International Journal of Advanced Research in Education and Society
e-ISSN: 2682-8138 | Vol. 7, No. 1, 410-418, 2025
https://asianscholarsnetwork.com/asnet-journals

The Usability of the Healthy Lifestyle Module for the Co-Curriculum Course in the Matriculation Program

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Received: 7 January 2025 | Accepted: 15 February 2025 | Published: 15 March 2025

DOI: https://doi.org/10.55057/ijares.2025.7.1.39

Abstract: *This study aims to evaluate the usability and effectiveness of the Healthy Lifestyle Module (MoGHS) as a teaching aid in co-curricular courses of the matriculation program in Malaysia. This study uses a one-shot study evaluation method involving 18 lecturers and 127 students as respondents, where the usability of the module is assessed based on three main constructs: usefulness, satisfaction, and ease of use. The usability questionnaire adapted from the USE model was tested for content validity and reliability through excellent Cronbach's Alpha values (α > 0.9). The results of the study showed that lecturers gave high scores on the usability of MoGHS, with an overall mean score of usefulness of 4.90 (SD = 0.266), satisfaction of 4.94 (SD = 0.207), and ease of use of 4.92 (SD = 0.243). Further analysis of the three learning domains – cognitive, affective, and psychomotor – found positive improvements in the cognitive and affective domains, while the psychomotor domain required further improvement. MoGHS can serve as a tool to show educators that the idea of a healthy lifestyle can be made clear, and it serves to meet educators' needs to conduct quality and efficient teaching. MoGHS is a practical educational tool that can be used as a contribution to the holistic education of Malaysian National Education Philosophy. The psychomotor component requires improvement so that the effectiveness of the next generation of this module can be strengthened.*

Keywords: Usability, Healthy Lifestyle Module, Cognitive, Affective, Psychomotor, Co-Curriculum Courses Matriculation

1. Introduction

The expanding health challenges in students' lifestyles, such as lack of physical activities, inadequate stress management and poor nutrition, necessitate targeted educational themes. There is, moreover, a close relationship between these challenges and elevated risk of chronic diseases and mental health disorders, which are all essential components of student development (Pascoe et al., 2020; Kassymova et al., 2023). Research has shown that effective stress management programs in tandem with physical activities and nutritional education all contribute to significantly increased physical and mental well-being of students (Shi et al., 2022; Essa et al., 2021). In response, the Development of a Healthy Lifestyle Module (MoGHS) seeks to fill a critical need by providing holistic learning outcomes through an integration of lifestyle education into the curriculum for matriculating students. This module aligns with Malaysian National Education Philosophy that supports the development of a balanced individual in intellectual, emotional, spiritual and physical aspects and hence focuses

on practical ways of fitness, stress management and healthy eating. The integration of this health skill into the nation's efforts to advance health and productivity contributes (Andonova, 2020; Hsu & Goldsmith, 2021) while empowering students with essential life skills. Apart from being a pedagogical tool, MoGHS becomes a tool for individual growth and healthy lifestyle awareness. In addressing these pressing lifestyle challenges, the module offers a route to enable improved physical and mental health for students leading to improved academic success and long-term quality of life (Essa et al., 2021).

Objectives

The purpose of this research was to assess the usability and effectiveness of the GHS topic Teaching and Learning Module for Schools Matriculation Co-Curriculum Course.

2. Methodology

In the evaluation phase, the researcher conducted a one-shot study test to see the effectiveness of MoGHS. This test was conducted by conducting a single test against the module objectives. In this study, the researcher conducted a module evaluation on 18 lecturers according to the established sample selection method consisting of 3 zones, namely the northern zone, central zone and southern zone. Before the module was distributed to the lecturers, the researcher distributed an agreement form. The purpose of this agreement form given to the sample (lecturer) was so that the lecturers would not distribute and show the module used to others. After 3 weeks, the results of the test could determine whether or not the MoGHS was effective or not used by the lecturers on the students in their classes to achieve the module objectives. Next, to see the usability of MoGHS, the researcher distributed a questionnaire to the same 18 sample people who had used the module for three weeks. The purpose of the usability questionnaire given to them by the researcher was to see their views on the use of the module. Meanwhile, the number of students was 217, consisting of 87 male students and 135 female students, consisting of students involved in the study sample class (lecturer).

3. Results

Teacher Usability Assessment Questionnaire

The component of user experience (CUE) model will be used as a guide and the questionnaire was adapted from the Syar (2021) study which developed a usability questionnaire, namely USE (Usefulness, Satisfaction, Ease of Use) to produce a product. Therefore, the adapted questionnaire was modified by the researcher to adapt to the study. After the modifications were made, the researcher selected four experts consisting of Malay language experts, physical education experts, co-curricular experts and quantitative experts to obtain face validity and content validity of the adapted questionnaire. The results obtained from the expert review found that all experts agreed that the usability questionnaire could be distributed to lecturers using this module. The results of the pilot study showed that the Crocbach Alpha (reliability) value for the entire construct for 20 items. This shows that the Crocbach Alpha interpretation for the entire construct in the usability analysis questionnaire in phase three is at an excellent level. Table 1 shows a summary of the Apha coefficient values for the questionnaires that were constructed and piloted.

Table 1: Cronbach's Alpha value of the usability questionnaire for each construct

Construct	Number of items	Cronbach's alpha val	Internal persistence
Lecturers' views on the usefulness of MoGHS	10	0.978	excellent
Lecturers' views on the satisfaction of MoGHS	6	0.973	excellent
Lecturers' views on the ease of use of MoGHS	4	0.885	excellent

N=30

The results of a pilot study of 30 Matriculation College lecturers show that this usability analysis questionnaire can be used to monitor use and provides for actual research.

Evaluation of the Effectiveness of the Module on Students

The results of the pilot study of the module involving 2 lecturers and 30 students showed that the Crocbach Alpha (reliability) value for the overall module assessment on the cognitive, affective and psychomotor domains. This shows that the Crocbach Alpha interpretation for the overall module assessment is at an excellent level. Table 2 shows a summary of the Apha coefficient values for the MoGHS that has been built and has been piloted.

Table 2: Cronbach's Alpha Value of MoGHS

Total items	Cronbach's alpha value	Internal consistency
12	0.941	excellent

N=30

The findings of a pilot study of 30 Matriculation College students found that MoGHS can be used and can be conducted for actual studies.

Data Analysis

The researcher, next, analyzed the module usage questionnaire data using descriptive analysis using Statistical Packages for the Social Sciences (SPSS) version 27.0. Questionnaire data were scored and coded in a written coded questionnaire form. Data from respondent demographics in Part A were used as frequencies and percentages to give information on respondent background (Syar 2021). The researcher analyzed the mean score for parts B, C and D with the mean score interpretation guidelines of Nunnally & Bernstein (1994). Table 3 shows four levels of the Nunnally and Bernstein (1994) proposed mean scores interpreted.

Table 3: Four Levels of Interpretation of Mean Scores

Min score range	Level
1.00 – 2.00	Low
2.01 – 3.00	Medium low
3.01 – 4.00	Medium high
4.01 – 5.00	High

Source: Nunnally dan Bernstein (1994)

Therefore, if the mean score data of the needs analysis questionnaire is in the medium-high and high range for each item, it indicates that the study respondents agree with the construct.

To identify the effectiveness of this module on students, the researcher conducted pre-experimental case studies (one-shot case studies) on students in the lecturer's class who were involved as study participants. One-shot case study designs are widely used in the field of education to determine the effects and changes of dependent and independent variables in

which researchers study the study group only once (Putri & Setiyawati (2023): Mohd Majid, 2000). Based on Norkhalid (2013), Gay, Mills & Airaisan (2009), pre-experimental studies - one-shot case studies involve one study group and are exposed to treatment (X) and post-test (O) in addition to no control being carried out on the study group. The descriptive analysis used is known as univariate analysis to identify mean values, standard deviations, percentages and frequencies (Bulanov et al. 2021); Raganit, A. (2021). The data were analyzed by referring to the mean and standard deviation of the students' mastery level on the use of MoGHS.

Findings from the Module Usability Assessment

This study involved 18 co-curricular lecturers as respondents who had used MoGHS. Table 4 is the findings obtained from 18 lecturers, Matriculation Program.

Table 4: Module usability evaluation findings

		Items	N	Mean score	SD
Usefulness	1.	MoGHS helps me to be more effective.	18	4.94	0.236
	2.	MoGHS makes me more productive.	18	4.83	0.383
	3.	MoGHS is useful for me	18	4.89	0.323
	4.	MoGHS makes it easier for me to teach healthy lifestyle topics.	18	4.83	0.383
	5.	MoGHS makes it easier for me to teach students.	18	4.89	0.323
	6.	MoGHS makes it easier for me to evaluate healthy lifestyle topics.	18	4.94	0.236
	7.	MoGHS makes it easier for me to reference healthy lifestyle topics.	18	4.89	0.323
	8.	MoGHS saves me time in preparing to teach.	18	4.89	0.323
	9.	MoGHS is BBM according to the content of the lesson.	18	4.89	0.323
	10.	MoGHS meets my needs.	18	5.00	0.000
		Overall	18	4.90	0.266
Satisfaction	1.	MoGHS works as I expected.	18	4.94	0.236
	2.	MoGHS pleases me.	18	4.89	0.323
	3.	enjoy using MoGHS.	18	4.89	0.323
	4.	I will recommend MoGHS to my friends.	18	4.94	0.236
	5.	I think it is necessary to have MoGHS.	18	4.94	0.236
	6.	I am satisfied with using MoGHS.	18	5.00	0.000
		Overall	18	4.94	0.207
Ease of Use	1.	MoGHS is easy to use.	18	4.94	0.236
	2.	MoGHS is simple to use.	18	4.94	0.236
	3.	MoGHS is user-friendly.	18	4.94	0.236
	4.	MoGHS is flexible.	18	4.83	0.383
		Overall	18	4.92	0.243

Table 4 shows that the overall assessment of the usefulness of MoGHS is at a high level of agreement with a mean value of 4.90 and a standard deviation of 0.266. It was found that all the items measured recorded a high level of agreement. The highest mean value is shown in item 10, which is mean= 5.00, SD= 0.000, n=18. These findings also prove that MoGHS is useful for co-curricular lecturers for them to make references in order to increase effectiveness, productivity and meet the needs as co-curricular lecturers, Matriculation Programme. Next, the overall satisfaction finding of MoGHS received a high agreement score, which is mean= 4.94,

SD= 0.207, N= 18. The highest mean item finding is item 6, which is mean= 5.00, SD= 0.000, N= 18, which shows that lecturers are satisfied with using MoGHS. Therefore, the overall result of these findings clearly proves that lecturers have high satisfaction with the usefulness of MoGHS. Meanwhile, the overall usability of the module, the lecturers' agreement score value is at a high level, which is mean= 4.92, SD= 0.243, N= 18. The highest mean item findings are items 1, 2 and 3 with mean= 4.94, SD= 0.236, N=18, which shows that MoGHS is easy, simple to use and user-friendly. The overall results of these findings clearly prove that the usability of MoGHS from the aspect of MoGHS usability is high and show that all lecturers agree that MoGHS is easy, simple, friendly and flexible to use. Overall, these findings clearly prove that the usability of MoGHS to lecturers shows that this module meets the usability standards of a product which is based on the three aspects of usefulness, satisfaction and usability (Cen et al. 2023, Nazir & Deris, 2019, Kun 2014). This is because all lecturers gave positive feedback and showed that all three aspects were at the highest mean position. This proves that MoGHS is very suitable to be used as teaching aid by lecturers in teaching healthy lifestyle topics, co-curricular courses.

Findings of the Module Effectiveness Evaluation

This study involved 217 students as a sample who had used MoGHS. Table 5 findings of the effectiveness of MoGHS.

Table 5: Findings of module effectiveness evaluation

Zone	*N*	*M*	*SD*	*F*	Sig.
		Cognitive			
North	68	81.54	6.29	2.683	0.710
Central	87	81.10	4.60		
South	62	79.42	5.75		
		Affective			
North	68	90.41	7.01	1.560	0.213
Central	87	92.07	5.71		
South	62	91.82	5.43		
		Psychomotor			
North	68	42.96	4.46	1.031	0.358
Central	87	46.56	4.17		
South	62	46.56	4.39		

Significant at $p < 0.05$

Table 5 shows student achievement data in three different learning domains, namely cognitive, affective, and psychomotor for the three zones of the Matriculation College. Cognitive domain, the average score for the North, Central, and South zones mean scores are 81.54, 81.10, and 79.42, respectively. This shows that the average achievement of students in cognitive aspects is quite even between the zones, although there are slight differences. However, the difference in standard deviation (SD) indicates different levels of variation in achievement among students in each zone. The results of the analysis found that there is no significant difference for the mean score of the cognitive domain learning level achievement between zones, which is p=0.71. In the Affective domain, the average score is high in all zones, with mean score values ranging from 90.41 to 91.82. This shows that students from all zones show a high level in the affective aspect of learning. Low standard deviations indicate consistency in these ratings across zones. The results of the analysis found that there is no significant difference for the mean score of the affective domain learning level achievement in each zone which is p=0.213. While in the psychomotor domain, the average score is relatively low in all zones, with values

ranging from 42.96 to 46.56. This shows that students face challenges in aspects involving physical fitness. However, the small differences between zones in average scores indicate relative uniformity in achievement across zones. The results of the analysis found that there is no significant difference for the mean score of the psychomotor domain learning level achievement in each zone, which is p=0.358.

4. Discussion

The results of this study indicate that the Healthy Lifestyle Module (MoGHS) achieved high levels of usability among lecturers, as evidenced by consistently high mean scores across three main constructs: usefulness, satisfaction, and ease of use. These findings demonstrate that the MoGHS is an effective and practical teaching tool for implementing healthy lifestyle education in co-curricular courses of the Malaysian matriculation programme. First, positive feedback on the usability aspects of the module indicates that the MoGHS helps facilitate teaching and increase lecturer productivity. With items such as "MoGHS helps me be more effective" (mean = 4.94, SD = 0.236) and "MoGHS is useful for me" (mean = 4.89, SD = 0.323), this finding is in line with previous studies stating that quality teaching resources can improve teaching effectiveness, support curriculum delivery, and facilitate the achievement of learning outcomes (Kabir et al., 2023, Saim et al., 2021).

Second, the mean score (4.94, SD = 0.207) of the lecturers' satisfaction with the use of MoGHS was high. The item 'I am satisfied with using MoGHS' (mean = 5.00, SD = 0.000) indicated that lecturers were satisfied with the user-friendliness and functionally of the module. Menix (2023) stated that educator satisfaction is often tied to usability and how well teaching materials help meet learning objectives. Such modules, that meet educators' expectations, will have the benefit of a higher level of widespread acceptance and use. Third, results for the usability aspect (mean = 4.92, SD = 0.243; N = 31) suggest that MoGHS is easy to use, flexible, and user-friendly. The effectiveness of the module design is evidenced by items such as "MoGHS is easy to use" (mean = 4.94, SD = 0.236). This is related to the findings of Saim et al. (2021) and Phan (2019), that flexible and easily accessible teaching materials are more easily incorporated into the teaching and learning system. Secondly, students' cognitive, affective and psychomotor domains were analyzed to show that this module was an effective factor in providing holistic learning. Results indicated that MoGHS was successful in increasing students' knowledge regarding healthy lifestyles with moderately high cognitive domain scores (79.42 to 81.54). Such studies have proved that structured healthy lifestyle education could enhance cognitive skills and academic understanding (Tiwari et al., 2024; Dorji et al., 2020). The highest scores (90.41 to 92.07) were recorded in an affective domain which might be due to the engagement and positive attitude of students toward learning content. According to previous studies (Aristotle & Ramraj, 2022, Walad et al., 2019), effective affective learning will enhance students' motivation and emotional acquaintance with the subject being taught. Nevertheless, lower scores in the psychomotor domain (42.96 to 46.56) indicate the prevailing low in the physical activity part of this module. Research has proven that there are more interactive practical methods and systematic physical activities that make psychomotor learning more effective (Sari et al., 2020, Nikolic et al., 2023). Taken overall, these findings support the conclusion that MoGHS is a thorough module in cognitive, affective, and psychomotor learning. Not only does this module meet the lecture's need, but it also facilitates the balanced development of students, as befits the National Education Philosophy of Malaysia. To achieve a more pronounced effect on the holistic development of students, improvements in the psychomotor component of this module will be suggested through more structured physical activity.

5. Conclusion

Overall, this study shows that the Healthy Lifestyle Module (MoGHS) can provide healthy lifestyle topics appropriately and conveniently to matriculation program students in Malaysia. The results of the usability study indicated highly useful, highly satisfied, and highly easy-to-use lecturers and a mean score in all the constructs greater than 4.90. This finding reveals that MoGHS contributes to improving teaching effectiveness, facilitating preparation for teaching materials and meeting the needs of the lecturer as a quality of teaching aid. In addition, the positive effects of the module on students' cognitive and affective domains indicate that MoGHS has successfully increased knowledge, understanding, and positive attitudes towards healthy lifestyles. However, the lower score in the psychomotor domain emphasizes the need to further strengthen the physical activity component in this module to ensure that students' holistic development can be fully achieved. The findings of this study also support the Malaysian National Education Philosophy which emphasizes the development of a balanced human being from intellectual, emotional, spiritual, and physical aspects. Through the use of MoGHS, the educational goal of producing healthy and productive individuals can be achieved, in line with the current needs to address the issue of unhealthy lifestyles among the younger generation. Therefore, MoGHS has not only proven to be a practical teaching module but also an important instrument in promoting healthy lifestyle awareness and improving students' quality of life in the long term. Further research is recommended to improve the psychomotor elements of this module and to conduct continuous evaluation of its effectiveness in a broader context.

Acknowledgment
This research would not have been possible without the support and guidance of several individuals and institutions. We express our deepest gratitude to the experts who generously donated their time and knowledge during the validation process, providing invaluable insights that strengthened this study. We would also like to thank the Matriculation Division of the Ministry of Education for their continued support and resources that facilitated the development and implementation of the Healthy Lifestyle Module. Our sincere appreciation goes to our colleagues for their critical review and constructive feedback, which improved the scientific rigor and quality of this research.

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