packer and Ballantyne (2005) found adult solitary visitors which being alone contributed to their learning are consistent with self-determination theories of motivation and constructivist theories of learning, and might speculatively be elaborated as follows:

- solitary visitors have greater perceived autonomy or self sufficiency , which enhances motivation;
- they engage with information at a deeper cognitive level; and
- they are free to select learning experiences that are consistent with their individual interests and preferred learning styles.

Interestingly, both solitary visitors referred to the learning benefits of the particular social context they had selected for themselves. Thus solitary visitors benefited from the freedom to choose how they would allocate their time and attention, and were able to engage in deeper personal reflection.

4.1. Museum learning in informal learning context

There have been a few range of studies looking at people learning in informal contexts in this paper, including museums (Crane, Nicholson, Chen and Bitgood, 1994; Falk and Dierking, 1995; Hein, 1998). Research has been undertaken with specific visitor segments such as families (Borun, Chambers, and Cleghorn, 1996; Moussouri, 1997), school children (Birney, 1988; Griffin, 1998) and adult museum visitors (McManus, 1993; Silverman, 1995; Falk and Dierking, 1997; Falk, Moussouri, and Coulson, 1998). Most of these, however, have been either one-off studies or focussed on particular exhibitions. In Australia there is a growing body of museum visitor learning research (eg. Anderson et.al. 2002; Griffin, 1996, 1998; Rennie and McClafferty, 2002; Kelly, 2000b; Kelly et. al.2004; Piscitelli and Weier, 2002).

The museum learning research needs to be theoretically based, undertaken across a range of institutions, collaborative within the industry and the wider research community, creative and innovative with wide ranging methods, as well as related to other learning experiences (Falk and Dierking, 1995, 2000; Schauble, Leinhardt and Martin, 1997; Hein, 1998).

Many opinion have arisen such as Griffin (1999) regarding the evaluation of the success of museums in achieving their learning goals is proving a challenge. In museums, visitors choose their experiences, ideas may not necessarily be met in any particular sequence, and opportunities for learning may be fragmentary and unstructured. The informal nature of the setting means that museum professionals cannot determine the specific content to which learners are exposed.

Table 3. The idea of formal and informal in museum learning behind the study was to develop programs that would improve the experiences of visitors (Source: Adapted from Kelly, 2007, p.69; Rowe, 1998, p.11-13, 16-17).

Term	Description
Formal	Structured, systematic, regimented settings, definite right and wrong answers, teacher/expert has power and choice over what is acquired. Also organised and systematic.
Informal	Self-led, self-paced, self-motivated, connects to "real" experience, learner/visitor has power and choice to direct interactions, people are empowered.
Museum	Collections and research-based, hands-off, presenting "static" artefacts rather than ideas or activities.
Learning	Reflective, relevant, physical, social, choice, something that is applied in the future, enjoyable, experiential and "owned" by the learner.

4.2. Museum learning: adult as learning educator

   Numerous studies have examined way in which adults shape children 's understanding of artefact in museums ((Falk & Dierking, 2000; Puchner, 2001; Stanton, 1999; Kelly, 2007; Rubenson, 2000; Benjamin et al., 2010; Callanan & Braswell, 2006; Callanan, Jipson & Soennichson,2002; Crowley, Callanan, Jipson, et al. 2001; Crowley, Callanan, Tonenbaum, & Allen, 2001, Tonenbaum et al., 2010; Braswell et al,. 2012).that described about adult is a motivator for individual learning as follows:

- Adult of families are used to learning together and developed a range of personal learning behaviours and practices enhanced by their culture of sharing knowledge and experiences.
- Parents can be effective facilitators for their children's learning when exhibitions are designed with collaborative learning in mind and when adults feel comfortable with the content and experiences provided in the museum.
- Children stayed longer at exhibits and learned more when they were accompanied by an adult who was actively involved in the activities.
- Mothers and fathers took on different roles within a visit. Mothers more concerned with the logistics of the visit, and fathers seeing museums as *"family business"*. Work on literacy and adult learning suggested that an orientation to *"life-long learning"* and readiness to learn in later life was strongly linked to the family.
- Morrissey (2002), may shape children's reaction to artefacts by adult explanation shape children understanding of an artefacts.

4.3. Theories in developing museum learning

   Kelly (2007) recognized that the museum profession seeks graspable explanations and clear theories to support and guide its practice such museum-friendly scholars as Howard Gardner, Mihaly Cskzentmihaly, Bernice McCarthy, and others for useful typologies and concepts. The museum profession is not the only field that separates theory from practice; journalism, education, and a host of other fields cast their 'practitioners' and 'scholars' as two distinct groups. Though practitioners often contribute field-changing concepts and scholars develop innovative exhibitions and programs (Silverman & O'neill, 2010).

   A century of enormous expansion of education, both in the formal and informal sectors, as well as an explosion of social science research and intellectual ferment have provided the opportunity contrasting theoretical and practical approaches to education (Hein, 2011). Broadly, educational theory can be classified according to two domains: the theories of learning and the theories of knowledge (Hein, 1998).

   In the development of learning theory several models and theories have been proposed, with two which are constructivism and socio-cultural theory, being particularly relevant for museums. Constructivism is a theory of learning that focuses on the learner and the personal meanings they make based on their prior experience, knowledge and interests Griffin, Kelly, Savage & Hartherly (2005). Jeffrey-Clay (1998) pointed out that 'Constructivist theory holds that prior knowledge is of primary importance (Kelly, 2007). Kelly further elaborated that the second theory which is socio-cultural theory, is based on the work of Lev Vygotsky who first proposed that learning was a socially mediated process where learners, in his case adults and children, were jointly responsible for their learning (Matusov & Rogoff, 1995; Vygotsky, 1978). In a socio-cultural model learning is shaped by the context, culture, and artefacts in the learning situation. Schauble, Leinhardt and Martin (1997) argue for a socio-cultural approach as an appropriate theoretical framework in museum learning research as it accounts for meanings made within a social context, rather than facts learned, focusing on the interplay between individuals acting in social contexts and the mediators that including tools, talk, activity structures, signs

and symbol systems that are employed in those contexts' (Schauble et al, 1997). This presentation of studies will include examples of the theorizing museums that contributed in developing of research evidence from the related study that beneficially this research shall contribute a best practice of future exhibition setting for solitary adult visitors
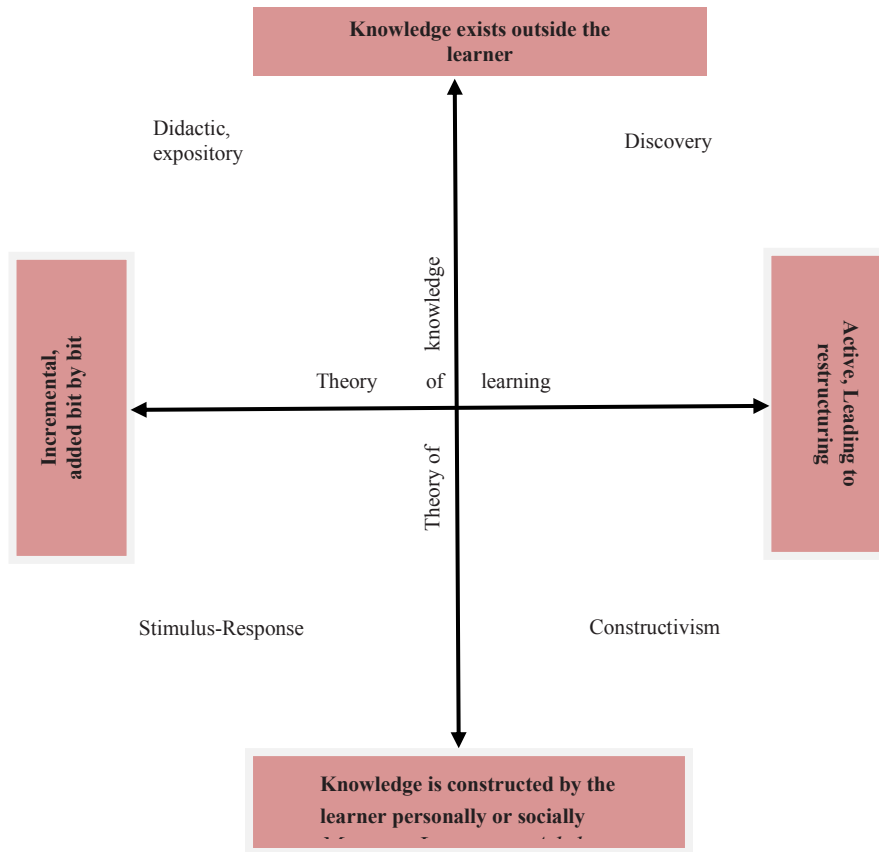
Knowledge exists outside the learner

Didactic, expository

Discovery

knowledge

Incremental, added bit by bit

Theory of learning

Active, Leading to restructuring

Theory of

Stimulus-Response

Constructivism

Knowledge is constructed by the learner personally or socially

Fig.. 3. Theories of education (adapted from Hein, 2011).

4.4. Museum learning scenario in Malaysia: static exhibition approach versus interactive technology exhibition

In Malaysia, museum visiting culture within the society are not as a great as in European countries. This opinion was supported by Ismail (2011) where he stated that museum is uncommon preference as a family visit as vacation destinations and shopping centres. Furthermore, some of them assumed that museum is only suitable for school trips where there is an atmosphere of learning and teaching. However, sometimes the visitors were brought into the museums would only spend time just watching objects as display.

In contrast with other countries, museums are listed in the places that compulsory visited by foreigners. Some of local researcher and practitioner, nurturing the interest in local visitors for visiting museum is more important. They are believed by constructing some improvement within the museum

exhibition technique will improve their interest considerably. The improvement in the number of solitary adult visitors would also contribute to enhancement for their children's museum visiting culture and enhance informal learning experiences.

Although Malaysia now has more than 150 museums under the supervision of the Department of Museum and Antiquities of Malaysia, state governments, private and private parties by displays of artefacts and exhibits, it is still failed to attract people to visit museum (New Strait Times Press, March 2012). According to Noor (2012), this problem has occurred because the presentation of artefacts and exhibits are still the concept of "traditional" offering a *"dead"* or *"static"* approach is to be among the factors that failed to attract the people. Significant to this problem, he stressed the patterns of thinking and way of life of today people are different from the way of people who live past. Presently, due to the development of science and technology, information gathering culture are only on their finger tips with mobile screen to get a reference (Ismail, 2011). This places them in a world where physically one does not have to go to museums in order to gather information. In fact, the developments in technology offered a variety home entertainment additionally to the emergence of digital toys and technology media that lead to children and adult not interested in what is in the museums offered.

These challenges demand the museums to be more creative and innovative in creating contents that can encourage the society to visit the museum institutions. An exhibition with the latest techniques such as interactive or 3D is proven effective and successful that can captivate young people, including children outside the country visiting the museum (Hassan, 2011). An explosion of Information and Communication Technology (ICT), education system began to change, progression of buildings or shopping centres that creates the museum must live in challenging rival (Taha, 2009).

A research has been conducted by Said (2000), he found that many museums in United Kingdom have been closed earlier and are now open to the mode of delivery, such as *"hands on", "minds on", "multimedia", "squeezer"* and others. However, he discovered engaging of *"hands on"* that too much like Science Centre may cause excessive information received that is difficult to understand by the visitors. He believed there must be a balance using static and interactive technology approach of information or education and entertainment in museum learning. A research has been conducted by Said (2000), he found that many museums in United Kingdom have been closed earlier and are now open to the mode of delivery, such as *"hands on", "minds on", "multimedia", "squeezer"* and others. However, he discovered engaging of *"hands on"* that too much like Science Centre may cause excessive information received that is difficult to understand by the visitors. He believed there must be a balance using static and interactive technology approach of information or education and entertainment in museum learning.

4.5. *Global research of museum learning: static exhibition approach versus interactive technology exhibition*

The majority museum experts were consent that museums are increasingly positioning themselves in the market as places for rich learning and experiences in the way of mission statements that highlight their main duty in public learning and education responsibility. Most of their research has shown that people visited museums for the *'learning'* and *"experience"* reason. *"Free-choice learning"* such as hand-on, mind-on, multimedia technology and other type technological devices has a position to perform *"life-long learning"* and *"educational leisure"* through an exhibition techniques.

There are many opinion was released by international scholars on the impact of using exhibition techniques in application of *"static"* approach and *"interactive"* technology towards comprehend an exhibition techniques. Some international exhibition scholars and experts were agreed that learning by processing of visuals (exhibition) is not as easy as is frequently supposed because some of studies has

shown that learners sometimes have problems establishing connections between visual and textual information They furthermore recognized the visitors also have difficulty identifying the relevant information presented in an *"static"* illustration as well as when they are learning with *"interactive"* illustrations. Sometimes the learners are confronted with similar or even more challenging problems.

In early 1900s, there are a conflict evolved about the widespread use of novelty, gadgetry, three-dimensionality, and illusion as well as digital technology is blurring the line between the traditional public museum and commercial theme park and retail complex that mostly generic space of *"edutainment".* There was remarked that too technological sometimes gave a description of an artefact with an object label resulting the biased perspective of someone from a different time, place, gender, ethnicity, culture or politic bent.

In contrast, some science museums have been successfully entertaining their public, mainly facilitated by the nature of the objects they showed. They engaged the visitor by transforming visitor from the passive viewer or *"static"* into participant by uses of *"interactive"* devices. They further describe, emerging technologies are transforming everything that constitutes our notion of *"reality"* – our ability to sense our surrounding, our capacity to reason, and our perception of the world. Technology penetration extends far beyond physical location.

Head (2006) has expressed that the museums have a public duty to make a provision for all parts of society consists all ages, social cultural and educational backgrounds. The challenges in the 21st century museums must cater for different learning abilities. He stressed without the use of technology it's difficult for museums to modify content according to the needs of particular learners. The museums should not to follow any set of syllabus but it's should create activities of exhibition may be exploratory and experiential for effectual understand learning and attracting visitors. He further described that museum exhibition display will be more effective way to use of technology to enhance the learning experience also expressed a positive opinion on using new technology in museum such as:

- Positive behaviour of technology communicating well at an exhibit;
- People will enquire and question to go deeper into the subject;
- Positive action is taken by accessing further information;
- Discussion between groups of visitors about the display takes place; and,
- Other people are invited to join in.

However, they also expressed a fear identified by some critics and caution that today's media technology entertains at the expense of accuracy, which it distracts from real knowledge and undermine the educational experience. Even though that technique is best but it's creating a window dressing and became worse because it's grossly misinforms.

Several researchers were agreed that the integration of illustration plays important role in designing computer-based learning programs. With the advent of new technologies, *"interactive"* display such as animated graphics are used instead of or addition to *"static"* visual like pictures. Comparing both types of illustrations, almost all researchers found numerous similarities concerning the representation of objects. However, they agreed animations seem to be superior for the visualisation of spatial aspects and *"interactive"* processes. They allowed a complete visualization of spatial constellations and *'interactive'* processes, whereas in pictures, *"static"* indicators such as shades or arrows must be used to support the information.

4.6. Making use of research

This presentation of studies will include examples of best practice in building of research evidence from the related study of research instrument that beneficially this research shall contribute to exhibition best practice such as follows:

- MARVEL – Museum Actively Researching Visitor Experiences and Learning by Griffin, Kelly, Savage & Hartherly (2005), that based their exploration on how visitor learning through display.
    Janette Griffin and her colleagues suggested that to assess learning, one could look at the learning outcomes and/or at the presence of learning processes or behaviours during a museum visit. One of the options of how to assess learning is to look at the nature of learning and learning processes which take place in the museum. A behaviour that indicates learning is happening could be found through observing visitors and listening to their conversations (the analyses of their conversations were done thanks to voice recording). Questionnaires with the statements related to the visitors' learning and with open-ended questions were used in order to determine the visitor's personal evaluation of their learning and whether they understood the main ideas of the exhibition. This tool was tested at the Australian Museum and the Royal Botanic Gardens in Sidney. This aspect however will discuss comprehensively in another paper that identifying visitor learning outcomes in particular exhibit and focus group of solitary adult visitors.

- MOLI – Mode of Learning Inventory (Savage, 2005), where the research covers on visitors' own impression and expression from particular exhibit with involved visual observation and listening to conversations were used to uncover visitor.
    The Modes of Learning Inventory (MOLI) was developed by Environmetrics Pty Ltd (Gillian Savage) to provide a structured interview protocol for uncovering visitors' own impressions and expressions of their learning from a particular exhibit. This tool provides a measure of whether the visitors themselves consider that they have been learning and how they have been learning, rather than what was learned. MOLI measures the process of learning rather than the content. The Index uses a series of statements each with a five point Likert scale from Strongly disagree to Strongly agree. This aspect however will discuss comprehensively in another paper that identifying visitor own impressions and expressions in particular exhibit and focus group of solitary adult visitors.

5. Conclusion

The literature studies on previous and recent scholars' ideas portrays a 'trend' on museum learning scenario in Malaysia for adults visitors through static exhibition approach versus interactive technology exhibition. There seem to be a gap that clearly presented that there are a same conflict and viewpoints between local and international museum scholar regarding the issues of using static approach and interactive technology exhibits. Thus, the question arises, should museum needs a balance of technique in the form of "static" display, 'interactive" technology and entertainment in Malaysia? The study adds to this body of research by comparing adults visitor engagement on static exhibition versus interactive exhibition technology by complementing qualitative study of engaging quantitative data (Morissey, 2002, Brasswell 2012) may give potential tool in best-practice for future museum exhibition setting.
    In contrast, Some visitors stated that they preferred to explore exhibits on their own, even though they had come with a partner or group, a finding reported also by Hood (1993).There is little doubt that for family groups, social interaction is a vital aspect of the museum learning experience (Dierking 1992; Kelly, et al. 2004). However, research is needed to explore the importance of social interaction within other types of visitor groups (Falk and Dierking 2000) and in particular to compare the learning

experience of those who share it with a companion versus those who experience it alone. Research findings that those who visit alone spend more time reading labels (McManus 1996), demonstrate greater learning (Falk, Moussouri and Coulson 1998), and have a higher need for cognition (Packer 2004) than those who visit in family groups, pairs or adult social groups, suggest that there is a relationship between the educational and the social aspects of the visitor experience are worthy of further investigation. Additional research must be conducted (Brusswell, 2012) may address several issues that are beyond of the scope of the present study. For example, the examine the long term effects various type of engagement with artifacts and with exhibits with repeated visits. Identifying this phenomenon empirically shall contribute enormously to the corpus knowledge of museum practitioners, museum staff and exhibit designers in Malaysia .

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