

Cognitive Domain Achievement Level among Reserve Officers Training Team (PALAPES)

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Abstract

This study was conducted to determine the level of cognitive domain among Reserve Officers Training Team (PALAPES) after underwent three years of training module. 105 PALAPES cadet officers were recruited as participants in this study. Co-curriculum index assessments (IPKo) was used to assess cognitive domain achievement level. Results showed all the cadets are only at the 'good' and 'moderate' level in all given cognitive items; i) Management: 73.3% 'good' and 26.7% 'moderate', mean = 3.73, ii) Safety: 66.7% 'good' and 33.3% 'moderate', mean = 3.67, iii) Regulations: 73.3% 'good' and 26.7% 'moderate', mean = 3.73, iv) Protocol: 82.9% 'good' and 17.1% 'moderate', mean = 3.83. The overall cognitive mean was at a 'good level' of 3.74. Results demonstrate the advantages for the university students to involved in co-curricular activities such as PALAPES in enhancing cognitive ability.

Introduction

Co-curricular is an informal learning activity based on the needs of students having their own educational activities in a real situation (Das, 2016). According to Pascarella & Terenzini, (2005), experiences outside the classroom not only play a crucial role in the development of college students but can also impact academic performance (Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008)

For Universiti Pendidikan Sultan Idris, a co-curriculum course has their own specific goal that are to assist the university to produce skilled, balanced, and harmonious graduates in spiritual, intellectual, emotional, social, and physical aspects in line with the aspiration of the National Education Philosophy (Rahmat, Sharil, Ahmad, Ishak, & Salimin, 2017).

At the institute of higher education in Malaysia, there are several uniformed forces established for co-curricular activities, with the aim to train students to be more disciplined, in accordance with the rules, having a sense of identity and a state of patriotic (Borneo, 2016). To meet the requirements of the Malaysian Armed Forces, apart from producing reserved officers, Reserve Officer Training Team or also known as PALAPES do support the efforts of governments and IPTAs to establish the quality of a perfect, disciplined citizen and have the characteristics of defending the nation's interests (Ghazali, 2015). A cadet officer will be trained within 3 years of 6 semesters on a part-time basis where regular training covering military-related subjects will be held every weekend.

Having actively involve outside the classroom has been found not to only play a crucial role in the development of college students (Pascarella & Terenzini, 2005; Rahmat et al., 2017) but can also impact academic performance (Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008). What the students gain from the participation in the co-curricular activities can be related to their effort put during those activities that perhaps make their selves become more matured and self-survival besides enhance their selves in several domains (Astin, 1984; Astin, 1993; Chickering & Reiser, 1993; Kuh, 2003; Pascarella & Terenzini, 2005).

Students have to go through six semesters or more to complete the co-curricular course of uniformed units held by the university. Nevertheless does it prove to be able to possess all the skills needed for their working world? Among the domain that needs to be acquired by the students is the cognitive. Jean Piaget develops cognitive theories that dominate the view of how children learn over the decades. Piaget (1973) believes that children play an active role in the growth of intelligence and they will learn by doing that knowledge or experience. Piaget considers students as a philosopher. Therefore, most Piaget inspirations in cognitive and intellectual development come from student observations. In this regard, misunderstandings will occur if students lack of knowledge or learning experiences. Thus, investigators extract the essence of this theory that learning involves changing the scheme through accommodation and assimilation processes according to student's ability.

Some of the principles in this cognitive development theory are applied in the development of School Based Assessment Modules for learning assessments. Among them are; (i) students are given the opportunity to study and assess through the assignment experience, (ii) students make decisions in the assessment process after observation and assignment experience, (iii) teachers emphasize the development of student learning as observing, remembering, believing, and reasoning in preparing assignments and assessments.

Throughout the importance of cognitive domain among students, it is the aim of this study to examine the level of cognitive domain achievement by the PALAPES unit in UPSI. The Assessment Index will detect all the skills and knowledge the students underwent during the curricular unit co-curricular course. The results of this index are of great importance to showed the level of necessary skills and knowledge obtained by the students for their future in their job market.

Methodology

Participants

In this study, researchers have selected PALAPES cadet officers who are in semester six (6) as the sample of the study as they have went through all the modules provided by the Ministry of Defence. There were 105 PALAPES cadet officers selected as samples in this study. They have been trained for three (3) years of military training for young staff.

Instrument

Co-curriculum index assessments (IPKo) was used to assess cognitive domain achievement level. Table 1 showed the item in the cognitive domain in the IPKo.

Table 1:

Item in Cognitive Domain in IPKo

No	Item
1	Camping - Management
2	- Safety
3	Teaching - Regulation
4	- Protocol

The criteria used in the Co-curriculum Assessment Index (IPKo) for assessing cadet's cognitive domain are the percentage achievement level. Here is a cognitive level of achievement using the IPKo in the assessment of the training that was followed for six semesters with PALAPES. The level of achievement of student achievement is determined based on scale such as in Table 2.

Table 2.

Level of Achievement

Achievement Level	Criteria Level
5	Excellent
4	Good
3	Moderate
2	Weak
1	Very Weak

Data Collection

A total of eleven (11) coaches from among the officers and members of the lower rank forces have been appointed to assess and implement the instruments. All the participants were assessed in their knowledge of management and safety during the camping activities, and the regulation and protocols in during the teaching activities.

Statistical Analysis

Descriptive statistics were used to obtain participants physical characteristics and mean score. Independent t-test was used to compare the mean score between male and female in the PALAPES unit. All statistical analysis was done by using Statistical Package for the Social Science (SPSS) software, version 23 (IBM, USA).

RESULTS AND DISCUSSION

Demographics Background

This study was conducted on the PALAPES unit in Universiti Pendidikan Sultan Idris which represents the whole unit of uniform in the co-curriculum course. Here's a detail of the demographic background for this study. Table 3 showed the percentage distribution of students by gender. A total of 43 (41%) male cadet and 62 (59%) female cadet were involved in this study.

Table 3.

Percentage distribution of cadets by gender and program followed

Gender	N	(%)
Male	43	41
Female	62	59

How well the Cadet Achievement Stages in Cognitive Domain Using the Co-Curriculum Assessment Index (IPKo).

Table 4 showed the level of cognitive achievement level that was performed by the cadet in the assessment conducted. It was found that the cadets are only at the 'good' and 'moderate' level in all given cognitive items. At least 66.7% of cadets are at 'good' level and 33.3% of cadets are at 'moderate' level with mean 3.67 for safety cognitive items. Besides that, the protocol items showed the highest percentage of 82.9% cadets at 'good' level and 17.1% cadets are at 'moderate' level with mean value 3.83. The overall cognitive mean was at a 'good level' of 3.74.

Table 4.

Level of Cadet Achievement in Cognitive Assessment

Cognitive Achievement Item (Understanding)	Achievement Level		Mean
	Good N (%)	Moderate N (%)	
1. Management	77 (73.3%)	28 (26.7%)	3.73
2. Safety	70 (66.7%)	35 (33.3%)	3.67
3. Regulations	77 (73.3%)	28 (26.7%)	3.73
4. Protocol	87 (82.9%)	18 (17.1%)	3.83
Total (mean)			3.74

Table 5 showed the differences in cognitive domains between male cadet and female cadet following the PALAPES training. Analysis showed that the value of $t(103) = 0.08$, $p = 0.93$ is insignificant. There was no significant difference in the mean score of cognitive level between male and female cadet ($M = 3.74$, $SD = 0.197$), with male students ($M = 3.74$, $SD = 0.211$). The conclusion is that there is no difference in the achievement of understanding between male and female cadets who have achieved good levels of IPKo for 6 semesters (3 years) training.

Table 5.

Mean Differences of Cadet Cognitive Domain Achievement using IPKo between Sex.

Gender	N	Mean	SD	F	Sig.	t	df	Sig. (2-tailed)
Male	43	3.74	0.211	0.028	0.867	0.088	103	0.930
Female	62	3.74	0.197			0.087	8.645	0.931

In this study, researchers are discussing the level of cadet achievement after 3 years of training in the cadet understanding of training activities. Cognitive core level analysis uses IPKo based on the rubric formed through the Co-curriculum. For cognitive core levelling, researchers use the Krathwohl taxonomy to aid in cognitive domination of five co-curricular students. The findings showed that students have mastered the learning outcomes or experience of the PALAPES training that have been followed in the co-curriculum course, where none are at scale 1 to scale 3. The cadets are only at good and moderate levels in all cognitive items that were provided. This support the notion that it is many advantages for the university students to involved in co-curricular activities such as PALAPES and many more uniformed units (Tugong, 2016; Ghazali, 2015; Said, 2015; Jagak, 2016).

Findings of this study demonstrated the effectiveness of involving in co-curricular activities or to be more specific PALAPES unit. This finding was in line as what have been found in several previous studies (Zacherman & Foubert, 2014; Rahmat el al., 2017; Ridza & Muda, 2014). The effectiveness of the co-curricular activities in enhancing cognitive value that were found in this study showed the importance of university students to get involved actively in their uniformed unit or any other associations or clubs. However, it is important to note that previous study had found that students with athletic scholarships that actively involved in athletics correlates with a lower grade point average (GPA) (Miller & Kerr, 2002). Others have suggested that after a certain number of hours per week of participation in student activities, there is a decline in GPA (Kuh et al., 2008; Pike, Kuh, & MassMcKinley, 2008). The contrast in findings suggested a need for the future studies to be deeply explored the effects of active involvement in co-curricular activities on the performance at the classroom especially to the theory based class.

Conclusion

This assessment index facilitates instructors or coaches to evaluate students each time a teaching and learning process involves theories and practices in which students will be judged based on the achievements presented during the course. The Assessment Index is more holistic and able to evaluate the students as a whole because cognitive domain in this assessment model was in line with the aspiration of the National Education Philosophy.

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