Managing the Unseen: Human Insight and Risk Practices in Malaysian Co-Curricular Programs

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ABSTRACT

In Malaysian educational institutions, participation in co-curricular activities isn't optional, it's an established part of the system. These activities, which include uniformed groups, clubs, and various associations, are designed to promote learning beyond traditional classroom settings. Yet, with all these opportunities, there are inherent risks: injuries, loss of property, unexpected accidents. This reality underscores the importance of effective risk management, especially within the Teacher Education Institute of Malaysia (TEIM). Hence, this study focuses on how key stakeholders like trainers, participants, support staff, service providers, and external agencies to address and manage these risks when overseeing co-curricular activities. The researchers employed the Fuzzy-Delphi method, gathering consensus from 30 experts via online questionnaires. The findings indicate strong agreement among these experts that human-related factors significantly influence the success of co-curricular programs. As a result, the study recommends increased attention to these human elements, recognizing their direct impact on participants' well-being and overall program outcomes.

Keywords: Risk Management, TEIM, Co-curricular activities, Fuzzy Delphi

INTRODUCTION

Over the past several decades, co-curricular activities have developed to become an important aspect of education in Malaysia. Outside the classroom, students are involved in sports, uniformed services, school clubs, outdoor education and leadership programs, all designed to develop character, teamwork and practical skills. Yet as these roles have diversified and become more complex, the risk of violence, and physical, psychological and logistical harm has increased. Although there are regulatory guidelines like Surat Pekeliling Ikhtisas 9/2000 di Malaysia which define the frameworks for safety, co-curricular involvement is dynamic and uncertain and requires more than a compliance to procedure.

When it comes to risk management in co-curricular settings, the conversation usually gets bogged down in administrative procedures forms, approval chains, and checklists galore, as if bureaucracy alone keeps everyone safe. But, honestly, that's just the tip of the iceberg. The real substance lies in the human element: educators' experience, facilitators' judgment, and even students' instincts. These aren't just nice-to-haves they're essential. Intuition, personal perception of risk, ethical reasoning, all of these shape how risks are recognized, interpreted, and addressed in real time. In practice, those split-second decisions and gut feelings often do far more to keep things on track than any pile of paperwork ever could.

It's surprising how the human aspect of risk management in Malaysian education barely gets any spotlight in the research. Think about it, when teachers are leading students on a jungle trek, how do they actually figure out what level of risk is "acceptable"? And when the weather suddenly takes a turn, what kind of ethical standards shape their choices in those tense moments? Plus, what kinds of support do teachers actually have when making these real-time decisions? There's clearly a gap here that deserves more attention in the literature.

This study sets out to uncover the less visible aspects of risk practice by gathering firsthand perspectives from those directly involved in co-curricular activities across Malaysian educational institutions. Instead of relying solely on abstract frameworks, the research draws from the lived experiences of trainers, participants, support staff, service providers, and external agencies to understand how risk is perceived and managed in real-world settings. Human factors like instincts, decision-making quirks, even the occasional misjudgement have a huge influence on how risks are assessed and responded to, especially in the fast-changing context of co-curricular programs [23]. By focusing on these human dimensions, the study aims to highlight why understanding individual and collective behaviour is so critical for effective risk assessment. After all, the success of any risk management strategy depends not just on policies or checklists, but on how people interpret and act on them in the moment [3].

LITERATURE REVIEW

In Malaysia, the term “co-curriculum” refers to what’s commonly known as extracurricular activities—such as clubs, sports, and various student organizations. This concept isn’t exactly new; its roots trace back to the Education Act of 1956, which formally recognized these activities under the Regulation of School Study Courses. During the 1960s, co-curricular activities were intentionally separated from the academic curriculum, positioning them as complementary elements in the broader context of student development and the educational process [1].

Over time, there has been a growing recognition of the critical role co-curricular activities play in holistic education. Contemporary educational planning in Malaysia consistently prioritizes these activities, reflecting an understanding that learning extends beyond traditional classroom instruction. The current framework for implementing co-curricular programs at the school level draws from foundational policies and recommendations, including the Cabinet Report of 1979, the National Education Philosophy of 1988, and the Education (School Association) Regulations of 1998. Collectively, these directives emphasize that participation in co-curricular activities is essential for all students, regardless of their educational stage.

Co-curriculum activities at TEIM are a curriculum designed for trainee teachers' learning to strengthen the construction of identity, leadership, teamwork, socialization, and professionalism of teachers through authentic activities outside the classroom to apply soft skills [17]. Four (4) components of co-curricular activities, namely the uniformed unit, teacher character building, athletics and games involving camping activities, jungle tracking, life endeavors, confidence in the water, kayaking, flying fox/abseiling, and community and school services that need to be carried out off campus and exposed to the risk of loss, injury and accident. At TEIM, co-curricular activities are designed to produce knowledgeable, proactive, resilient, competitive, and have values and professional teacher's attitudes that are compatible with local values that emphasize the formation of identity, leadership, teamwork, and social skills through experiences that authentic, holistic, and contextual. The participation of trainee teachers in co-curricular activities is a space to gain knowledge and practice theory and concepts more meaningful and holistic way as a preparation for becoming a dedicated teacher.

Risk is the possibility of unwanted events occurring during implementation of activities or programs like exposure to dangerous situations, losses, injuries, and accidents that affect the goals [5],[29] of an organization or program. In planning and implementing activities, the organizers must be more careful to minimize risk. Knowledge and experience are needed to analyze the types of accidents that may occur before a program is organized by preparing a checklist and identifying the factors that cause accidents or injuries in each activity. So, the organizers can choose to take risks or avoid risks by not continuing high-risk activities.

Risk management is a systematic process of identifying risk exposures and taking action to minimize negative impacts [9] in organizing activities. [29], stated four risk management practice plans: (i) identify loss exposure, (ii) measure and analyze loss exposure, (iii) choose the appropriate combination to treat loss exposure, and (iv)

implement and monitor the management program risk. These four risk management practice plans are predictive in smoothing the process to achieve the objectives of the activity, program, or organization.

The study published by [27], teachers' practices regarding risk and safety management (RSM) in Norwegian PE perspectives practice is drawn as it is reported to be even more frequently integrated in the teaching of PE classes (M = 4.96, SD = 1.444). Teachers employ various strategies for RSM, including implementing safety procedures, following compulsory risk measures, using common sense and discretion based on experience.

METHODOLOGY

This study aims to produce an instrument for effective co-curricular activity risk management (CoARM) that applies the Fuzzy Delphi method combination of traditional Delphi and Fuzzy numbering sets. The Fuzzy Delphi method aims to obtain expert consensus to determine the elements and sub-elements that act as respondents based on quantitative methods. According to [24], Fuzzy Delphi method used to obtain expert agreement on a problem. The use of the Fuzzy Delphi method can save cost and time in the construction of the questionnaire. This method is a form of research that involves the views of a group of experts in the field being studied and usually involves several rounds to produce a consensus on the findings of the study. A modification of the original Delphi method combines Fuzzy analysis that is simpler but maintains its validity from the expert panel's views [31].

Questionnaire For Experts

The questionnaire was constructed based on the analysis of expert interviews conducted to obtain suggestions for questionnaire items and aligned with information from the literature review in co-curricular risk management and the implementation of co-curricular and outdoor activities. The questionnaire elements and items development can be done based on literature review, interviews, pilot studies, and experience [33] and should be done within the scope of a study [7]. The expert agreement was obtained in this study using a questionnaire constructed through interviews with two (2) University Center of Co-Curriculum Directors and four (4) Heads of Co-Curriculum Unit in TIEM involved in planning and implementing extra-curricular courses/activities. Suggested improvements by the expert contrived and produced a questionnaire that has face and content validity for the appropriateness of the questions.

Fuzzy Delphi studies require a minimum of 10 sample people to obtain high uniformity among experts [2]. Therefore, this study involves 30 experts in the field of co-curricular activities from public universities and teacher education institutes in Malaysia using purposive sampling involves the selection of respondents from among individuals who meet certain specified conditions, namely (i) are individuals who have a bachelor's degree as academic qualification, a coaching certificate, (ii) have been involved in the extracurricular field for more than ten years and (iii) are willing to give their views and be involved in this study voluntarily. The selection criteria of experts are in line with [7] expert is considered an expert in a field when he has more than five years of working experience, while [14] stated that field experts have high academic qualifications. Experts are selected based on expertise in the same field of expertise were selected from universities (1 person), ministries of education (1 person), and teacher education institutes (28 persons). Experts' specification shows in Table 1 below. For data collection, the questionnaire has been developed in the google form and email.

TABLE I Expert specification

Institution	Position	Number
University	Dean	1
Ministry Of Education Malaysia	Asistant Director	1

TEIM Campus	Head of Co-Curriculum Unit	27
	Senior Lecturer	1
Total		30

The Table 1 document provides a concise overview of the staffing positions and quantities across various institutions, including a university, the Ministry of Education Malaysia, and TEIM Campus. It outlines the roles and the number of individuals occupying each position, offering a snapshot of the organizational structure and staffing levels within these entities

The questionnaire content validation agreement by the experts assessed uses the Likert scale from 1 (Strongly Disagree) to 5 (Strongly Agree) as shown in Table 2.

TABLE II Item-agreement indicators

Agreement	**Fuzzy Scale**	**Likert Scale**
Strongy disagree	0.0, 0.0, 0.2	1
Disagree	0.0, 0.2, 0.4	2
Less Agree	0.2, 0.4, 0.6	3
Agree	0.4, 0.6, 0.8	4
Strongly Agree	0.6, 0.8, 1.0	5

Source: Yaakub et al., 2020

The questionnaire divided into two sections, namely Part A: Demographics and Part B: Questions Item. Part B contains 3 Constructs and 15 elements. The first construct is human (19 items).

Data Analysis

The feedback from a group of selected experts, threshold value, (d), measure expert consensus was based on three conditions are calculated using the following formula:

$$d(\tilde{m},\tilde{n}) = \sqrt{\frac{1}{3}\left[(m_1 - n_1)^2 + (m_2 - n_2)^2 + (m_3 - n_3)^2\right]}$$

First, the d value must be equal to or less than 0.2 [10], and second, the group agreement percentage is greater than 75% [11]. Third, according to [34], the average of the Fuzzy number which is the A value must exceed 0.5 using the formula A = 1/3 x (m1+m2+m3). For that, the items are accepted if all requirements were achieved.

In this process, the determination of the second condition is done where determining the percentage value of the expert agreement is executed. The second condition that needs to be observed is that the percentage of experts' agreement must be equal to or greater than 75.0% [11]. Table 4 shows the percentage of specialist agreements for the four (4) items studied using the agreement of 30 experts in the study. Percentages show Item 1, Item 2, Item 3 and Item 4 reach an agreement of experts exceeding 75.0%, then this item is accepted. The data analysis used average of fuzzy numbers or average response (Defuzzification Process). In this analysis, it is aimed to get the score of fuzzy score (A). To ensure the third condition is followed, the value of the fuzzy score (A) must be greater than or equal to the median value (α - cut value) of 0.5 [8],[35]. This indicates that the element is accepted by an expert agreement. Among other functions, the value of fuzzy scores

(A) can be used as a determinant and a priority for an element according to experts' opinions. The formula involved in getting the score of fuzzy (A) is as follows:

A = (1/3) * (m1 + m2 + m3)

FINDING AND DISCUSSION

The findings showed first construct is human (20 items) comply the 1st Condition *d* Value Threshold (<0.2) average value is 0.097, 2nd Condition expert agreement (> 75%) is 85.6 % and 3rd Condition ITEMs (a - cut value THRESHOLD >0.5) is 0.748 and all the items comply the 1st Condition *d* Value Threshold (<0.2) average value is 0.097, 2nd Condition expert agreement (> 75%) is 85.6 % and 3rd Condition ITEMs (a - cut value THRESHOLD >0.5) is 0.748 and no items was removed as shows in Table 3.

TABLE III Summary of Fuzzy Delphi Findings for Human Construct

CONSTRUCT	**NO. ITEM**	**1st Condition *d* Value Threshold(<0.2)**	**2nd Condition expert agreement (> 75%)**	**3rd Condition ITEMs (a - cut value THRESHOLD >0.5)**	**Item Removed**
HUMAN					
Trainers	4	0.059	91	0.778	NILL
Participants	4	0.081	85	0.768	NILL
Support staff	5	0.127	83	0.692	NILL
Service providers	3	0.115	89	0.749	NILL
External agencies	4	0.105	80	0.757	NILL
TOTAL	20				

Generally, it shows that all the experts were agreed that human factors is one of the important in risk management for co-curriculum activities. Human factors contribute to implications of risk in co-curriculum activities, so that experienced and knowledgeable staff is needed to minimize the risk of an accident [18].

DISSCUSSION AND CONCLUSION

In the context of risk management for outdoor co-curricular activities in schools, the human factor is one of the most critical aspects that must be taken seriously. This factor encompasses participants, trainers, support staff, service providers, and group dynamics. Participants who lack risk awareness, have insufficient skills, or display overconfidence can significantly increase the likelihood of accidents. Research by [32] has shown that most incidents in outdoor activities result from a combination of interrelated human errors, rather than isolated mistakes. Trainers and support staff also play a crucial role in ensuring safety. Those who lack technical expertise, have poor risk assessment capabilities, or are unable to handle pressure may make errors that compromise the safety of the entire group. According to [36], structured training in technical skills, communication, crisis management, and regular audits of staff competence are essential for maintaining high safety standards.

Furthermore, external service providers such as outdoor activity operators have a direct influence on risk levels. If their equipment is poorly maintained, facilities fail to meet safety standards, or their staff are underqualified, the risk of injury increases. A study conducted in Perak, Malaysia, found that risk management practices for co-curricular activities were at a moderate to low level, especially in aspects such as maintenance and safety documentation [30]. Group dynamics and communication among participants also play a vital role. Groups that lack cohesion, show poor cooperation, and have unclear roles may experience communication breakdowns, leading to lapses in safety procedures or equipment handling.

Research in Norway [27] reported the importance of understanding teachers' best practices and the contextual factors shaping teachers' Risk Safety Management (RSM) practices are complex, often intuitive, and shaped by experience, pedagogical beliefs, and external regulations. RSM practices often rely on teachers' experience and discretion rather than formal, standardized procedures. Teachers tend to view safety measures as part of their pedagogical approach rather than explicit risk management. is essential for developing effective safety policies that do not overly constrain pedagogical innovation.

As such, a human-centered approach to risk management is necessary. This includes educating and training participants, actively involving them in the risk assessment process, and applying systematic techniques such as the Human Error Assessment and Reduction Technique (HEART) to identify potential sources of human error. A comprehensive strategy should also involve fostering a safety culture through continuous communication and periodic evaluation of all personnel involved. In conclusion, while human factors are a major contributor to risk, they are also the key to reducing incidents and ensuring that outdoor co-curricular activities are conducted in a safe and effective manner.

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