The development of risk management elements (APR) for Forest-Friendly Pedagogy (PeRIMBA) as a guide for indigenous school teacher

M N Haron1,*, N B A Wahab2, R Kasim1, N Abdullah2 & N M Bohari3.

1Universiti Tun Hussein Onn Malaysia, 86400 Batu Pahat, Johor, Malaysia
2Teacher Education Institute (TEI), Temenggong Ibrahim Campus, 80350 Johor Bahru, Johor, Malaysia
3Universiti Teknologi Malaysia, 81310 Skudai Johor, Malaysia

*Corresponding author: nurbahiyahwahab@gmail.com

Abstract. The Forest-friendly pedagogy (PeRIMBA) refers to the implementation of outdoor learning session by using forest elements as the learning aid and site. In promoting meaningful learning especially to the indigenous school, PeRIMBA’s introduces a risk-taking approach that will offer the opportunities for teachers and pupils to engage in risky activities during learning session. The input on risk and risk perception will be an added value to teachers to implement PeRIMBA in their teaching and learning sessions. However, PeRIMBA’s needs further research and study especially in the field of risk. These concepts then lead to risk perception that, in turn, influenced risk management. The purpose of this study is to identify risk management element for forest-friendly pedagogy (PeRIMBA) at Indigenous School. To achieve this goal, this study is conducted qualitative in the form of analysis document. A few of previous document, survey report, conference proceeding, and journal had been referred as literature study, and analysed with data gathered use schedule matric. The finding shows that there are three elements which are risk identification, risk assessment and risk control.

Keywords. forest-friendly pedagogy, risk taking, risk management, indigenous and qualitative.

1. Introduction
Today the biodiversity of the country is facing various crises that pose a great threat and contribute to its decline and loss. In such circumstances, there are many elements that contribute to the destruction of this priceless treasure whether it is a direct element or an indirect element. Among the settlement measures used by some institutions, government agencies and non-governmental organizations (NGOs) is to obtain information and help from the indigenous community on action plans or biodiversity surveys in their areas. This proves that the indigenous community also plays a role as a fortress of biodiversity conservation. To ensure that this role can be carried out properly, education for the indigenous community needs to be addressed. Education not only plays a role in making the community aware of the benefits of biodiversity but education can also raise awareness of the threat to the environment and habitat loss for life [1].

Education for the indigenous community has its own challenges including the issue of dropouts in education. This dropout phenomenon causes them to continue to be and live in rural areas because
they are lagging behind in terms of economic, political and social [2]. Several studies conducted by scholars who focus on this community found that among the factors that contribute to this problem are the school curriculum and teaching approaches that are less appropriate to the culture of the indigenous community [3-6]. In addition, indigenous children are familiar with the traditional socialization process that causes them difficult to adapt to the school system.

Therefore, to encourage the interest of the indigenous community in Malaysia, especially children to participate in education, the Ministry of Education Malaysia (MOE) has undertaken several efforts under Initiative # 57: Transformation of Orang Asli and Natives Education which emphasizes i) equality of educational access in line with mainstream education and ii) improving the teaching and learning (T&L) approach. Improving T&L approach requires a change in a fresher, more practical and up-to-date pedagogy to attract the interests and tendencies of indigenous pupils. MOE has launched the Natives and Indigenous Education Transformation Handbook which also known as Buku Panduan Transformasi Pendidikan Orang Asli Dan Peribumi [7] which provides guidelines for the implementation of special intervention programs in indigenous school in Malaysia, namely:
  i) the delivery of a more flexible (flexible classroom).
  ii) the fun learning (didik hibur) approach that encourages the application of forest-friendly elements.
  iii) pupils are actively involved in learning and facilitation
  iv) learning using cultural arts skills

This means that teachers at indigenous schools need to be flexible in determining the learning environment according to the suitability of the school environment and not just concentrated in the classroom and as prove that indigenous pupils need outdoor learning approach (ODL) [8]. One form of ODL that is gaining ground in Malaysia is forest-friendly pedagogy (PeRIMBA). PeRIMBA offers opportunities for indigenous pupils to gain experience and knowledge through activities conducted natural environment. PeRIMBA seems to be more synonymous with the living style and culture of indigenous communities [8] who adopt a rugged lifestyle and always move for survival (Nordin & Ahmad, 2015).

2. Background of the study
Between 2007 until 2017, a total of 22 cases of deaths were recorded involving school children during school activities. These statistics undoubtedly raise concerns among teachers at indigenous school to implement PeRIMBA. Although no injuries or deaths were reported during the implementation of PeRIMBA, it did have a probability of causing serious accidents or deaths. Teachers' concerns about the safety of pupils who are exposed to various forms of risk while implementing PeRIMBA have close the spot for teachers not to use this approach and continuing to carry out traditional learning [5]. This statement is supported by Harris [9] who stated that risks can invite danger during the implementation of PeRIMBA. He also stated that the participation in PeRIMBA activities causes participants to have the potential to get injured and experience fear and uneasiness.

Jacoby, Kaplan & Szybillo [10] mentioned that risk can be present in 5 dimensions namely financial, performance, physical, psychological and social. According to them, psychological and social risk is usually combined and considered as psychosocial risk. While risk often means a combination of probability and frequency of some potential hazards while the severity of these risks can change from a minimum to a maximum or vice versa. Based on the literature review there are two forms of risk that can be associated in the implementation of PeRIMBA which are:

i) Physical risk: This risk includes any hazards affecting the limbs. These risks can be measured from the level of risk of small hazards (small wounds) to serious risks (fractures) that may be temporary or permanent in the body. This risk can also occur if mismanaging equipment or weather factors that affect the environment. This risk can occur immediately or delayed.
ii) Psychological risk: Participants may experience emotional discomfort such as negative perceptions of themselves (fear, embarrassment).

Therefore, human resource development programs among indigenous school teachers related to the need for training in acquiring knowledge on risk management are needed in order to ensure the safety of indigenous pupils against accident risk. Hence, the main objective of this study was to develop risk management elements for PeRIMBA as a guide for indigenous school teachers. Here the research question arises is 'What is the risk management elements for PeRIMBA as a guide for indigenous school teachers?'

2.1. Forest-friendly pedagogy (PeRIMBA)
For the exploration of PeRIMBA constructs, the findings of several scholars have been taken into account. Through PeRIMBA teachers will be more creative in the implementation of teaching and learning [8]. Teachers play a role as facilitators by providing guidance for pupils to perform the tasks through discussion, demonstration and evaluation. The outdoor environment of the classroom should:

i) provide many opportunities for children to take risks as far as is acceptable under safe and well-supervised conditions;

ii) offer challenging situations for children consistent with their level of development and interest;

iii) has a variety of materials and space for children to use in all types of games; and

iv) include manipulative materials and provide options for children to move parts of the material.

Storli and Hansen Sandsetter [12] in their study showed that by doing risky physical activities teachers and pupils will learn how to identify risks, assess risks and how to adapt to risky situations and make decisions. This wary attitude is able to balance the presence of risks during physical activities carried out in the natural environment. Realizing the presence of these risks, there will be awareness among them on how to protect themselves and others. In the context of PeRIMBA [5], the selection of location, source of teaching materials and activities should consider the safety aspects because it gives confidence to the participants that the activities carried out are secure. Research on safety aspects may help teachers to protect the safety of pupils from the dangers posed by human activities, the environment and equipment. Hazards in the implementation of PeRIMBA activities are the cause of accidents that cause physical risk (injury) and psychosocial risk (emotional discomfort).

Based on the literature review, previous researchers have covered many issues related to security concerns in the implementation of PeRIMBA. This proves that the elements of the psychosocial environment involving humans and the elements of the physical environment involving the environment and equipment are things that are often discussed by PeRIMBA practitioners.

3. Methods
In order to identify the elements, a qualitative exploratory study was conducted by using documents and literature analysis. Documents and literature analysis can be considered as the most suitable method in order to collect information in a qualitative study [13]. Once the data being collected, it will lead to address research problem and answer research questions. In this study, documents and literature analysis were then analysed by using systematic data analyses. This would involve the process of summering, synthesising and using the information to explore the elements [14&15]. The end products for systematic data analyses do vary and will cross between elements.
4. Results

4.1 Finding of Documents Analysis
Finding as indicated in Table 1 is based on documents analysis. The documents that involved were are Safety Policy and Guidelines or also known as Surat Pekeliling Ikhtisas (SPI) No.8/Year 2009, SPI No.8/ Year 2011, International Organization for Standardization (ISO), Malaysia Education Blueprint 2013-2025 and SPI No.9/Year 2016.

Table 1. APR PeRIMBA based on documents analysis.

| No. | Publisher/Elements | Risk Occurence | Risk Identification | Risk Analysis | Risk Evaluation | Risk Control | Risk Treatment |
|-----|--------------------|----------------|---------------------|--------------|----------------|--------------|---------------|
| 1.  | Ministry of Education SPI No.8/ Year 2009 | / | / | / | |
| 2.  | Ministry of Education SPI No.8/ Year 2011 | / | / | / | |
| 3.  | International Organization for Standardization ISO 31000 (2018) | / | / | / | / |
| 4.  | Malaysia Education Blueprint 2013-2025 | / | | | / |
| 5.  | Ministry of Education SPI No.9/Year 2016 | / | | | |

Based on the documents analysis above, the compilation keys elements in APR PeRIMBA are risk occurrence, risk identification, risk analysis, risk evaluation, risk control and risk treatment.

4.2 Finding of Literature Analysis
Finding as indicated in Table 2 is based on literature analysis. Some of the study consulted were [16-21].

Table 2. APR PeRIMBA based on documents analysis.

| No. | Scholars/Elements | Risk Identification | Risk Evaluation | Risk Control |
|-----|-------------------|---------------------|-----------------|--------------|
| 1.  | Parkin & Blades (1998) | / | / | / |
| 2.  | Maynard (2007) | / | | / |
| 3.  | Connolly & Haughton (2015) | / | / | / |
| 4.  | Brussoni et.al. (2015) | / | | / |
| 5.  | Harris (2017) | / | / | / |
| 6.  | Coates & Wilson (2018) | | | / |
| 7.  | Waite & Goodenough (2018) | | | / |
Based on the literature analysis above, the study has compiled a list of key elements that are frequently mentioned by scholars. The elements are, risk identification, risk evaluation and risk control.

5. Discussion

In order to explore risk management elements for PeRIMBA, the study was carried out through two approaches namely documents and literature reviews. The documents and literature analyzed were involved teachers’ standard, guide books, book, education policies and articles in journal. Among the documents and related studies were conducted by Ministry of Education, International Organization for Standardization, and findings from some scholars such as Parkin & Blades, Maynard, Connolly and Haughton, Brussoni, Coates and Pimlott-Wilson and Waite and Goodenough. The findings found the elements for risk management of PeRIMBA (known as APR PeRIMBA) were risk occurrence, risk identification, risk analysis, risk evaluation, risk control and risk treatment. These elements are the key elements that are frequently found in documents and literature analysis. Nevertheless, the triangulation of the two resources (documents analysis and literature analysis) indicated that the converged key elements in this study were risk identification, risk evaluation and risk control as shown in Figure 1.

![Figure 1. The elements of APR PeRIMBA](image)

Risk identification involves the identification of hazards that may pose a risk to pupils. There are three factors that influence risk assessment, namely man, teaching tools and the environment. These factors need to be controlled to encourage pupils to explore and play in the natural environment. Here the teacher serves as a facilitator who needs to supervise the movement of pupils through mitigation control. This Risk Management is actually an added value for the implementation of PeRIMBA in indigenous schools. When the risk can be managed well, the implementation of PeRIMBA will occur well and effectively because teachers are more confident and worries in its implementation can be avoided. The need for the implementation of PeRIMBA which makes it different from other schools is when two main components are taking into account, which is PeRIMBA meets the needs of indigenous pupils and in line with the Malaysian education curriculum.

6. Conclusion

This study investigated the APR PeRIMBA elements that will promote and improve indigenous school teacher to implement PeRIMBA. The right teaching approaches will acted as a ‘right dose to the right patients’ because it able to fulfil the needs and requirement of the indigenous pupils. In this study, APR PeRIMBA elements that were developed based on documents analysis and literature analysis. There were six elements frequently mentioned in this study which are risk occurrence, risk identification, risk analysis, risk evaluation and risk control and risk treatment. However, based on the
findings, it can be concluded that risk identification, risk evaluation and risk control acted as the critical elements of APR PeRIMBA. It is hoped by implementation of pedagogy (PeRIMBA) that coincides with indigenous pupils’ need will have a future impact to improve the indigenous communities in order to conserve biodiversities wisely.

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