

The Effectiveness of Extensive Assessment Instruments on the Psychomotor Achievement Levels for Fielding Category Games in Year 5 Physical Education Subjects



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Abstract: *The purpose of this study was to identify the level of learning achievement in psychomotor domain by using Extensive Assessment Instruments (EAI) for fielding category games in Year 5 Physical Education subjects. One shot case study design was used in this study. This study was conducted at nine primary schools in Muar district of Johor with 8 Physical Education (PE) teachers and 570 Year 5 students in PE class involve as participant. The Extensive Assessment Instrument ($r = 0.96$) contained a rating rubric for the psychomotor domain. The percentage of teachers' agreement on the EAI use was 94.14%. The results of this study showed that the level of students achievement on psychomotor domain for fielding category games in PE subjects was ($M = 68.33$, $SD = 0.87$) at the mastery level. Based on these findings, EAI was ideally to used as a standardized measure for assessing student learning achievement in the fielding category games for Year 5 PE subject*

Index Terms: *Physical Education, Extensive Assessment Instruments, one shot case study.*

I. INTRODUCTION

Assessment was derived from the Greek word "Assidere" meaning "sit by" (Adimin, 2011). According to Najib [1], assessment was a process of measuring or systematic evaluation that involves the collection, analysis and translation of information about the level of student achievement on the teaching objectives. Assessment includes variety of procedures used to obtain information about student learning in schools (projects, observations, performance evaluation, paper and pencil tests) and formation values of consideration on student learning progress [2].

Previous study shows that PE teachers at schools use variety of ways and methods to evaluate and assessing in Physical

Education subjects assessments. A recent survey on PE teachers by Hensley, Lambert, Baumgartner and Stillwell [3] found that more than 50% of teachers use skills and written test as assessment tools to evaluate students.

Furthermore, Wee (2009) explains that assessment in PE was not only to provide feedback on student learning but also to determine the effectiveness of teaching by teachers. Lund and Krik [4] state that there are several ways to assessing behavior on PE such as observation (teachers, freinds and self). Observation was the method that teachers often use in Physical Education assessment. During skill-based activities were implemented, teachers will observe and evaluate students to the skills and grade their achievement based on the actual performance.

It is clear that teachers role and responsibility were very important to ensuring that learning assessment were carried out effectively in order to achive objectives that have been set. In addition, teachers were also responsible to provided accurate and fair learning reports based on information and evidence gathered from variety of contexts and applications [5]. The purpose of assessment in Physical Education and co-curricular activities were to measure and evaluate student performance, participation and involvement in Physical Education activities. Therefore, authentic assessment introduced by Wiggins [6] was an appropriate assessment system to use during the teaching and learning process in Physical Education subjects at schools.

While Dikli [7] suggested that alternative assessments should be used by teachers at school as a new method in the education system to replace tests based on curriculum and teaching only. Since alternative assessments have been developed over time, PE teachers have the opportunity to measure strengths and weaknesses of students' in various fields, skills and situations [8].

Behavior assessments also known as alternative assessments or authentic assessments. Alternative assessments were less emphasis on paper and pencil tests, while authentic assessment were more emphasis on real situation in application and practical evaluation. Because of that, behavioral assessment for Physical Education subjects was particularly appropriate for assessing student achievement in psychomotor and affective domains [9].

Therefore, assessments of Physical Education must be implemented and evaluated based on specific criteria and procedures [10].

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Assessment of Physical Education was very important in order to provide feedback on the level of student achievement and the effectiveness of the teaching and learning process that implemented by teachers at schools [11].

In conclusion, assessment should be one of the daily activities on the teaching and learning process in schools [12].

The future of educational assessment predicted many possibilities and PE teachers should be prepared to face any challenges in the future. In addressing these demands, assessment plays a vital role to ensuring that every student receives the quality education, skills, knowledge, and good values that they need (Mohd Hazim, 2016).

However, there are still have teachers in schools face many problems in implementing assessment processes such as workload in schools to implement assessments and evaluation [13, 14], teachers lack understanding on methods and concepts of assessment and evaluation [15] and teachers were less skilled in planning to implemented assessment and evaluation in schools [16].

Study by Sattu and Said (2011) found that most of teachers in schools were less skilled to correlate curriculum syllabus and assessment activities to be carried out in order compliance with the basic principles of assessment and evaluation. While Salimin [17] reported that there was no standard document used by PE teachers in schools in assessing student learning levels related to game skills. Ali [18] state that teachers have a moderate level of knowledge and skills to conducting assessments in schools. According to Abdullah et al. [16], PE teachers in schools face problems and competencies ito developing question items and implementing assessments.

Based on the previous study that have been discussed, it is advisable for evaluation level of psychomotor domains achievement were continuously studied in various primary schools and streams. Therefore, this study was conducted to identify the level of achievement on psychomotor domain in Year 5 student primary school at Muar Johor district using EAI on PE subjects especially for fielding category game skills.

Objective of this study was to identify level of students achievement on psychomotor domain for fielding category games using EAI. This study also was to evaluated the

effectiveness used of EAI on fielding category for year 5 Physical education.

II. METHODOLOGY

A. Research design

One shot case study was used as a research design in this study. Design of this study involved one treatment group (X) and post-test (O). This study was conducted at nine primary schools in Muar district of Johor state. The sample of this study were consist 18 PE teachers and 570 year 5 students that involved in teaching and learning process for year 5 fielding category games of PE subjects. Selection for schools and teachers in this study were using stratified random sampling. While students selection was using intact method where the teacher selected one of year 5 PE class and all the students in the class automatically be participant of the study.

B. Participants

This study involved six sessions of PE subject with 30 minutes for each session. Teachers' agreement questionnaires on the used of EAI for fielding category games were given to 18 PE teacher subjects after completing the entire of teaching and learning process for fielding category game skills.

C. Procedure

Assesment of the psychomotor domain learning level in Year 5 PE for fielding category games were conducted by PE teachers during teaching and learning process through observation method in progression and small sided games sessions. EAI was a assesment using a rating score with fraction of sections according to the learning level of the psychomotor domain (r = 0.96) as shown in Table 1.

D. Psychomotor extensive assessment instruments

Students level in psychomotor achivement for fielding category were based on six basic skills such as throwing ball into the target, throw the ball, move and hold the ball, hit the ball and catch the ball. Psychomotor assesments were performed by teachers during PE subject teaching and learning process. Levels od student achievement were assess based on five levels of EAI namely mastery basic skill, mastery some of skill, mastery, whole mastery, and naturally mastery.

Table 1. Extensive assessment intruments of psychomotor for fielding category on year 5 physical education subjects.

Name : **Year:** **School:** **Gender: M / F** **Date:**
Instruction for teacher: - Observe students skills during physical activity and make a rating
 - Tick (✓) on the level of mastery space.

o	Learning standard	Score				
		1	2	3	4	5
UNIT 21						
1	Throw the ball with straight hand in the clockwise to the target					
UNIT 22						
2	Throw the ball with straight hands in the opposite direction clockwise to the target					
UNIT 23						
3	Hit the ball in various directions and distances then move to the designated area					

UNIT 24						
4	Hold the ball in different directions with the batter and move to the designated area					
UNIT 25						
5	Throw the ball with lower throw					
UNIT 26						
6	Catch the bouncing ball					

LEVEL	SCORE	MASTERY RUBRIC
Naturally mastery	5	Student was able to perform their actions naturally and automatically, fully master the entire movement with the right technique without hesitation, create new movements and can manipulate movement with real situations.
Whole mastery	4	Student can incorporate movement patterns and master entire skills sequentially, well skills develop, able to customize movement according to the situation and create new quality movements.
Mastery	3	Student was able to dominate skills movement with the right techniques, accuracy and precision, the skills learned can be mastered and perfectly presented, high confidence, efficiency and quality.
Half mastery	2	Student was able to manipulate and demonstrate movement style according to their level of skill in some or whole with the right way and technique, the whole movement style can be done with confidence.
Basic mastery	1	Student was able to imitate movement style as well as doing all the basic skills,

III. RESULTS

The data and scores were analyzed descriptively using the Social Sciences Statistics (SPSS) program version 23.0. Table 2 shows the level of psychomotor domains achievement for fielding category games in Year 5 PE using AEI.

Table 2. Level of learning achievement in psychomotor domain using Extensive assessment instrument (N= 570)

Skills	% Level					(M%)	SD	Level
	BS	MK	M	MS	MA			
Throw the ball with straight hand in the clockwise to the target	6.00	38.40	38.10	16.80	0.70	66.40	0.84	WM
Throw the ball with straight hands in the opposite direction clockwise to the target	4.60	39.10	40.20	15.60	0.50	66.40	0.80	WM
Hit the ball in various directions and distances then move to the designated area	9.30	33.70	41.90	13.90	1.20	67.20	0.87	WM
Hold the ball in different directions with the batter and move to the designated area	11.40	35.80	37.00	15.30	0.50	68.40	0.90	WM
Throw the ball with lower throw	12.80	37.70	34.90	14.40	0.20	69.80	0.89	WM
Catch the bouncing ball	18.90	34.20	34.70	11.60	0.50	71.80	0.94	WM
Overall (M = 68.33, SD = 0.87; Level = Whole mastery)								

NM(5)=Naturally Mastery; WM(4)=Whole Mastery; M(3)=Mastery; HM(2)=Half Mastery; BM(1)=Basic Mastery

Table 3 . Teacher agreement on the used of extensive assessment instrument

No	ITEM	% OF TEACHERS AGREEMENT
1	Student achievement can be improved	87.40%
2	Use of assessment on teacher needs	92.20%
3	Use of assessment on standards achievement	98.90%
4	Use of assessment on implementation characteristics	92.20%
5	Accountability aspects	100.00%
Total		94.14%

Based on table 2, overall students level of psychomotor achievement using EAI was (M = 68.33, SD = 0.87). This results shows that student psychomotor achievement was at the whole mastery level. Analysis showed the highest achievement were throw the ball with straight hand in the clockwise to the target (38.40%) and throw the ball with lower

throw (37.70%), both of this skills were at the whole mastery level. While for other skills, throw the ball with straight hands in the opposite direction clockwise to the target (40.20%),

hit the ball in various directions and distances then move to the designated area(41.90%), hold the ball in different directions with the batter and move to the designated area (37.00%) and Catch the bouncing ball (34.70%) were at mastery level.

Overall, researchers found that students did not have any problems to perform all the fielding category game skills. This study shows that students were achieved the second highest level during the teaching and learning session. At this stage students were able to incorporate movement patterns and master the whole skill sequences, well skills develop, be able to adapt movement styles according to the situation and create quality new movements, skills can be develop well, able to modify the movement style according to the situation and create a new quality of movement.

Extensive Assessment Instrumentation was one of the assessment tools that can evaluate the level of learning achievement in psychomotor domain for fielding category games as it can assess student achievement levels in psychomotor aspects. Thus, Alessi and Trollip [19] state that learning in psychomotor aspects were not only through observation and classroom but it should be practiced and evaluated by teachers. Other than that, EAI were able to assess and identify levels of student learning achievement for Year 5 fielding category games during progression process and small sided games in the teaching and learning of Physical Education session. In addition, EAI was compatible with psychomotor domain assessment methods that measure students competencies and abilities in terms of fitness, games, physical and motor behavior [20]. Dann [21] and Young & Jackman [22] found that formative assessment can be conducted through teacher observation during teaching and learning process in Physical Education session. Therefore, students were assessed continuously throughout the teaching and learning session to evaluate students' ability accurately and depth based on behavioral assessments. The EAI method was support findings from Cheah's (1996) that report practice method during skills teaching was very important. By this method, teachers can help students in process to strengthen and mastery the skills.

Based on this finding, it can be concluded that psychomotor domain was important domain that should be noted in fielding category game skills. However, most teachers neglect the psychomotor domain in the teaching and learning process because of the difficulty to evaluate psychomotor domain [23]. Traditional teaching and learning methods often emphasize cognitive domains rather than psychomotor [24]. Researchers also analyzed level of teachers' agreement on the use of EAI based on five elements, namely, the use of EAI to improved student achievement, teacher needs, standards of learning achievement, performance characteristics and accountability by using the teacher agreement questionnaire on the use of IPE. The results of the study were shown in Table 3.

Based on table 3, rate for overall teacher agreement on EAI used at first item that student achievement can be improved was 94.14%, Results of this study was showed 87.40% of PE teachers agreed that use of EAI can help to improve level of students achievement. Result for second item, use of assessment on teachers needs showed 92.20% of PE teachers agreed that used of EAI can helped teaching and learning process going smoothly. Next, for the third item, use of assessment on standards achievement was showed 98.90% of

PE teachers agreed the used of EAI can achieved learning standards in PE subject. Analysis of teacher agreement for the fourth item, use of assessment on implementation characteristics was showed that 92.20% of PE teachers agreed that EAI procedures was easy to understand and lastly for the fifth item from accountability aspect, researchers have found that 100.00% of PE teachers agreed that EAI was easy to implement and did not limit the assessment process during teaching and learning of PE subject.

The results of this study consistent with assessment criteria based on Wiggins [6] and Rayan & Miyasaka [25] which is assessments was designed based on real situations and on the students' abilities, thus subsequently generate interest and motivation to enhance student achievement. Assessment method through teacher observation was consistent with the method proposed by Lund and Krik [4] and Noraini's [26] that assessment techniques was used to see how successful and effectiveness teaching and learning process.

In addition, teachers can identify students' strengths and weaknesses, in turn help to overcome weaknesses in improving their learning achievement. Other than that, teachers can identify levels of learning achievement and the differences achievement levels between students during an assessment was implemented. Teachers will provide guidance and feedback to overcome these differences [27]. The use of PE instruments can provide an initial indication the level of mastery in psychomotor aspects for a skill before transferring to another skills (Black & Wiliam, 1998).

IV. CONCLUSIONS

Based on the results of this study, AEI was suitable to used by PE teachers as a standard tool for assessing level of student learning achievement on fielding category game in year 5 PE subjects. The used of AEI was more realistic and able to evaluate students in psychomotor aspects parallel with objectives of PE subjects. AEI also suitable with Classroom Assessment and its use can help teachers assess students' ability more accurately and fairly.

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