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MUSEUM-BASED LEARNING FOR CREATIVITY: INDONESIAN AND MALAYSIAN TEACHERS' EXPECTATION VS REALITY

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ABSTRACT

Museum-based learning is considered as one of the creative pedagogy strategies that may have an impact on insight and inspiration input as a driving force for the emergence of new ideas and enrichment of the diversity of solutions that students can come up with when solving a problem. However, its implementation in Malaysia and Indonesia is still low in number and quality. Constraints that hinder the implementation of the concept of museum-based learning are still needed to be studied in order to find out the root of the problem and find ways to improve educational institutions, museum organisers, and educational policymakers. By doing a two-phase approach that employed both quantitative and qualitative methods to compare data from the two countries, this study examines the expectations of teachers in Indonesia and Malaysia about museum-based learning for creativity and the problems that they face in its implementation. From the data analysis, it is found that narratives and both external and internal dialogues have central roles in museum-based learning for creativity. These embodiment dialogues will ignite students' and teachers' imaginations and inspirations and will eventually produce new ideas. However, teachers in Malaysia and Indonesia still have to face several issues, which include some important considerations about the need to develop museum creative programmes that are interactive and experiential; integrate arts and technologies; creatively arrange the learning strategies that match the contents of both museum and schools' curriculum targets; propose curriculum review that values learning beyond the classroom; provide enough and appropriate supporting infrastructures; empower teachers with the time management and partnership with other parties including museum educators.

Keywords: Museum-based learning; creativity; teacher perception; challenging realities

1. INTRODUCTION

The partnership and collaboration with outside agencies and learning beyond the class, one of which is through museum-based learning, are two of the strategies designed to implement creative pedagogy (Chappell & Craft, 2011; Davies et al., 2013; Gregoriou, 2019; Pinasti, 2010). By implementing museum-based

learning, educators may provide a learning atmosphere that supports the growth of creativity including a balance between standard procedures and freedom, a playful learning atmosphere, a space for something that cannot be predicted and is open-ended, an autonomy of learning and improvisation, empowerment and active involvement of students, a chance to compile and critique of ideas, utilizing various sources, and exploring and synthesizing various important information (Craft et al., 2013a; Davies et al., 2013; Sawyer, 2011; Wulandari, 2019).

In a preliminary study of this research (Astuti et al., 2021), it is found that museums can give teachers a way of providing concrete fact-based learning, a new atmosphere in learning, and opportunities to learn in art, learn through art, appreciate art, and teach for creativity. Teachers conveyed several aspects of creativity that were considered to have increased after doing museum-based learning. These included generating many ideas, answers, and problem solving as well as exploring and coming up with new ideas; generating varied ideas; answering or questioning; enriching and developing an idea or product; using imaginative thoughts and actions; imagining when trying to solve problems; asking questions to or with friends; and debating or discussing ideas with friends and teachers. These aspects suggest that museum-based learning may have an impact on insight and inspiration input and work as the driving force for the emergence of new ideas and enrichment of the diversity of solutions that students can come up with when solving a problem. This is in line with the opinion which states that the engine driving creativity is not only imagination but also the interaction of ideas within oneself, with the ideas of others or other products outside themselves (Chappell et al., 2016). This gives students opportunities to see and interact with the surrounding environment so that ideas or inspiration grow from these interactions, which confirms that museum-based learning pedagogy is oriented as a means of igniting ideas or providing inspiration for creative works.

This is in line with the function of the museum as a means of supporting education (Isa, 2017; Isa & Zakaria, 2007) including for supporting creativity (Foley, 2014). However, its implementation still encounters various obstacles. In Indonesia (Astuti et al., 2021), for instance, only a few teachers have ever implemented museum-based learning. They admit that to carry out museum-based learning they encounter various obstacles such as limited funds, difficult administrative requirements including permission from schools, difficulty in guaranteeing security and safety and limited facilities and infrastructure including access to the nearest museum and transportation. In Malaysia, the concept of museum-based learning faces similar issues. Issues such as safety, funding, unclear curriculum link between museums and lessons in school, and lack of comprehensive educational resources contributed to teachers' motivation to carry out an excursion to the museum. Teachers' lack of experience in handling educational sessions impacted students' meaningful learning experience in the museum (Isa, 2017). School excursion activities consist of students walking around objects and occasionally reading the information tags, with little meaningful learning. There is also a tendency in both countries that some teachers of certain subjects feel that museum-based learning is not appropriate and relevant for their learning targets. These constraints, which hinder the implementation of the concept of museum-based learning, need to be studied to identify the root of the problems and find solutions to improve educational institutions, museum organisers, and educational policymakers.

From this background, the purpose of this study is to examine the expectations of teachers in Indonesia and Malaysia in providing museum-based learning for creativity and the problems they face in its implementation. This study seeks to examine how the perception of teachers in Indonesia and Malaysia towards museum-based learning is seen from the aspect of the urgency of education beyond the classroom in increasing the creativity of teachers and students and seeks to find the roots of the problems leading to the delay in implementing museum-based learning in Indonesia and Malaysia. This research is expected to provide a theoretical and practical evaluative overview of museum-based learning for creativity.

2. MATERIALS AND METHODS

To answer the research questions regarding the perceptions of teachers towards museum-based learning for creativity, the teachers' expectation toward the museum-based learning and the challenges they encounter in implementing museum-based learning, this present study was conducted by adopting a two-phase approach that employed both quantitative and qualitative methods to analyse data collected from the two countries. Data were collected through an online survey. Instrument reliability was measured using the type of internal consistency with the Cronbach Alpha technique, which is assisted by using the SPSS program on a windows computer. The value of the Cronbach Alpha coefficient for all research variables is greater than 0.6, which means that all questions in the research variables are reliable. Informed consent and approval relating to ethical considerations were included at the beginning of the survey. This ethical procedure includes anonymity of the participants, freedom to answer specific questions or be involved in the interview, the participant's right to withdraw, the confidentiality of their data, and the storage of data. Collected data were

analysed descriptive quantitatively and then qualitatively using the systematic analysis method by categorising and looking for patterns of linkages between the information collected.

The teacher population in Indonesia in 2019 was about 2,698,000 and in Malaysia in 2020 was about 417,000. The sample size was calculated with 80% of confidence level and 6% of margin of error, so that a minimum of 114 participants were required from each country. A total of 146 respondents from Indonesia and 116 respondents from Malaysia filled out the questionnaires from September to November 2020. The respondents from Malaysia were 116 teachers from various regions. Based on the level of the institution where they work, 69% are Middle School teachers, 11.2% are Primary School teachers, and 19.8% are Preschool teachers. Approximately 69% of respondents work in public schools (state schools) and 31% work in private schools. The 116 teachers teach various subjects, including English, Malay, Mathematics, English, Visual Arts Education, and Science. Meanwhile, respondents from Indonesia included 146 teachers from various regions. Based on the level of the institution where they work, 50.71% are high school teachers, 37.86% junior high school teachers, 8.57% elementary teachers, and 2.86% early childhood education teachers. 72.14% of the respondents work in public schools and 27.86% work in private schools. These 146 teachers teach various subjects, including Fine Arts, Music, Dance, Drama, Counselling, Physical Education, Sports, Health, Physics, Biology, Natural Sciences, English, Indonesian Language, Class Teachers, Information Communication Technology, Mathematics, Social Sciences, Cultural Arts, Scouting, Al Qur'an, Craft Cultural Arts, Catering, Administration, Karawitan Art, Craft, Craft, History, Visual Communication Design, and Animation.

3. RESULTS AND DISCUSSION

In this section, the data analysis is grouped into 3 sub-points, namely museum-based learning in Indonesia, museum-based learning in Malaysia, which is followed by a discussion of the findings.

3.1 Museum-based learning in Indonesia

3.1.1 Experience in visiting museums for learning

Of the 146 respondents, 40.58% of teachers had implemented museum-based learning and 59.42% had never visited a museum in the context of learning. 58.33% of the respondents who had implemented museum-based learning stated that the reason why they visited the museum for learning was to implement a programme created by the school. The rest stated that museum-based learning was carried out because it met the students' needs and for other reasons. This shows that the reasons for teachers implementing museum-based learning are more influenced by external factors such as school programmes rather than from internal motivation.

The activities carried out by teachers and students during museum visits still tend to be conventional. 71.15% of respondents answered that the main activity they do in museums is viewing the collections. Around 40.38–46.15% visit the temporary exhibitions and museum libraries, seek information, and listen to lectures or explanations about museum collections. Activities less frequently conducted by teachers and students (below 25%) are watching film or slide screenings, conducting research or scientific studies, appreciating some works in museums as assignments, drawing sketches from museum collections, photographing museum works and buildings, creating video documentation, and making reports.

Most of the teachers who had implemented museum-based learning (87.76%) were satisfied with the visits. Some felt that a visit to a museum is beneficial especially for students. In addition, a visit to the museum helps implement the learning to be achieved. Museum visits provide a wealth of information, historical facts, and insights. They also help teachers and students get to know the culture and customs of their area. The museum is a learning facility outside of school that is quite easy to reach and provides visual education that is appropriate for millennial generation students. In the Covid-19 pandemic situation, which requires Distance Learning, visiting museums online is very helpful for teachers and students, especially to introduce artworks and improve basic competencies for appreciation, analysis, and evaluation of works of art. Museum-based learning provides experiences are different from conventional classes. Museum visits generate inspiration and enthusiasm for work and also raise awareness of the need to protect the nation's heritage.

Some teachers stated that the success of museum-based learning was also influenced by the optimal preparation that was made. Teachers usually conduct observations before finally deciding which museums to visit. This makes the teacher sure to choose the best and most appropriate museum for the expected learning. Some of the teachers said that the interest in visiting museums is usually determined by how the museum collections are presented and whether this is attractive and modern. This will also affect the impression of the museum content, which means the existing collection will be impressive. In addition, the friendliness of the museum guides or educators also influences the teacher's interest in visiting the museum.

A small number of visitors (12.24%) were dissatisfied with the museum visits. Some of the reasons, among others, were because the collections of the museum are not very interesting, museums are expensive learning tools, and many other sources of knowledge can be used. One respondent expressed his disappointment because when he visited the museum because there was no long video. Some of them were disappointed because the museum had not shown a contemporary atmosphere and therefore did not match millennials' expectations.

3.1.2 Teachers' perceptions of museum-based learning

Around 93.80% of respondents stated that they wanted to use the museum as a means of learning in the future. Several reasons put forward, among others, are because museums can be a means of getting to know the history, culture, and art of the nation from time to time. Museum-based learning provides a space to appreciate the values of the past. This gives rise to a sense of pride and nationalism towards their nation. These senses will become a natural incentive to always protect and pass on the nation's culture to the next generation. Apart from that, taking students to the museum may also revitalise the function and role of the museum. From another viewpoint, the respondents stated that museum-based learning makes it easy for students to understand learning materials such as public service, English, text analysis, and literacy. There are many dioramas and historical stories that can build inspiration and imagination for students and, by looking at past works, students can gain references for current and future works.

Some respondents stated that they wanted to try new innovative learning methods so that the learning carried out was more varied. Museum-based learning provides a more contextual, engaging, and enjoyable learning experience. Learning beyond the classroom, including museums, will be interesting and fun as it includes recreation. Especially in the era of the Covid-19 pandemic, online museum-based learning has helped teachers carry out distance learning. Museum-based learning also helps teachers explain certain learning materials more easily because museums and their collections can be a supportive learning medium. By looking at the museum collections, students can have a real picture of what previously could only be seen and learned from books and the internet. This provides an opportunity for students to be able to compare and gain their own experiences about an object without having to focus only on textbooks.

Only 6.20% of the teacher respondents stated that they did not have a desire to use the museum as a means of learning at a later date. The reason is partly due to the fact that there are no nearby museums in the area (such as several areas in Sumatra and Papua), making it difficult to carry out museum-based learning. The existence of supporting facilities and infrastructure owned by the school is also inadequate. In addition, museum-based learning seems to require a lot of time, meaning its implementation is less effective. One respondent said that the museum's contents were less attractive and were not up to date. Another reason is the relevance of museums to learning objectives. A math teacher said that it is not apparent whether mathematics is associated with museums. However, the teacher expressed interest in digging further if there was mathematics material that was suitable to be integrated with museum-based learning.

In general, when asked about the benefits of making museums a source and means of teaching and learning, the teacher respondents answered that it increases appreciation of natural and artificial objects, increases creativity, change students' perspectives, and it works as the source of inspiration and understanding of learning materials as well as an understanding of phenomena and issues. The most benefits felt by teachers are the museum aspect as a means of appreciation. Approaching 69.23% of teachers stated that museums increase students' appreciation of natural events and creation. Another aspect that was often mentioned is they provide inspiration and ideas and to help students understand the subject matter (51.28%) and to facilitate understanding of a phenomenon and an issue (48.72%). However, less than 44% of the respondents mentioned other aspects such as increasing appreciation of natural events and creations and changing the way students see the world.

According to 88.19% of respondents, in general, the competencies that can be achieved through museum-based learning are related to aspects of knowledge (cognitive) and critical thinking, such as knowledge of regional and national history, cultural heritage artefacts, and knowledge of art. Meanwhile, the attitude aspect (affective) was mentioned by 49.61% of the respondents. The attitude aspects that can be increased, among others, are respecting culture and achievements, wisely responding to history and culture, interpreting Indonesia's wealth, imitating the nation's predecessors, appreciating the variety of national works, nationalism, obeying regulations, trying to preserve cultural values and heritage and having the motivation to do better. Meanwhile, 36.22% of respondents said that museum-based learning can improve students' skills, for example writing skills, creating works of art or literature, art criticism, inspiration, and work references.

Encouraging factors for teachers to implement museum-based learning are knowledge and insight (53.85%), personal interests or desires (48.72%), activities that match the learning target (48.03%), interactive and educational activities (47.24%), suitability of museum content with learning content (46.71%), the demand of the curriculum (34.65%), regular school programs (29.92%), demands for learning materials

about museums and exhibition management (25.64%), interesting and interactive museum exhibits (23.08%), the museum location (17.95%), the availability of activities for children (16.54%) and the latest technology used by the museum for exhibitions (15.38%).

3.1.3 Challenges

Some of the obstacles faced by teachers in implementing museum-based learning include limited funds (58.33%), permission from school (45.96%), limited facilities (26.67%), remote location (21.25%), teachers' workload, and students' study load (20.31%), various alternative of learning strategies (17.19%), incapability of museums to support learning targets (15%), less attractive content and exhibits of the museum (14.06%), complicated administrative procedures (12.2%), lack of safety and security (8.59%), the Covid-19 pandemic situation (5%), time-consuming (5%), lack of means of transportation (5%), no instruction to conduct museum-based learning in the curriculum (5%), no interest (3.13%) and teachers' incapability to conduct museum-based learning (1.56%).

3.2 Museum-based learning in Malaysia

3.2.1 Experience in visiting museums for learning

Of the 116 Malaysian teacher respondents, 62.9% of them took students to visit museums in the context of learning, while 37.1% of respondents had never asked students to do so. Museum visits done by teachers in order to conduct museum-based learning aims to make museums a source of teaching and learning, meet students' needs, obey club and organisation rules, improve tourism, hold annual school activities, participate in competitions, and conduct field studies. Of these various goals, the one most often mentioned by teachers was to make the museum a source of teaching and learning. It was mentioned by 70% of the teacher respondents.

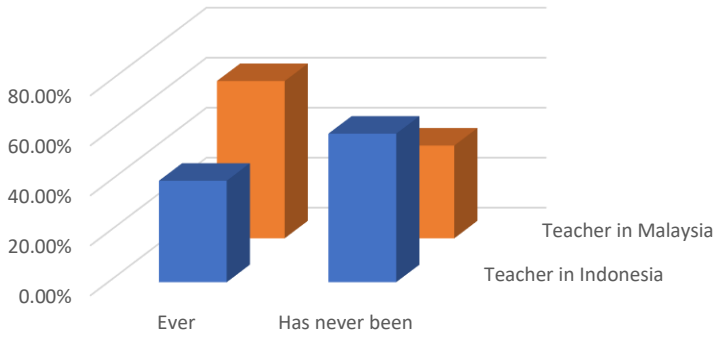

Figure 1: Experience in Implementing Museum-based Learning

The number of teachers who have never visited museums in the context of learning can be seen in Figure 1. It can be observed that the percentage of teachers conducting museum-based learning in Malaysia is greater than the percentage of teachers doing museum-based learning in Indonesia, 62.9% and 40.58% respectively.

3.2.2 Teachers' perceptions of museum-based learning

Encouraging factors for teachers to implement museum-based learning respectively are related to the ways museums empower teachers and students' thinking (57.4%), interactive museum exhibitions (45.2%), relevant museums for teachers and students (42.6%), demands for learning materials about museums and exhibition management (42.6%), personal interests or desires (41.7%), the relevancy of museum exhibitions with the learning being taught (41.7%), the advanced technology used in museum exhibitions (26.1%), and the location of the museum (15.7%). It can be shown that the data from Malaysia has a quite same tendency as that from Indonesia. The majority of respondents are encouraged by internal motivations such as empowering the thinking, getting new knowledge, and other personal interests or desires. The other significant factors that motivate teachers are related to the situations of the museums such as the collections, activities, and integrated technologies, while the remaining factors do not have such a significant impact. The benefits that teachers get when implementing museum-based learning include increasing student appreciation of natural events and creation (74%), changing the way they see the world (64%), increasing appreciation of natural events and creation (58.8%), increasing creativity (56.1%), providing inspiration and ideas for

teachers and students (47.4%), facilitating understanding of a phenomenon and issue (46.5%), and helping students understand learning material (38.6%).

The encouraging factors for Malaysian and Indonesian teachers to implement museum-based learning are compared in Table 1.

Table 1: Encouraging Factors for Teachers to Implement Museum-based Learning

No.	Encouraging factors	Respondents from Malaysia	Respondents from Indonesia
1.	Personal interests or desires	41.7%	48.72%
2.	The ways museums empower teachers and students' thinking	41.7%	46.71%
3.	Interactive museum exhibits	45.2%	23.08%
4.	The location of the museum	15.7%	17.95%
5.	The latest technology-based museum exhibition	26.1%	15.38%
6.	The ways museums empower the thinking of teachers and students	57.4%	-
7.	Relevant museum for teachers and students	42.6%	-
8.	Demands for learning materials about museums and exhibition management	42.6%	25.64%
9.	Getting knowledge and insight	-	53.85%
10.	the demand of the curriculum	-	34.65%
11.	Carrying out routine school programs	-	29.92%
12.	Special activities for children	-	16.54%
13.	Interactive and educational activities	-	47.24%
14.	Activities that match the learning target	-	48.03%

3.2.3 Challenges

It can be seen that Malaysian teachers mostly found that administrative procedures (59.1%) are the most complicated part of implementing museum-based learning, followed by the distance of the museum from school (41.7%). Other significant obstacles are school locations which are remote and far from museums (41.7%), limited funds (40%), the lack of safety and security means (36.5%), and the lack of teacher capabilities in carrying out learning in museums (20%). Meanwhile, few teachers also found no support from parents, no interest in visiting museums, limited time for implementing learning, transportation, teacher workload and student study load as the challenges.

Obstacles faced by Malaysian and Indonesian teachers in implementing museum-based learning are shown in Table 2.

Table 2: Challenges in Implementing Museum-based Learning

No.	Challenges in implementing museum-based learning	Respondents from Malaysia	Respondents from Indonesia
1.	Limited funds	40%	58.33%
2.	Lack of safety and security factors	36.5%	8.59%
3.	Teacher workload and student study load	6.1%	20.31%
4.	No interest in visiting the museum	5.2%	3.13%
5.	Remote location	41.7%	21.25%
6.	Complex and rigorous administrative procedures for taking students outside	59.1%	12.2%
7.	Permission from school	-	45.96%
8.	No teachers capable of carrying out learning in museums	20%	1.56%
9.	No support from parents	12.2%	-
10.	Limited time for implementing learning	0.9%	-
11.	Transportation	0.9%	5%
12.	Limited means and media	-	26.67%
13.	The incapability of museums to support learning targets	-	15%
14.	The Covid-19 pandemic conditions	-	5%
15.	Time-consuming	-	5%
16.	Various alternatives of learning strategies	-	17.19%
17.	Less attractive content and exhibits of the museum	-	14.06%
18.	No instruction to conduct museum-based learning in the curriculum	-	5%

3.3 Discussion

3.3.1 Museum-based learning for creativity

Related to creativity, we can see a promising future of museum-based learning. We found that 88.19% of respondents agreed that museum-based learning could increase student creativity, while only 11.02% stated it was a probability and 0.7% stating that there is no impact. The increased aspects of creativity mentioned are the aspect of authenticity, creating multidisciplinary works of art, stimulating and motivating to work more and be productive, sparking ideas, making artefacts as references, making imitations of artefacts, encouraging innovation in using existing cultural art artefacts, understanding the process of artefact

occurrence as knowledge about the creation of works, igniting imagination, being used as aesthetic references, making alternative findings (alternative energy, ideas from electrical museums), being a project and portfolio ideas, encouraging thinking out of box, elaborating with real artefacts, motivating to explore and experimenting materials, inspiring new work tools and techniques, developing concepts in work, retelling what is seen creatively, originality because students know what has existed and are motivated to find new things, and improving students' abilities to produce compositions or work, generating new ideas (on the spot), and previously unknown. Overall, even though the Covid-19 outbreak leads to difficult situations, museum visits generate inspiration and enthusiasm for working.

By giving sufficient information, historical facts and insights, local culture and custom understandings, the museum can build inspiration and imagination of visitors. A preliminary study by Astuti et al. (2021) shows that museum-based learning is a way to spark students and teachers' inspirations in which they can produce multiple ideas regarding the meaning, philosophies, reasons, media, techniques, forms, and the scientific and social aspects of any new entity. The collections — even presented in digital forms — and also interactive activities offered by some museums result in a new meaning, forms, and formations (Ibrus & Ojamaa, 2019). Museums therefore provide a space for an embodiment of dialogue between oneself and the surrounding objects, which are not only humans but also non-living objects and concepts (Chappell et al., 2019; Chappell et al., 2016; Chappell et al., 2008; Chappell & Craft, 2011; Cremin et al., 2013; Selkrig, 2018). Interactions between the collections and humans create dialogical moments where the old perceptions of the actors may constructively and dynamically change. This is in line with the urgency of inner or intrapersonal creative dialog (Hyatt, 1992), as creativity also has a close causality with the dialectic or communication process. External communications during the museum visits will ignite internal monologue and imagination that eventually produce the "Aha!" moment either at that time or later. Through the embodied dialogue with a lot of past works, accompanying educators and following activities, students and teachers can find references for current and future works.

From Possibility Thinking (PT) and as the driving engine of creativity (Burnard et al., 2006; Chappell et al., 2008; Craft et al., 2013b; Cremin et al., 2006; 2013), teachers agreed that museum-based learning provides space for children and allows them to pose questions, play, immerse, be imaginative, and be self-determinate. This underlines the urgency of creative partnership especially with a museum to facilitate creative pedagogy where the narrative plays a main role in nurturing creativity (Gregoriou, 2019). Gregoriou emphasis four elements of museum narrative that can spark PT, namely historical artefact, children, experts, and stimulus space including physical facilities, emotional facilities, and a narrative scenario. The stories behind the authentic works and the interactive project hosted by a museum will be the way for those four elements to interact and provide narratives. This also underlines the importance of museum interactivity that can facilitate visitors' experience by engaging them in immersive educational experiences. The interactive tasks set by teachers or in collaboration with museum educators can be explored by students imaginatively. Children immerse with the activities playfully, constructively build their knowledge and perspective by dynamically changing several points of view, curiously pose questions, extracting more possibilities and new ideas.

3.3.2 Challenging realities

The majority of respondents of both countries are believed to be inclining to do museum-based learning, which is encouraging by internal motivations. However, this tendency does not seem strong enough to encourage them to make it a reality. Most teachers who have truly done the museum-based learning were forced by external factors instead such as school programmes. In another word, they will do what they want only until some conditions are forcing them to do so. We underline some points that inhibit teachers from doing museum-based learning, namely museum exhibitions are not interesting, misalignment between the needs of subjects and curriculum with the content and activities offered by the museum, lack of supportive policy, lack of supportive infrastructures, and interpersonal dilemmas.

3.3.2.1 Museum exhibitions are not interesting

The collections exhibitions and activities joined by teachers and students were mostly still conventional. The majority of activities during the museum visits were seeing collections, seeing temporary exhibitions, visiting museum libraries, seeking information, and listening to lectures or explanations about museum contents. This correlates with the concept of creative pedagogy in which there is a connection between *teaching for creativity* and *teaching creatively* (Jeffrey & Craft, 2004; Selkrig & Keamy, 2017). To support the emergence and progress of students' creativity, teachers have to be more creative in their learning approaches and methods. This also applies to museum-based learning. Although the place or context has brought students to learn beyond the classroom, the effectivity in fostering creativity will not be achieved if the learning situations are monotone.

It is increasingly believed that the situation during museum-based learning should embrace students' active learning (Altintas & Yenigül, 2020). By doing interactive activities, for example, students immerse and get lost in the creative process. Interactive activities can also produce narrative as students can imagine themselves differently toward situations or stories so that the embodiment dialogue can emerge. In museum-based learning, interactivity between child–adults/peers; child–technology and child — the environment is seen as a necessity in children's learning experiences (Andre et al., 2017). Thus, museums can offer various choices of activities such as hands-on exhibits, programmes involving play, and educational adventures. Regarding this, Gregoriou (2019, p. 54) emphasizes that:

> "Ordinary displays of objects and images combined with creative interactions offer an effective method for designers and museum experts to make the visitor experience more attractive and meaningful."

The story behind museum collections presented interactively can trigger curiosity that leads to open-endedness problem solving where information and ideas are flexibly synthesised. These attractive and meaningful experiences will invite children to voluntarily get involved in the learning activity. This is also in line with the concept of Experiential Learning that engages visitors with *immersive artistic* and *creative processes* (Piscitelli & Penfold, 2015). Piscitelli and Penfold (2015) define Experiential Learning as:

> The exhibition's environment and program are specifically designed to provide opportunities for children to connect with their own artistry and creativity, allowing for deep engagement and discoveries throughout children's visits. The experiential model utilizes children's play as the catalyst for inquiry, and provides support systems (physical environment and social environment) to generate learning in curated and designed spaces (p. 266).

Experiential learning will nurture students' creativity by providing a playful environment in which students can experiment with various concepts and materials, independently direct imaginative play, collaborate with other actors such as peers, teachers, or museum educators and discover new creative processes.

From the data, we also highlight the need for museums to synergise with the latest development of arts and technologies to attract new generations of millennials. Museums can integrate the exhibitions and the activities with arts and/or arts activities by which students can immerse themselves within playful experiential learning activities. Arts and arts education can create delightful situations that are suitable for students' interests and curiosities (Foley, 2014; Surface & Ryan, 2018; Wulandari, 2020). This also applies to cutting-edge technology integrations. By synergising the exhibitions and activities with the newest development of technologies, the museum can provide attractive interactive learning (Kusumaningsih et al., 2018). This will provide the solutions to the problems of the low millennial visitor interests.

3.3.2.2 Misalignment between the needs of subjects and curriculum with the content and activities offered by the museum

The other significant problem that inhibits teachers from bringing their students to the museum is that museums do not support learning targets. This is because, firstly, the learning materials and schedule have been determined in the curriculum, thus teachers find it difficult to create learning strategies in which museums provide the setting. Secondly, some teachers (the data shows only a small percentage) feel that museums and their contents have no relevance with the subjects they teach. A math teacher, for example, declared that he does not have the desire to do museum-based learning since he does not see the connection between mathematics and museums. However, the second reason seems not be the case because, in a more holistic-transdisciplinary concept (Burnard et al., 2021; Chappell et al., 2019; Hapidin et al., 2020; Liao, 2016; Perignat & Katz-Buonincontro, 2018; Roughley et al., 2019; Wulandari, 2017), mathematics does have a relationship with some museums, especially sciences and technology museums. In temple artefacts, for instance, there is a conceptual narrative of how the ancestors creatively designed the temple by using mathematic considerations to create strong architectures. We find that the teachers have such opposite arguments toward museum-based learning, which are mostly influenced by limited access to quality museums. However, we can highlight that these reasons have become significant obstacles since the museum as an alternative learning setting has to offer a way for teachers and students to achieve learning goals as determined in the subject syllabus and curriculum. If the museum cannot offer a highly effective and suitable learning activity, teachers and other interested parties will find that there are other options instead of visiting museums. In the western context, this has also been a concern as it was quite difficult to understand the needs of teachers who make the key decisions in field trip planning and implementation (Anderson et al., 2006). We find that there is a correlation between teachers' flexibility and the definition of curriculum fit. If the curriculum fit is seen as the top importance in planning and implementing museum-based learning, teachers must have the

creative perspective to look at museums as potential learning settings that can be explored to achieve any materials and goals determined in the curriculum.

3.3.2.3 Lack of supportive policy

Besides the difficulties in getting permission from the school and the complicated administrative procedures, the problem is also relating to the curricula. Both in the Indonesian and Malaysia curriculum, there is no explicit instruction to provide museum-based learning apart from for history and art subjects. This decreases the motivations of teachers. It also shows the urgency of educational policy as an external factor for motivation and encouraging-supporting aspects of learning (Godfrey & Mcleod, 2017). Therefore, there is a need to review the curricula and give more creative space for learning beyond the classroom.

3.3.2.4 Lack of supportive infrastructures

It is found that both countries still face technical issues, such as limited funds, limited means, limited access to the museum related to the distance, transportation, problem in low safety and security factors that become the major cause for not getting permissions from the parents, and limited supportive health care protocol in visiting the museum during the Covid-19 outbreak.

3.3.2.5 Interpersonal dilemmas

We notice that the creative pedagogy initiative positions the teachers as the central actors who determine the implementation and the quality of museum-based learning. Unfortunately, teachers themselves are subject to many interpersonal dilemmas. Firstly, regarding time constraints, teachers found it was difficult to prioritise museum-based learning since it needs long time allocations even when the target is to nurture students' creativity. Teachers and students already have lots of demands within the curriculums, which means they are burdened with other workloads. This highlights the urgent need to have the ability in time management and shift the perception to understanding that museum-based learning can be a fun solution, which can provide students and teachers an escape from boring routines while still achieve many learning targets. Secondly, teachers feel that they do not have enough skills to provide museum-based learning. Besides teacher training in providing museum-based learning (Anderson et al., 2006), this also underlines the need to create creative learning empowered by partnership and collaborations with museum educators (Chappell & Jobbins, 2015; Hapidin et al., 2020; Hendri & Wulandari, 2022; Rahm, 2016; Rolfe, 2011; Selkrig, 2017).

4. CONCLUSION

Museum-based learning has a promising future as it offers an alternative way to foster creativity by providing an adventurous learning experience beyond the classroom. The museum can provide learning situations where narratives and dialogues occur between visitors-collections, visitors-peers, visitors-educators, and also visitors themselves who reflected in inner/intrapersonal communications. This embodiment dialogue is a central aspect that can ignite one's imaginations, inspirations, and eventually new ideas. However, teachers in Malaysia and Indonesia still have to face several issues including museum exhibitions that are not interesting, misalignment between the needs of the subjects and the curriculum with the content and activities offered by the museum, lack of a supportive policy, lack of supportive infrastructures, and interpersonal dilemmas. These give rise to some important considerations about the need to develop museum creative programmes that are interactive and experiential; integrate arts and technologies; creatively arrange the learning strategies that match the contents of museum and schools' curriculum targets; propose a curriculum review that values learning beyond the classroom; provide the enough and appropriate supporting infrastructures; and empower teachers with sufficient time management and partnership with other parties including museum educators. This should be taken into consideration for teachers, schools, museum management, museum educators, and educational policymakers to provide museums with creative spaces, which support creative pedagogy implementations.

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