

## SCHOOL BASED ASSESSMENT MODULE FOR INVASION GAMES CATEGORY IN PHYSICAL EDUCATION

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### ABSTRACT

This study identify the level of basic skills of invasion games category when using School Based Assessment Module. The assessment of invasion games category was divided into two assessment contexts namely Assessment for Learning (AforL) and Assessment of Learning (AofL). The findings showed that the level of cognitive achievement for AforL is  $M = 69.12$ ,  $SD = 14.74$  and AofL is  $M = 76.60$ ,  $SD = 12.96$ . The findings of the level of psychomotor achievement for AforL with  $M = 72.28$ ,  $SD = 14:23$  and AofL with  $M = 74.98$ ,  $SD = 9.88$ . The analysis also showed the level of affective achievement for AforL:  $M = 75.33$ ,  $SD = 14:40$  and AofL:  $M = 76.65$ ,  $SD = 18:52$ ). This result clearly showed an improvement in students' learning performance in achievement test through teachers' observation during the teaching and learning of Physical Education for Invasion Game Category Basic Skills.

**Keywords:** affective; assessment; cognitive; invasion; physical education; psychomotor.

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## 1. INTRODUCTION

In 2011, the Primary School Integrated Curriculum has been transformed to Primary School Standard Curriculum (PSSC). The transformation is the strengthening and improvement of the Primary School Integrated Curriculum which involves organization, content, pedagogy, time allocation, assessment methods, materials and curriculum management in schools [1]. Accordingly, Circulars No. 2/2013 statement dated 16 December 2013 notes that starting from 2014, KSSR is implemented by stages begin from Year 4 using Curriculum and Assessment Standard Document (CASD) [2].

School Based Assessment (SBA) is a continuous assessment throughout the teaching and learning process. The assessment takes into account all aspects of intellectual and personality development of students which not only focused on performance in tests alone. The implementation of SBA is fully implemented in schools by teachers by planning, administering, scoring and reporting assessments in an organized way according to the procedures established by the Malaysian Examinations Board [1]. Hence, SBA is the catalyst for the consolidation of the national education system in the development of human capital in order to realize the goal of students Primary School Standard Curriculum, Malaysia National Education Blueprint and National Education Philosophy.

Therefore, teachers should play an important role in the implementation of SBA. The role of teachers in SBA is very important because most decisions made about how the assessment is conducted and used is the responsibility of the teacher [3]. If teachers are not prepared and do not care about SBA, the assessment of students cannot be executed properly and effectively. Assessment should not be made at random especially through trial and error or based on teaching experience alone. Assessment aspects should be based on well-established, scientific and latest assessment knowledge among teachers [4].

School assessment is a process of gathering information to improve the quality of teaching and learning [5]. In particular, school assessment was defined as a process of collecting, recording, interpreting, using and disseminating information about the progress and achievement of pupils in the development of knowledge, concepts, skills and attitudes [6]. School assessment is not only assessment for learning achievement after completing a

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learning process but also should include assessment throughout the learning process so that students can improve learning achievement [7-8]. Assessment of the learning process includes assessment for learning, assessment as learning and the assessment of learning so that students are given the opportunity to collect data about the understanding and mastery of their learning through self-assessment and peer assessment [9].

Assessment for learning occurs during the learning process. Through this assessment, teachers can identify the weaknesses and strengths of students, plan next teaching steps, give appropriate feedback to improve the quality of student learning, and assist students in setting the direction in achieving success [7]. Assessment of learning focuses on students' achievement that reflects what they have learned. In fact, teachers can identify the level of student achievement through the assessment of learning report [4]. Assessment of learning is implemented at the end of a learning unit, term, month or year.

Previous studies have shown that the application of assessment for learning resulted in the increase level of student achievement in the final examination [10] and was able to increase the level of students' activeness in the teaching and learning process [11-13]. Physical Education is the education process that uses physical activity to help muscle growth, increase the level of skills and knowledge and develop positive social skills [6]. Quality Physical Education (PE) can be obtained by education through movement and education for movement [14-15]. Education through movement emphasizes the cognitive and affective aspects while education for movement aims at developing psychomotor aspect and students' fitness.

The teaching and learning of PE should be evaluated based on specific criteria and procedures [16-17]. This is important in giving feedback on students' achievement and teachers' effectiveness [18]. Besides, previous finding concluded that assessment should be part of the daily activities in teaching and learning [7]. Thus, in PE environment, the simultaneous use of assessment and instructional increase the effectiveness of teaching and learning process [19-20]. The use of a variety of assessment methods is better to get feedback on the quality of teaching and learning [4]. In addition to the dimensions of curriculum and pedagogy, assessment is one of the fundamental dimensions in yielding quality PE [21]. In fact, the teaching and learning of PE should be assessed continuously from the psychomotor, cognitive

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and affective aspects [22-24].

Findings also revealed teachers agreed that the process of assessment of students in PE should be carried out continuously, formally, systematically and objectively [24]. This is because the assessments carried out can motivate students besides detecting their weaknesses. Furthermore, assessment also plays the role as feedback to the teacher's instructional while helping teachers in organizing activities so that students receive the maximum teaching and learning [25].

However, the previous study stated that PE teachers are still not efficient in constructing test items, less clear about the meaning of valid and reliable assessment and less skilled in assessing the assessment results. This situation occurs because the teachers still do not have the suitable assessment competence to carry out effective assessment [26]. Accordingly, it had been reported no standard instrument to be used by teachers in assessing students' learning level, especially related to game skills topic [27]. Therefore, he suggested comprehensive assessment instruments in PE and the establishment of standard validity, reliability and objectivity. Next, the implementation of PE should be at par with other subjects and not been implemented apathetically in school [28].

Accordingly, the assessment of PE subject should include assessment for learning (AforL), assessment as learning (AasL) and assessment of learning (AofL) [4]. The assessment is necessary because when teachers and students become the focus in assessing game learning rather than assessing the skills in the game, they will learn to understand the game strategies and anticipate movements in applying certain skills in a game [29].

The objectives of the study were constructed as follows:

- i. To identify the achievement of students' learning performance standards for cognitive learning aspect for the basic skills of the invasion games category in Year 4 PE based on School Based Assessment Module.
- ii. To identify the achievement of students' learning performance standards for psychomotor learning aspect for the basic skills of the invasion games category in Year 4 PE based on School Based Assessment Module.
- iii. To identify the achievement of students' learning performance standards for affective

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learning aspect for the basic skills of the invasion games category in Year 4 PE based on School Based Assessment Module.

## **2. METHODOLOGY**

The design of the study was pre-experimental method-one shot case study. This design involved a study group and was exposed to treatment (X) and the post-test (O). The study was conducted in 10 selected schools in Hulu Selangor. The sample consisted of 18 PE teachers and 544 Year 4 students who attend PE classes. The selection of teacher subjects in this study was by stratified random selection, while the selection of student subjects was conducted by intact in which the subject teachers choose a class of Year 4 PE and all students in the class became the subject of study.

In prior of the main data analysis, all the missing data, data error, outlier, and normality data were checked [30-32]. This study used School-Based Assessment Module ( $r = 0.91$ ) instrument for invasion games category in Year 4 PE. School-Based Assessment Module contains assessment for the invasion games category that is broken down into two assessments contexts, which are assessment for learning and assessment of learning. School Based Assessment Module measures the level of student achievement for psychomotor ( $r = 0.90$ ), cognitive ( $r = 0.93$ ) and affective ( $0.75$ ) aspects of learning. Accordingly, the process of learning assessment uses teacher assessment and self-assessment methods to obtain student learning achievement level score.

## **3. RESULTS AND DISCUSSION**

The overall achievement of student learning performance standards was analyzed according to cognitive, psychomotor and affective learning aspects based on School Based Assessment Module. The results were analyzed using descriptive statistics such as percentage, mean and standard deviation. The mean assessment of student achievement levels were analyzed according to cognitive, psychomotor and affective learning aspects using the scale shown in Table 1.

**Table 1.** Achievement scale of student learning performance standards for basic skill of invasion games category in Year 4 Physical Education based on School Based Assessment

Module		
Learning Aspects	Scale	Standard
	80 - 100	Excellent (E)
Cognitive	65 - 79	Good (G)
Psychomotor	50 - 64	Satisfactory (S)
Affective	40 - 49	Achieve Minimal Level (AML)
	39 and below	Not Achieve Minimal Level (NAML)

Source: Year 4 Standard Document of Physical Education Curriculum and Assessment [2] and the School Examination Analysis System [33].

The study's result was divided into two parts according to the definition of SBAM, which was divided into two assessment methods that were formative assessment and summative assessment. The overall achievement of student learning performance standards were analyzed according to the cognitive, psychomotor and affective learning aspects based on School Based Assessment Module. The findings of this study were analyzed using descriptive statistics such as percentage, mean and standard deviation.

Based on the result in Table 2, the overall mean achievement of performance standards is Excellent (24.30%), Good (38.60%), Satisfactory (24.80%), Achieve Minimum Level (11.60%) and NAML (0.70%) for the five skills assessed among 544 Year 4 students. The overall mean of student achievement of performance standards for assessment of cognitive learning aspect using teacher observation is  $M = 69.12$ ,  $SD = 14.74$  and is in good standard. The analysis also showed the mean achievement of cognitive learning aspect for invasion games category in Year 4 Physical Education using summative assessment / performance test is  $M = 76.60$ ,  $SD = 12.96$  is at performance standard Good with almost half of the students, that is 298 people (54.80%) are at standard performance Excellent and the lowest performance standard is Achieve Minimum Level with 3 students (0.60%).

**Table 2.** The achievement of students' learning performance standards for cognitive aspect of invasion games category in Year 4 Physical Education based on School Based Assessment Module using teacher observation instrument (N = 544)

Skills	Standard					M (%)	SD	Standard
	E	G	S	AML	NAML			
Unit 10								
Deliver and Receive Ball	176 (32.4%)	193 (35.5%)	106 (19.5%)	33 (6.1%)	36 (6.62%)	71.12	18.35	Good
Unit 11								
Ball Dribbling	95 (17.5%)	201 (36.9%)	117 (21.5%)	97 (17.8%)	34 (6.2%)	63.90	18.46	Satisfactory
Unit 12								
Blocking	146 (26.8%)	257 (47.2%)	128 (23.5%)	12 (2.2%)	1 (0.2%)	72.00	13.23	Good
Unit 13								
Intercept	147 (27.0%)	229 (42.1%)	138 (25.4%)	22 (4.0%)	8 (1.5%)	71.22	16.50	Good
Unit 14								
Tackle	138 (25.4%)	185 (34.0%)	154 (28.3%)	49 (9.0%)	18 (3.3%)	67.40	18.48	Good
Overall	132 (24.3%)	210 (38.6%)	135 (24.8%)	63 (11.6%)	4 (0.7%)	69.12	14.74	Good
<b>Summative Assessment/Performance Test</b>								
Written Test	298 (54.8%)	133 (24.4%)	110 (20.2%)	3 (0.6%)	-	76.60	12.96	Good

Note: C - Excellent; B - Good, M - Satisfactory, AML - Achieve Minimum level; NAML - Not Achieve Minimum Level

Table 3 shows the achievement of performance standards for psychomotor learning aspect of 544 Year 4 students assessed through teacher observation method. The overall findings show the student achievement of performance standards for psychomotor learning aspect using

teacher observation assessment instrument is  $M = 72.28$ ,  $SD = 14.23$  is at good performance standard. The analysis also showed mean achievement of psychomotor learning for invasion games category in Year 4 Physical Education using summative assessment instruments / skill test is  $M = 74.98$ ,  $SD = 9.88$  is at good performance standard. The analysis of the findings showed that 258 (47.40%) students achieve excellent performance standard among 544 Years 4 students in and there is no student at - Achieve Minimum Level (AML) and Not Achieve Minimum Level (NAML) performance standards.

**Table 3.** The achievement of students' learning performance standards for psychomotor aspect of invasion games category in Year 4 Physical Education based on School Based Assessment Module using teacher observation instrument (N = 544)

Skills	Performance Standard					M (%)	SD	Standard
	E	G	S	AML	NAML			
Unit 10								
Deliver and Receive Ball	232 (42.6%)	201 (36.9%)	108 (19.9%)	3 (0.6%)	-	77.12	14.81	Good
Unit 11								
Ball Dribbling	157 (28.9%)	199 (36.6%)	131 (24.1%)	32 (5.9%)	25 (4.6%)	69.24	17.77	Good
Unit 12								
Blocking	226 (41.5%)	176 (32.4%)	128 (23.5%)	5 (0.9%)	9 (1.7%)	74.20	15.74	Good
Unit 13								
Intercept	232 (42.6%)	201 (36.9%)	108 (19.9%)	3 (0.6%)	-	71.40	16.72	Good
Unit 14								
Tackle	182 (33.5%)	161 (29.6%)	29 (5.3%)	12 (2.2%)	-	69.44	17.29	Good
Overall	187 (34.4%)	201 (36.9%)	120 (22.1%)	31 (5.7%)	5 (0.9%)	72.28	14.23	Good
<b>Summative Assessment/Performance Test</b>								



Skill Test	258 (47.4%)	194 (35.7%)	92 (16.9%)	-	-	74.98	9.88	Good
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Note: C - Excellent; B - Good, M - Satisfactory, AML - Achieve Minimum Level; NAML - Not Achieve Minimum Level

Table 4 shows the achievement of performance standards for affective learning aspect of invasion games category in Year 4 Physical Education using teacher observation assessment instrument. The findings show that the achievement of affective learning in 544 Year 4 students assessed through teacher observation. The overall mean performance was at Good performance ( $M = 75.33$ ,  $SD = 14:40$ ). The analysis also shows that the mean achievement of affective learning of invasion games category in Year 4 Physical Education using summative assessment instrument / skill test is  $M = 76.65$ ,  $SD = 18:52$  is at good performance standard. The analysis showed 362 (66.50%) students achieve excellent performance standard, 139 people (25.60%) at good performance standard among 544 Years 4 students and no student is at Not Achieve Minimum Level (NAML) performance standard.

**Table 4.** The achievement of students' learning performance standards for affective aspect of invasion games category in Year 4 Physical Education based on School Based Assessment Module using teacher observation instrument (N = 544)

Skills	Performance Standard					M (%)	SD	Standard
	E	G	S	AML	NAML			
Unit 10								
Deliver and Receive Ball	219 (40.3%)	153 (28.1%)	140 (25.7%)	17 (3.1%)	15 (2.8%)	72.84	19.09	Good
Unit 11								
Ball Dribbling	159 (29.2%)	266 (48.9%)	95 (17.5%)	23 (4.2%)	1 (0.2%)	74.03	15.46	Good
Unit 12								
Blocking	259 (47.6%)	155 (28.5%)	108 (19.9%)	22 (4.0%)	-	76.55	17.21	Good

Unit 13	282	165	88	9	-	78.49	16.02	Good
Intercept	(51.80)	(30.3%)	(16.2%)	(1.7%)				
Unit 14	193	209	136	6	-	74.74	17.03	Good
Tackle	(35.5%)	(38.4%)	(25.0%)	(1.1%)				
Overall	231	184	118	11	-	75.33	14.40	Good
	(42.5%)	(33.8%)	(21.7%)	(2.0%)				
<b>Summative Assessment/Performance Test</b>								
Skill Test	362	139	37	6	-	76.65	18.52	Good
	(66.5%)	(25.6%)	(6.8%)	(1.1%)				

Note: C - Excellent; B - Good, M - Satisfactory, AML - Achieve Minimum Level; NAML - Not Achieve Minimum Level

The assessment instruments for learning are built based on Standard Document of Curriculum and Assessment (SDCA) Year 4 Physical Education and The Handbook of Teaching Year 4 Physical Education. There are 51 items that measure cognitive, psychomotor and affective learning aspects with three items for each learning aspect in each unit of basic skills games category. The overall result showed that the achievement of cognitive, psychomotor and affective learning aspects using assessment for learning (formative assessment) is at good performance standard. However, the study showed affective learning aspect achieves the highest mean percentage compared to psychomotor and cognitive learning aspects. This shows that the students still exhibit affective learning aspects in games, whereby the affective aspect is important and plays a role in a game or physical activity. Among the affective aspects assessed are cooperation during physical activity, confidence in performing various movements and identify safe space to do activities as highlighted in standard learning requirements in SDCA.

Assessment for learning is useful for teachers to identify what students know, what students can do, and what are the learning gaps and problems faced by the students. Also, students can identify their performance and how they can overcome any weaknesses. Thus, the assessment for learning instrument using teachers observation method contained in School-Based Assessment Module is an alternative assessment in assessing the performance standards of

achievement of cognitive, psychomotor and affective learning aspects in Year 4 Physical Education [4, 13, 34-36].

In addition, assessment for learning is also defined as an assessment method which is continuous, active and capable of improving the mastery performance and students' active participation. Accordingly, supportive study proved that assessment or continuous supervision during the teaching and learning process are able to enhance the activeness and skill mastery [37]. This is also supported by the previous research which found that active assessments allow students to feel good throughout the process of teaching and learning [38].

Referring to the findings of the achievement of student learning performance standards using assessment for learning instrument with achievement performance standard using assessment of learning instrument, it was found that the mean of assessment of learning (summative test / performance test) is higher than the mean of assessment for learning (formative test). This situation clearly shows that an increase in student learning achievement in performance test using teacher observation assessment during the teaching and learning of basic skills in invasion games category in Physical Education. This decision is consistent with the findings of several previous studies, which stated that the implementation of assessment for learning can help in improving the achievement of performance standards in assessment of learning [10, 39-40]. The use of School-based Assessment Module via assessment instruments for learning and assessment of learning assessment is in line with current practices as envisaged in the National Education Blueprint 2013-2025 [1] and the Examination Board No. 1/2014 [41].

#### **4. CONCLUSION**

According to the study, School-based Assessment Module is a standard instrument in assessing student learning achievement levels for basic skill of invasion games category in Year 4 Physical Education. Thus, the School-based Assessment Module could be used in the teaching and learning of Physical Education so that teachers can assess student in overall in terms of cognitive, psychomotor and affective learning aspects. This is in accordance with the learning standards to be achieved as envisaged in Year 4 Physical Education SDCA. Therefore,

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students are given space and opportunity to master the knowledge, skills, practice of moral values through the teaching and learning of Physical Education. In this case, the standardized School-based Assessment Module is an appropriate and accurate assessment instrument to assess the level of students in a fair and transparent manner based on their actual achievement levels. It is hoped that through School-based Assessment Module, the student learning assessment process can be carried out with more specifically and explicitly. This implementation shows the power of knowledge related to student academic achievement is further strengthened and restore the status quo of PE in schools throughout Malaysia.

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