

# Preferred Learning Styles for Digital Native and Digital Immigrant Visitors in The Malaysian Music Museum

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**Abstract:** The majority of museum experts have agreed that museums are informal learning environments, however, most of the previous studies on digital learning have focused on formal education institutions instead of informal environments. Hence, adapting the new fast-changing technology in museum learning has become one of the major challenges for the digital native and digital immigrant populations due to their different learning styles. These two generations have different levels of thinking patterns, experiences, and digital exposure that lead to different levels of technology accessibility in the learning environment. Therefore, the aim of this study was to investigate the preferred learning styles of museum visitors in the Malaysian context based on the learning styles of digital natives and digital immigrants. A total of 265 respondents participated in this study representing the population of  $N=792$  at the Malaysian music museum in the data collection process. These descriptive results on the cross-tabulation analysis from the survey indicated that most of the visitors preferred the digital natives' learning styles compared to the digital immigrants', regardless of personal factors (gender, age, nationality, education level, or occupation). Thus, museum institutions should take the necessary steps to enhance or maintain the learning approach for digital natives with elements of entertainment and fun, provide internet connection, less text, out of school environment, digital use, and multi-task activities for skills enhancement. The minority of digital immigrants are suggested to assimilate and become part of the digital native group to stay relevant in this digital era.

**Keywords:** Digital, Education, Learning, Malaysia, Museum

## 1. Introduction

The integration of information and communication technology (ICT) into the education environment has become more common in recent years (Aziz, Seman, Hashim, Roslin, & Ishar, 2019). The idea of identifying the different learning levels between the digital natives and digital immigrants was introduced by Tapscott (1998) in terms of broadcast versus interactive learning (William J., 1999). Continuing from that idea, Prensky introduced and highlighted the terms of "digital natives" and "digital

immigrants” and they have been widely discussed in the education sector by previous researchers (Wang, Myers, & Sundaram, 2013).

Commonly, digital natives refer to the young generation who were born in the digital age, whilst the digital immigrants refer to those who learnt to use computers at some stage of their adult life (Doran, Boyce, Hicks, Payton, & Barnes, 2012). The majority of the related research has focused on the students’ technology use for educational purposes (Bayne & Ross, 2007; Bennett, Maton, & Kervin, 2008; Einstein, 2001; Gaston, 2006; Günther, 2005; Prensky, 2001a; Wang, et al., 2013; and Zenios & Ioannou, 2018). Several studies have also proven that the digital natives and digital immigrants show different levels of acceptance of and accessibility to digital technology in the learning environment (Autry & Berge, 2011; Günther, 2005; C. Jones & Healing, 2010; Prensky, 2001b; Wang, et al., 2013; and Zenios & Ioannou, 2018).

Even though the terms ‘digital natives’ and ‘digital immigrants’ are commonly used in Information System research or the computing field in education, the definitions, concepts, and theories of these terms are still questionable and have been criticised in several research works (Bennett, et al., 2008; C. Jones & Healing, 2010; and Kopáčková, 2015). The arguments over digital natives are mainly on three issues namely: the existing gaps, the ability to use Information and Communication Technology (ICT), and the transformation of educational methods to meet the needs of the digital natives. This paper has focused on the transformation of educational methods in the museum. Moreover, the latest research has exposed that these terms are still relevant to revisit in any research related to the educational environment setting (Abdul Aziz, Harun, Baharom, Ramlie, & Mohd Shuib, 2019a; Nachimuthu, 2018; and Zenios & Ioannou, 2018).

Prensky (2001a) claimed that the population of digital immigrants consists mostly of teachers. Autry and Berge (2011) also differentiated digital natives and digital immigrants between today’s students and their teachers. However, this paper has looked into different perspectives where the students and teachers will be considered as a group of museum visitors with different levels of ages, thinking patterns, experiences, and digital exposure. There are potential conflicts in learning styles between these two generations when becoming a museum visitor because of their thinking patterns, experiences, and digital exposure. The early exposure to the digital world has led the digital natives to show positive behaviours towards learning styles using the technology unlike the digital immigrants.

The most preferred learning styles amongst museum visitors is important to the future researchers and museum sector in understanding the visitors' current demands in selecting the most appropriate exhibit designs to suit the accessibility level of the visitors towards the digital exhibitions. The future of museums depends on how capable and prepared the museums are to meet the needs and expectations from a variety of visitors (Silverman, 2010).

The questions are, “What are the learning styles for digital natives and digital immigrants?” and “Which styles are preferred by the current Malaysian museum visitors?” The answers to these questions are important in order to understand future visitors and the direction of museum learning activities for improvement in the Malaysian museum context.

## **2. Literature Review**

### **2.1 The Role of Museums as Educational and Research Institutions**

Museums are not only temples of artefacts, but museums have also transformed into cultural centres and places for education (Elottol & Bahauddin, 2011). In other words, a museum is a semi-academic and educational institution (Taha, 2008). Most museum experts have agreed that a museum is a leisure educational setting. The International Council of Museums (ICOM) defines a museum as a non-profit-making, permanent institution in the service of society and its development; and, open to the public, it could acquire, conserve, research, communicate and exhibit, for various purposes of study, education, and enjoyment, the material evidence of people and their environment (Hashim, Mohd Taib, & Alias, 2014).

According to Chang (2006), museum educators should provide appropriate physical contexts that can give meaningful learning experiences because museum visitors are adapting and mastering skills

through practice and problem-solving (Grenier, 2011). Thus, organising exhibitions with the most impactful digital learning approach for the right target visitors is considered crucial.

## **2.2 The Development of Technology for Museum Learning in Malaysia**

The museum sector needs to keep moving forward in order to stay relevant for all generations of visitors, especially for the digital natives of the new and future generations. The implementation of modern technology and unique features in the exhibit hall has become the latest attraction and new museum learning approach for visitors. The development of the digital approach in Malaysian museums has been increasing drastically over the last 10 years after a local research found that the level of ICT used in Malaysian museums was very low and 30 years behind the other developed countries like U.S., U.K., and Canada (Bakar, Kassim, & Mahmud, 2010).

Regarding the development of ICT in the museum, several digital interactive kiosks have been implemented as a contemporary digital approach in the exhibit hall of a Malaysian museum (Abdul Aziz, Harun, Baharom, Ramlie, & Mohd Shuib, 2019b). The use of interactive technology in museums has been proven to effectively increase the levels of experience and cognitive engagement of the visitors (Pallud, 2017).

Some of the researchers argued that museums in Malaysia have not taken full advantage of the potential innovations in learning approaches, specifically for exhibition design (Ch'ng, 2011; Elottol & Bahauddin, 2011; and Hasan, 2006). However, the argument has been rejected by a number of recent local studies that have shown the development of Malaysian heritage museums using a variety of types of digital approaches, such as the interactive exhibit (Ng, 2014), the integration of interactive displays (Hashim, et al., 2014), virtual museum on smartphones (Motlagh Tehran, Mohd Zainuddin, & Takavar, 2015), virtual living-street museum (Rahman, et al., 2013), and virtual heritage interpretation through animated panoramic illustrations (Abd. Jabbar & Jusof, 2014).

Due to the development of digital use in the museum, the benefits can be seen as being beneficial to the digital native visitors. Most of the studies found that the digital natives had a new set of digital skills, and the opportunities to engage and participate are more broadly than the digital immigrants. The museum sector has realised the changes in this trend and it has led to some researchers proposing a new value proposition for museums. Since the 1980s, many developed countries, such as the United Kingdom (U.K.), Australia, Japan, Canada, and the United States (U.S.), have changed their museum concepts to be more creative in their learning approaches towards the visitors by adding creativity elements through the development of communication and technology (ICT), and various new products in the exhibition hall (Isa, Ali, Mohd Yusof, & Isa, 2015).

Abdul Aziz, et al. (2019a) suggested that digital immigrants should be assimilated and become a part of the new culture of the digital natives to stay relevant in this digital era. Thus, this research has discussed the consequences of the development of digital technology into the learning styles of digital immigrants based on the research findings.

## **2.3 Learning Styles of Digital Natives and Digital Immigrants**

The learning styles of the digital natives and digital immigrants can be identified in many ways in terms of thinking patterns, experiences, and media usage from the previous studies in education research. As highlighted by Prensky, the young generation has a different degree of thinking patterns than other adults when at computers (Prensky, 2001b). A thematic analysis in the literature explains the learning styles of digital natives and digital immigrants as below:

### **2.3.1 Entertainment**

Generally, the members of the young generation are excited adopters of digital and interactive technologies for communication, entertainment, and educational purposes (Recalde & Gutiérrez-García, 2017). Doran, et al. (2012) suggested digital gaming in museum exhibitions to engage the digital natives.

However, the digital immigrants think that learning cannot be fun because they view the younger generation as being less disciplined and prone to laziness when depending too much on digital tools (Autry & Berge, 2011).

### **2.3.2 Digital use**

According to Prensky (2001a), digital natives represent the generation which have grown up with new technology and spent their entire lives using various types of digital tools in the digital age, such as video games, computers, video cams, digital music players, and cell phones, whilst, the older generation of digital immigrants is still trying to adapt to the changing world.

### **2.3.3 Skills**

The thinking patterns of digital natives are highly developed and enhanced from the early ages with wider exposure to computer games and other digital media. This exposure has led to a highly responsive attitude with a very different blend of cognitive skills (Bennett, et al., 2008).

### **2.3.4 Less text**

Digital natives are also fast reader learners and tend to use short messages rather than reading emails (Günther, 2005). They prefer picture, sound, and video rather than text to access the information quickly compared to the digital immigrants who are slow readers with a long manual text (Autry & Berge, 2011).

### **2.3.5 Multi-Tasking**

The digital natives are proficient in multitasking and spontaneous in accessing the multimedia information (Zenios & Ioannou, 2018). Similar to the finding of Bennett, et al. (2008), this generation consists of active learners and they depend on communication technologies for accessing information and interacting with others. In contrast, digital immigrants have developed their mindset to accept learning information at a slower pace because they process information using a linear or step-by-step process and contend with delays in retrieving information (Autry & Berge, 2011).

### **2.3.6 Internet**

A forced social transformation is needed for the internet generation (William J., 1999). The transformation of the internet world has also given way to big challenges to many areas in our lives due to the new choices, perspectives, and opportunities in the 21st century (Benini & Murray, 2014). Not surprising, more than one-third of the digital natives had downloaded online music before reaching their mid-20s, logged 10,000 hours playing video games, over 200,000 emails and IMing, spent over 10,000 hours of talking on digital cell phones, as well, they had viewed over 20,000 hours of TV and half a million commercials (Autry & Berge, 2011; Prensky, 2001b).

### **2.3.7 Environment**

The digital environment has changed the thinking patterns of digital natives with different kinds of experiences out of the school environment. However, the digital immigrants still prefer to learn by hard copies in traditional classroom environments, centred around books and lectures without technology collaboration (Autry & Berge, 2011; Doran, et al., 2012).

## **3. Methodology**

This study has aimed to investigate the learning styles preferred by the museum visitors in the Malaysian context based on the learning styles of digital natives and digital immigrants. The researchers used the positivist research paradigm of a survey in the quantitative research methodology. According to Creswell, (2009, 2014), a survey enables the researcher to collect a large amount of quantitative data from a large population, specifically the museum visitors in this research context. Through a survey, the data was

able to be collected in a highly economical way using adequate samples to represent the whole population in this study (Saunders, Lewis, & Thornhill, 2009).

### 3.1 Instrument Construction

In order to identify the preferred learning styles between digital natives and digital immigrants, a set of dichotomous questions was developed from a thematic analysis of numerous previous research studies (Table 1). The dichotomous questions were intended to separate the digital natives from the digital immigrant visitors based on two possible answers (Yes/No). This method has been adapted from Toledo's (Toledo, 2007) discussion, where the division could be made based on two optional answers. Those who mostly chose "Yes" were categorised as digital natives, whilst those with mostly chose "No" answers were considered as digital immigrants. Gender, age, nationality, education level, and occupation were collected in the demographic section to see if there was any significant effect of personal background towards the preferred learning styles. Some of the previous studies had found that socio-economic status, cultural background, and gender had potential effects on the differentiation between the digital natives and digital immigrants (Bennett, Maton, & Kervin, 2008; Waycott, Bennett, Kennedy, Dalgarno, & Gray, 2010).

**Table 1.** The dichotomous questions based on the thematic analysis

References	Theme	Questions
(Cornu, 2011; Doran, et al., 2012; Gaston, 2006; Hammady, Ma, & Temple, 2016; Prensky, 2001a, 2001b; and Tisserand, et al., 2017)	Entertainment	Do you think learning is supposed to be entertaining and fun?
(Autry & Berge, 2011; Bayne & Ross, 2007; Gunter, Kenny, & Vick, 2008; and Prensky, 2001b)	Digital Use	Do you prefer to learn using digital tools rather than books?
(Autry & Berge, 2011; Bayne & Ross, 2007; Gunter, et al., 2008; and Prensky, 2001a)	Less Text	Do you prefer to see the images rather than a long text?
(Green & Hannon, 2007; Günther, 2005; Kopáčková, 2015; Toledo, 2007; and Waycott, Bennett, Kennedy, Dalgarno, & Gray, 2010)	Skills	Can you use a new digital gadget without reading the manual?
(Autry & Berge, 2011; Cornu, 2011; Jukes & Dosaj, 2006; and Zenios & Ioannou, 2018)	Multi-tasking	Can you listen to music, talk on the phone, and use the computer at the same time?
(Bennett, et al., 2008; S. Jones & Madden, 2002; and Prensky, 2001a)	Internet	Do you really need the internet to learn or to work?
(Autry & Berge, 2011; Gaston, 2006; Green & Hannon, 2007; Prensky, 2001b)	Environment	Do you prefer to learn out of the school environment rather than in the traditional school classroom?

### 3.2 Population and Sampling

The survey was conducted in the exhibition hall of the Music Museum of Malaysia in Kuala Lumpur from the 27<sup>th</sup> until 28<sup>th</sup> of July in 2019 with a population size of  $N=792$  of visitors weekly. Ambrose and Paine (2006) suggested that the minimum size of the sample in a museum study should be in between 200–300 visitors with a balanced degree of selection in the random sampling approach. In contrast, Diamond (1999) claimed that 96 visitors were just enough of a sample size to make generalisations and produce conclusions for a museum that has one million visitors per year, at a ten per cent sampling error

( $E=10\%$ ) level. To be specific, the researcher used the Raosoft sample size calculator to get the minimum size of samples in this research. As a result, a sample of  $n=259$  was identified as the minimum size to represent the  $N=792$  weekly visitor population of the Music Museum, at a 5% margin error and 95% confidence level. Therefore, in order to reduce the error percentage in this study, a total of 400 questionnaires were distributed randomly to the museum visitors at the entrance door. As a result, 265 of the surveys were returned and analysed, which exceeded the minimum size ( $n=259$ ).

**Table 2.** Population and sampling

Margin of Error ( $E$ )	Confidence Level	Population ( $N$ )	Recommended sample size ( $n$ )	Actual sample size ( $n$ )
5%	95%	792	259	265

#### 4. Data Analysis and Results

In order to identify the most preferred learning styles of the visitors in the Malaysian music museum, this paper used the descriptive cross-tabulation statistical analysis to explain the relationships between the learning styles (digital natives and digital immigrants) and the visitors' personal backgrounds (age, gender, nationality, education level, and occupation).

**Table 3.** Cross-Tabulation Analysis (Age)

Age	$n$	Entertainment		Digital Use		Skills		Less Text		Multi-Task		Internet		Environment	
		D.N	D.I	D.N	D.I	D.N	D.I	D.N	D.I	D.N	D.I	D.N	D.I	D.N	D.I
		12-17	40	39	1	26	14	24	16	27	13	19	21	30	10
18-24	98	93	5	68	30	64	34	92	6	76	22	92	6	87	11
25-34	51	51	0	38	13	26	25	45	6	38	13	47	4	44	7
35-44	56	54	2	39	17	27	29	46	10	32	24	47	9	41	15
45-54	14	13	0	7	6	6	7	10	4	11	2	13	0	11	2
55-64	5	5	0	5	0	2	3	5	0	5	0	5	0	5	0
65-74	1	1	0	0	1	1	0	1	0	0	1	1	0	1	0
Total	265	256	8	183	81	150	114	226	39	181	83	235	29	219	45
%	100	97	3	69	31	57	43	85	15	68	31	89	11	83	17

Table 3 showed that the majority of the respondents were from pre-teen until middle age, which was from 12 until 44 years old. The highest number of respondents were from the adults who were from 18 until 24 years old of 37% of the total contributions. Entertainment, internet connection, and less text were found as being the preferred learning styles amongst the adult visitors. This was compared to the teenagers who preferred fun learning outside of the formal classroom environment. It was surprising that the feedback from the middle age and older people (45 until 74) showed that they were 100% sure that learning was supposed to be fun and that an internet connection was needed for learning or working. This finding was contrasted with Zenios and Ioannou (2018) and Bennett, et al. (2008) who classified the generation born before 1980 as digital immigrants, as those who lacked technology fluency and always thought that learning cannot be fun (Autry & Berge, 2011). However, the result showed that they still lacked the skill to use new technology and possibly used the internet with a different approach, which was the need to read the manual before getting started as mentioned by Günther (2005).

**Table 4. Cross-Tabulation Analysis (Gender)**

Gender	n	Entertainment		Digital Use		Skills		Less Text		Multi-Task		Internet		Environment	
		D.N	D.I	D.N	D.I	D.N	D.I	D.N	D.I	D.N	D.I	D.N	D.I	D.N	D.I
Male	112	110	2	74	38	64	48	92	20	70	42	94	18	95	17
Female	153	146	6	109	43	86	66	134	19	111	41	141	11	124	28
<b>Total</b>	<b>n=265</b>	<b>256</b>	<b>8</b>	<b>183</b>	<b>81</b>	<b>150</b>	<b>114</b>	<b>226</b>	<b>39</b>	<b>181</b>	<b>83</b>	<b>235</b>	<b>29</b>	<b>219</b>	<b>45</b>
<b>%</b>	<b>100%</b>	<b>97</b>	<b>3</b>	<b>69</b>	<b>31</b>	<b>57</b>	<b>43</b>	<b>85</b>	<b>15</b>	<b>68</b>	<b>32</b>	<b>89</b>	<b>11</b>	<b>83</b>	<b>17</b>

These are similar findings with Yong (2017), who found that the difference of gender did not have many significant gaps in technology usability even though the females lagged behind the males in spatial abilities (Table 4). The lowest percentage of digital native learning style was on skills for males (57%) and females (56%), where they believed that they were able to use new technology without the need to read the manual books. However, the females could still enhance their skills with technology if they keep using digital tools, such as interactive games, in the museum. Entertaining and fun learning was the top priority for the males and females.

**Table 5. Cross-Tabulation Analysis (Nationality)**

Nationality	n	Entertainment		Digital Use		Skills		Less Text		Multi-Task		Internet		Environment	
		D.N	D.I	D.N	D.I	D.N	D.I	D.N	D.I	D.N	D.I	D.N	D.I	D.N	D.I
Local	229	221	7	155	73	125	103	198	31	157	71	204	24	194	34
Tourist	36	35	1	28	8	25	11	28	8	24	12	31	5	25	11
<b>Total</b>	<b>n=265</b>	<b>256</b>	<b>8</b>	<b>183</b>	<b>81</b>	<b>150</b>	<b>114</b>	<b>226</b>	<b>39</b>	<b>181</b>	<b>83</b>	<b>235</b>	<b>29</b>	<b>219</b>	<b>45</b>
<b>%</b>	<b>100%</b>	<b>97</b>	<b>3</b>	<b>69</b>	<b>31</b>	<b>57</b>	<b>43</b>	<b>85</b>	<b>15</b>	<b>68</b>	<b>32</b>	<b>89</b>	<b>11</b>	<b>83</b>	<b>17</b>

The results in Table 5 showed that 86% of the respondents were local visitors (Malaysian) and only 14% were tourists. Even with the small participation of foreign visitors, the pattern of the results of their preferred learning styles was almost the same with the local visitors. Overall, tourist and local visitors preferred the digital native learning style, especially for entertainment and internet connection.

**Table 6. Cross-Tabulation Analysis (Education Level)**

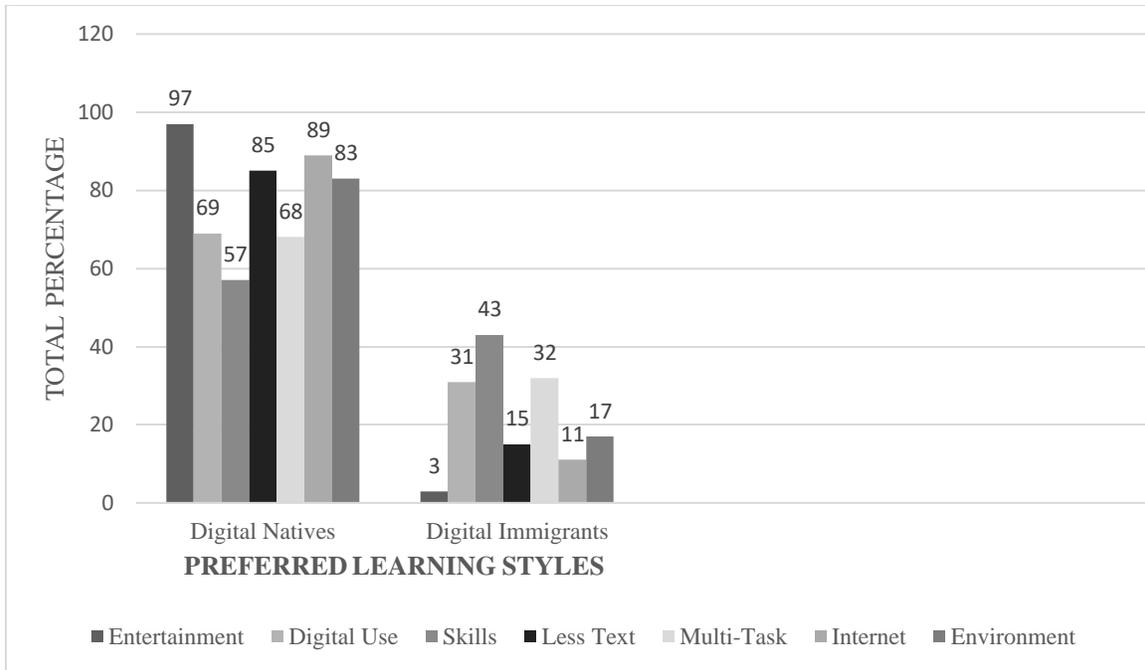
Edu.	n	Entertainment		Digital Use		Skills		Less Text		Multi-Task		Internet		Environment	
		D.N	D.I	D.N	D.I	D.N	D.I	D.N	D.I	D.N	D.I	D.N	D.I	D.N	D.I
No Edu.	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2
Primary	16	16	0	10	6	9	7	12	4	5	11	11	5	13	3
Secondary	55	50	4	33	21	30	24	39	16	33	21	44	10	42	12
Certificate	21	20	1	18	3	12	9	20	1	11	10	21	0	20	1
Diploma	61	61	0	38	23	36	25	57	4	45	16	57	4	51	10
Degree	94	93	1	73	21	54	40	84	10	74	20	89	5	81	13
Masters	14	14	0	10	4	8	6	12	2	12	2	12	2	12	2
PhD	2	2	0	1	1	1	1	2	0	1	1	1	1	0	2
<b>Total</b>	<b>n=265</b>	<b>256</b>	<b>8</b>	<b>183</b>	<b>81</b>	<b>150</b>	<b>114</b>	<b>226</b>	<b>39</b>	<b>181</b>	<b>83</b>	<b>235</b>	<b>29</b>	<b>219</b>	<b>45</b>
<b>%</b>	<b>100%</b>	<b>97</b>	<b>3</b>	<b>69</b>	<b>31</b>	<b>57</b>	<b>43</b>	<b>85</b>	<b>15</b>	<b>68</b>	<b>32</b>	<b>89</b>	<b>11</b>	<b>83</b>	<b>17</b>

The highest participation of the surveys was from the level of education under-graduate (certificate, diploma, and degree) with 66%, followed by secondary schools with 21%, post-graduate level (Masters and PhD) with 6%, primary school with 6%, and no formal education with 1%. The result showed that the respondents without formal education (100%) preferred the digital immigrant styles rather than digital native learning styles. The respondents with the highest education level (PhD) showed that they could adapt to the traditional classroom environment but still preferred entertainment and less text in the learning styles.

**Table 7. Cross-Tabulation Analysis (Occupation)**

Occup.	n	Entertainment		Digital Use		Skills		Less Text		Multi-Task		Internet		Environment	
		D.N	D.I	D. N	D.I	D. N	D.I	D. N	D.I	D. N	D.I	D.N	D.I	D. N	D.I
		<b>Student</b>	109	105	4	81	28	65	44	90	19	72	37	95	14
<b>Housewife</b>	18	15	2	9	8	9	8	15	3	10	7	13	4	13	4
<b>Unemployed.</b>	4	4	0	3	1	2	2	4	0	4	0	4	0	4	0
<b>Profession.</b>	97	97	0	67	30	53	44	87	10	73	24	91	6	81	16
<b>Freelancer</b>	10	9	1	6	4	7	3	10	0	6	4	10	0	10	0
<b>Self-emp.</b>	25	24	1	17	8	13	12	19	6	16	9	20	5	20	5
<b>Retired</b>	2	2	0	0	2	1	1	1	1	0	2	2	0	2	0
<b>Total</b>	<b>n=265</b>	<b>256</b>	<b>8</b>	<b>183</b>	<b>81</b>	<b>150</b>	<b>114</b>	<b>226</b>	<b>39</b>	<b>181</b>	<b>83</b>	<b>235</b>	<b>29</b>	<b>219</b>	<b>45</b>
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For the category of occupation, Table 7 indicated that the students were the highest respondents with 41%, followed by professionals with 37%, self-employed with 9%, housewives with 6%, freelancers with 4%, unemployed with 2%, and the lowest was the retired persons with only 1%. The data showed that the retired persons, usually the older persons, lacked digital usability and multi-tasking skills. This finding was in line with the statement from Autry and Berge (2011) who emphasised that this generation had a barrier between them and the digital natives in understanding how to manipulate the digital components. The students and professionals had a similar tendency in having fun learning, requiring internet connection, and preferring images rather than long texts.



**Figure 1.** The preferred learning styles

Based on the statistical data in Figure 1, the majority of the current visitors in the Malaysian music museum preferred the learning style of digital natives rather than the digital immigrants. The most preferred learning style was entertaining and fun (97%), followed by internet connection (89%), less text (85%), out of school environment (83%), digital use (69%), Multi-task (68%), and skills enhancement (57%).

## 5. Discussion and Implication

Entertainment, internet connection, and less text were found as the prioritized criteria to the learning style amongst the adult visitors compared to the teenagers which preferred fun learning outside of the formal classroom environment. Tourists and local visitors preferred a similar pattern of learning style, especially for entertainment and internet connection. These results need to be highlighted for improvement because most of the museum exhibitions in Malaysia fail to give satisfaction to the visitors due to static interpretation rather than dynamic technique (Hashim, et al., 2014), with the existing approach of relying on text, pictures, and passive modelling that offers a “dead” or “static” approach (Ahmad, Abbas, Mohd. Yusof, et al., 2018; Ambrose & Paine, 2006). This scenario has led to the passive visitors’ learning experiences (Hashim, et al., 2014) and obviously contradicts with the active learning setting as suggested by Chang (2006).

Both genders, male and female visitors also wish to experience entertaining and fun learning due to their ability to use new technology, thus, their skills can be improved with the use of digital tools in the museum. Undeniable, many of the previous studies have proved that entertaining digital learning tools in museums, such as gamification, is able to increase the visitors’ engagement (Kiili, et al., 2012; Reiners & Wood, 2015), provide motivation (Dichev, et al., 2014; Sailer, et al., 2013) and enhance understanding of visitors through a fun and enjoyable learning environment (Khaleel, et al., 2016; Kusuma, et al., 2018), and directly increase the player’s skills and performance (Gunter, et al., 2008; Khaleel, et al., 2016). However, equal consideration should be put on the older persons who have low digital usability and multi-tasking skills because of their limitations in understanding how to manipulate the digital components. In order to solve this problem, the museum needs to provide easy access and avoid complicated systems in any kind of digital learning tools to ensure that they are applicable for all ages of visitors.

Obviously, the respondents with the higher education level showed that they could adapt to the traditional classroom environment but still preferred entertainment and less text in the learning styles. Whilst, the student and professional occupation category had a similar tendency in having fun learning. Entertaining and fun learning approaches were rejected by those respondents without formal education because they still prefer traditional learning styles. However, their number was too small amongst the target visitors for this category to be considered.

## 6. Conclusion

Based on the findings of this research, the researchers suggest that the museum institutions should focus more on the entertaining and fun learning style approaches like games and participatory activities to fulfil the demand and to attract more visitors in the future. An Internet connection has become compulsory for the visitors to allow them to explore additional on-line information during the visit session. Hence, the curator should plan and design the exhibition content with more attractive images or infographics rather than just long text information. Besides, the environment of the museum should be relaxing and not too formal as with the traditional classroom that is surrounded by books and lectures. The implementation of digital tools, such as interactive kiosks, touch screen monitors, or digital games, in the museum will increase the attraction of visitors and indirectly expose them to multi-tasking activities and skills enhancement.

The findings of the study have revealed that the development of technology has forced digital immigrants to assimilate and adapt the digital natives' learning styles to survive in this digital era. Even though they are of different ages, genders, nationalities, education levels, and occupations, the majority of the museum visitors nowadays prefer the digital natives' learning styles which highlight the use of digital tools and networking. Undeniably, the rise of the digital native visitors is a big challenge for the museum sector in providing the right selection of learning approaches. In order to stay relevant, the museum sector as an informal learning institution needs to prioritise the digital learning style and understand the requirements of the majority (digital natives) rather than the minority (digital immigrants).

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