

Alignment between Understanding and Assessment Practice among Secondary School Teachers

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Abstract—This study aimed to identify the alignment of understanding and assessment practices among secondary school teachers. The study was carried out using quantitative descriptive study. The sample consisted of 164 teachers who taught Form 1 and 2 from 11 secondary schools in the district of North Kinta, Perak, Malaysia. Data were obtained from 164 respondents who answered Expectation Alignment Understanding and Practices of School Assessment (PEKDAPS) questionnaire. The data were analysed using SPSS 17.0+. The Cronbach's alpha value obtained through PEKDAPS questionnaire pilot study was 0.86. The results showed that teachers' performance in PEKDAPS based on the mean value was less than 3, which means that perfect alignment does not occur between the understanding and practices of school assessment. Two major PEKDAPS sub-constructs of articulation across grade and age and usability of the system were higher than the moderate alignment of the understanding and practices of school assessment (Min=2.0). The content focused of PEKDAPS sub-constructs which showed lower than the moderate alignment of the understanding and practices of school assessment (Min=2.0). Another two PEKDAPS sub-constructs of transparency and fairness and the pedagogical implications showed moderate alignment (2.0). The implications of the study is that teachers need to fully understand the importance of alignment among components of assessment, learning and teaching and learning objectives as strategies to achieve quality assessment process.

Keywords—Alignment, assessment practices, School Based Assessment, understanding.

I. INTRODUCTION

SCHOOL-BASED ASSESSMENT (PBS) has been completely implemented in 2014. It is a holistic based assessment which assesses cognitive aspect (intellectual), affective aspect (emotional and spiritual) and psychomotor aspect (physical) in line with the National Education Philosophy and Primary School Standard Curriculum [7]. The expected reforms were based on the improvement of students' learning outcomes which were measured using a formative assessment. PBS has been implemented using a Standard Reference Assessment basis [12]. This standard was used to guide the assessor on how the assessment activity could and should be implemented in a focused and fair manner. The standard mentioned referred to a statement which defines an individual's achievement or mastery in a specific field in a

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stipulated learning period based on an identified benchmark [6]. PBS has been commended for its holistic, integrated, balanced, flexible, standard-based features and it forms part of the teaching and learning processes [8]. The success of the national assessment system partly depends on the effectiveness of the PBS implementation at school.

II. PROBLEM STATEMENT

As higher accountability is directed towards the education system, alignment between expectations and assessment is not only deemed important but could also be a critical matter. Expectations and assessment practices which have been aligned with much care and responsibility would enable teachers to understand and thus show their ability to make the planned reforms a reality. It is to the advantage of the teachers with the availability of instruments which could explain how students are able to master the required learning outcomes. The alignment of expectations with assessment could improve the effectiveness of the education system. An aligned system would facilitate the use of limited resources effectively. Aligned information and measurement of target achievement may enable those involved in education to work together towards the same outcome. Prior discussion between teachers who implemented PBS among Form 1 students and officers from State Education Department showed a discrepancy between expectations and the implementation of school assessment. Expectations from school leaders about the implementation of PBS could be ascertained from the PBS features while the PBS implementation at school could be observed from the understanding and teachers and school administrators' understanding and assessment practice. This study would examine the alignment of important features of PBS at the school level.

III. LITERATURE REVIEW

The Malaysian Ministry of Education had informed on the upgrading of the National Assessment System for PMR (Lower Secondary Assessment) beginning in 2012. As such the implementation of the School-based Assessment is in line with the expectations of the Ministry and the whole Malaysian population who had hoped for a transformation towards the lessening of exams as well as giving the opportunity for teachers and students to improve their skills and creativity [6]. Though teachers have been burdened with a lot of responsibility, they are still able to provide a perfect balance between expectations and assessment. Teachers who have been equipped with information and knowledge and more likely to be responsible in improving his/her practice and

would not choose to neglect improvement in his/her career [3]. Documents or information which have been aligned with much care and responsibility would enable teachers to understand and thus show their ability to make the planned reforms a reality. It is to the advantage of the teachers with the availability of instruments which could explain how students are able to master the required learning outcomes. The alignment of expectations with assessment could improve the effectiveness of the education system.

Aligned information and measurement of target achievement may enable those involved in education to work together towards the same outcome. Reference [13] defined alignment as 'making matches'. The alignment between understanding with the assessment practice comprises a perfect match involving important aspects in the expectations of assessment understanding with assessment practice. Alignment is the degree where expectations of assessment understanding and assessment practice are in line and contribute towards each other's continuity as a systematic guide towards what is expected and required. It also refers to the extent where the element of a system cooperates positively to guide teaching and learning towards a student-learning based outcome [10]. Two or more systems are aligned if one matches or conforms to another. Expectations can be understood from what the teacher should know about assessment and what can be done using the knowledge. This can be explained in a few ways especially regarding the expectations of learning outcomes which need to be measured using a particular assessment or test constructed.

Assessment is important [15] for improving students' learning by creating a clear system. It is essential especially for the professional group i.e. teachers in their effort to develop successful students [1]. A more distant and dynamic level may present itself as a lesson while a more concerted effort to create reforms in education can be considered an '*alignment*'. The most important aspect in the education system is the need to cooperate to develop the human capital which can achieve a higher level of understanding in education.

The alignment of Assessment Understanding with Assessment Practice is measured using the five main criteria [15]: firstly, a focus on consistent content towards the development of teaching and learning. The assessment specifications and activities have been created to provide evidence on specific expected achievement of students. For the assessment system which shows similar category of content with the Ministry's standards, then the minimum requirement should be that the assessed curriculum content should match the curriculum category in the education syllabus.

The consistency of knowledge depth may differ according to certain dimensions, including the student's level of knowledge cognitive complexity, the extent of which the student is able to transfer knowledge in different contexts and how much prior knowledge the student should have to understand a challenging idea. The student's ability to assess his knowledge is an important tool for developing an

individual with his own self-access learning skills. The assessment practice in line with this particular aim includes the opportunity for the student to critique his own work and to explain how his work sample can provide evidence of his understanding [5].

Expectations and assessment should take root through the conventional view of the student's development and how the student could be assisted to learn at different developmental levels. The student's development of understanding of a subject increases according to time and this enables the student to attain a higher level of analysis and to work with more tolerance. The students' understanding of a subject grows as time goes by and enables them to attain a higher analysis level and to work with more tolerance. Similarly, the students' understanding of an abstract matter increases. To enable the assessment system to move in line with the measurement standard, the instrument used which is based on grades should also follow the view of how students' understanding develop from forming a single relationship between units and quantity to more complex ideas involving abstract quantities and units [11].

It is imperative that students be given a fair chance to show what they hope to achieve and to provide equal opportunities for them to acquire skills, knowledge and experience. The various types of assessment used for this challenge would enable the growth and continuity of the assessment system in order to illustrate more clearly what the students know and what they can do.

Classroom practice can greatly influence the students as each of them has his or her own differences. Expectations and assessments can indeed be implemented as these practices can affect the teachers in their effort to provide the most suitable type of pedagogy [2]. Elements such as learning theories, a variety of stimulation, classroom management, effective communication in and out of the classroom have been integrated into the teaching and learning process. The most vital element to be considered in assessing teaching and its influence on pedagogy is the student's involvement and effective classroom practice [5]. In this way, the education system can be measured easily as it is not seen as being too complex and at the same time the student is able to acquire knowledge with more depth. Secondly, the use of technology, resource and tools are important for the students to know and solve problems not only in math and science subjects. Many students are able to increase their confidence and skills by using technological tools in everyday life. As such, there is a need for the school to provide complete equipment in order to develop high-skilled students. The students should also prepare themselves to get involved in a realistic program geared for the real world. The policies introduced should be clearly understood and easy to be implemented by teachers and school administrators.

IV. RESEARCH OBJECTIVES

This study is based on the school-based assessment aligned with teachers' practice with a concern with the elements in the above mentioned system, specifically explaining its

implementation at the school level. Therefore, the main objective of the study is to identify the alignment of understanding and school-based assessment practice among the teachers.

V. RESEARCH QUESTIONS

What is the alignment between understanding and assessment practices of teachers in secondary schools in the Kinta district?

VI. RESEARCH HYPOTHESIS

- H1. There is no significant difference in terms of mean scores for alignment of understanding with assessment practices of teachers (Min=2.99)
- H2. There is no significant difference in terms of mean scores for alignment of content focus with moderate alignment of understanding with assessment practices of teachers (Min=2.0)
- H3. There is no significant difference in terms of mean scores for articulation across grade and age with moderate alignment of understanding with assessment practices of teachers (Min=2.0)
- H4. There is no significant difference in terms of mean scores for transparency and justice with moderate alignment of understanding with assessment practices of teachers (Min=2.0)
- H5. There is no significant difference in terms of mean scores for pedagogical implications with moderate alignment of understanding with assessment practices of teachers (Min=2.0)
- H6. There is no significant difference in terms of mean scores for system usability with moderate alignment of understanding with assessment practices of teachers (Min=2.0)

VII. OPERATIONAL DEFINITIONS

A. Assessment Expectations

This can be defined as the information a teacher should know and understand about assessment based on 5 major constructs which are 1) content focus, 2) articulation across grades and age, 3) transparency and justice, 4) pedagogical implications and 5) system usability.

B. Assessment Understanding

The operational definition for the above is based on 5 major constructs which are 1) content focus, 2) articulation across grades and age, 3) transparency and justice, 4) pedagogical implications and 5) system usability.

C. Alignment of Understanding and School Assessment Practice

Alignment between understanding and assessment practice forms a perfect match involving vital aspects in assessment understanding and assessment practice. Alignment involves the degree whereby assessment understanding and assessment practice fit perfectly and contribute to each other's continuity

as a system guide for what is expected to happen. The operational definition for alignment understanding and assessment practice in this study is full alignment in PEKDAPS with Min=2.99, moderate alignment Min=2.00 and little alignment Min=1.0.

VII. RESEARCH DESIGN

The researcher utilized a quantitative descriptive study with the aim of describing the situation observed. The study population comprised teachers in the Northern Kinta district in Perak. The sample consisted of 164 teachers who taught Forms 1 and 2 from 11 secondary schools in the Northern Kinta district. The quantitative data was acquired from 164 respondents who answered the questionnaire on the Alignment of Expectation Understanding and School Assessment Practice. The study utilized the PEKDAPS survey questionnaire

VIII. RESEARCH FINDINGS

A. Descriptive Analysis

The five main constructs which form the basis for the construction of the PEKDAPS instruments are content, articulation across age and grades, transparency and justice, pedagogical implications and system usability. The findings in Table I show that the teachers' scores in all PEKDAPS constructs were situated around mean scores of less than 3. The highest scores were attained in the system usability construct which are Min=2.59, SP= 0.584. The lowest scores were attained in the content focus (Min=1.50, SP=0.60), pedagogical implication (Min 1.96, SP=0.67) and articulation across age and grades constructs (Min=2.31, SP=0.547). The five main constructs comprise 27 items which functioned together in the continuum of variables which represent the dominant PEKDAPS characteristics.

TABLE I
 TEACHERS' ATTAINMENT IN MAIN CONSTRUCTS WITH SCHOOL ASSESSMENT PRACTICE

PEKDAPS Main Construct	M	Sd
1. Content Focus	1.50	.602
2. Articulation Across Age and Grade	2.31	.752
3. Transparency and Justice	2.03	.547
4. Pedagogical Implication	1.96	.673
5. System Usability	2.59	.584

B. Inferential Analysis

A t-test analysis was conducted to ascertain whether on the average, the population mean in alignment of understanding and assessment practice was the same as total alignment of understanding and school assessment practice (Min=2.99) and moderate alignment (Min=2.0). The t-test analysis was used to answer the following hypothesis:

Hypothesis 1

There was no significant difference between mean scores of alignment of understanding with teacher assessment practice in the Kinta district compared to total alignment of

understanding with teacher assessment practice (Min=2.99)

TABLE II
 T-TEST ANALYSIS OF ALIGNMENT BETWEEN UNDERSTANDING AND
 ASSESSMENT PRACTICES OF TEACHERS IN THE KINTA DISTRICT

Test Value = 2.99				
	t	df	P	Min Difference
Assessment Practice Aligned with Assessment Understanding	-35.31	163	.001	-1.58

The t-test analysis in Table II showed that Hypothesis 1 was rejected as the mean score for alignment of understanding and teacher assessment practice in the Kinta district (Min=1.41) was much lower significantly compared to total alignment of understanding and assessment practice (Min=2.99), $t(163) = -35.31, p < 0.05$.

Hypothesis 2

There was no significant difference for mean score of alignment of content focus in alignment of understanding and school assessment practice in the Kinta district compared to moderate alignment of understanding with school assessment practice (Min=2.0).

The t-test results in Table III showed the mean score difference for each sub-construct of alignment of understanding and school assessment practice in the Kinta district with lower mean score for alignment compared to the mean score of moderate alignment of understanding with school assessment practice (Min= 2.0). The findings showed that the mean for alignment of content focus understanding and teacher assessment practice in Kinta was much lower significantly compared to alignment of understanding and school assessment practice (Min=2.0), $t(163) = -10.643, p < 0.05$. The analysis indicated that the hypothesis was rejected which showed on average the teachers' attainment in PEKDAPS content focus was much lower than moderate alignment (Min=2.0) significantly.

TABLE III
 T-TEST ANALYSIS OF ALIGNMENT BETWEEN UNDERSTANDING AND
 ASSESSMENT PRACTICES OF TEACHERS IN THE KINTA DISTRICT

Test Value = 2.0				
	t	Df	P	Min Difference
Content Focus	-10.64	163	.00	-.50
Articulation Across Age And Grade	5.33	161	.00	.32
Transparency And Justice	.713	163	.24	.03
Pedagogical Implication	-1.04	163	.15	-.06
System Usability	12.97	163	.00	.59

Hypothesis 3

There was no significant difference in terms of the mean score for articulation across age and grades in alignment of understanding and school assessment practice in the Kinta district with moderate alignment of understanding with assessment practices of teachers (Min=2.0)

The t-test results in Table III showed that there was significant difference in terms of the mean score for the sub-construct of articulation across grade and age in alignment of understanding with teacher assessment practice in the Kinta district with a higher mean for alignment compared to the

mean for moderate alignment of school assessment practice understanding (Min= 2.0). The analysis indicated that the mean for articulation across grade and age in alignment of understanding and teacher assessment practice in the Kinta district was significantly higher compared to alignment of understanding and school assessment practice (Min=2.0), $t(163) = 5.33, p < 0.05$. As such, the hypothesis was rejected which showed on average that the teachers' attainment in PEKDAPS' articulation across grades and age was higher compared to the moderate alignment (Min=2.0) significantly.

Hypothesis 4

There was no significant difference in terms of the mean score for transparency and justice in alignment of understanding and school assessment practice in the Kinta district compared to moderate alignment of understanding with assessment practices of teachers (Min=2.0)

The t-test results in Table III showed that there was no significant difference of mean score for the sub-constructs of transparency and justice in alignment of understanding with teacher assessment practice in the Kinta district with the mean score of moderate alignment of school assessment practice alignment of understanding (Min= 2.0). This analysis showed that the mean for transparency and justice in alignment of understanding and teacher assessment practice in the Kinta district was not significant compared to the alignment of understanding and school assessment practice (Min=2.0) , $t(163) = 0.713, p = 0.24$. As such, the hypothesis was rejected which showed on average that the teachers' attainment in PEKDAPS transparency and justice was moderate (Min=2.0).

Hypothesis 5

There was no significant difference in terms of the mean score for pedagogical implications in alignment of understanding and school assessment practice in the Kinta district compared to moderate alignment of understanding with assessment practices of teachers (Min=2.0)

The t-test results in Table III showed that there was no significant difference for the sub-construct of pedagogical implication in alignment of understanding with teacher assessment practice in the Kinta district with the mean score of moderate alignment of school assessment practice alignment of understanding (Min= 2.0). The analysis showed that the mean score for pedagogical implication in alignment of understanding and teacher assessment practice in the Kinta district was not significant compared to the alignment of understanding and school assessment practice (Min=2.0) , $t(163) = -1.04, p = 0.15$. As such, the hypothesis was rejected which showed that on average the teachers' attainment in PEKDAPS pedagogical implication was moderate (Min=2.0).

Hypothesis 6

There was no significant difference in terms of the mean score for system usability in alignment of understanding and school assessment in the Kinta district compared to moderate alignment of understanding with assessment practices of teachers (Min=2.0)

The t-test results in Table III showed that there was

significant difference in terms of the mean score for the sub-construct of system usability in alignment of understanding with teacher assessment practice in the Kinta district with a higher mean score of alignment compared to the mean for moderate school assessment practice alignment of understanding (Min= 2.0). The analysis indicated that the mean score for system usability in alignment of understanding and school assessment practice in the Kinta district was significant compared to the alignment of understanding and school assessment practice (Min=2.0) , $t(163)= 12.97, p<0.05$. As such the hypothesis was rejected which showed that on average the teachers' attainment in PEKDAPS system usability was higher than moderate alignment (Min=2.0).

Hypotheses 2 and 6 demonstrated that each sub-construct in alignment of understanding and teacher assessment practice in the Kinta district was higher than the mean score for moderate alignment and school assessment practice (2.0). Therefore it could be concluded that the mean for alignment of understanding with teacher assessment practice in the Kinta district was much lower significantly compared to total alignment of understanding and assessment practice (Min=2.99).

IX. DISCUSSION

The findings from PEKDAPS showed a weak alignment between expectations of understanding with school assessment practice among teachers who taught Forms 1 and 2. A good assessment plan would enable objective information to be disseminated, which can be used as a foundation to consider various options concerning teaching and learning especially in the aspect of student development. Classroom teaching and learning can be considered as a development process for the individual student as he or she develops as an effective learner who further moves on as a young adult equipped with various holistically developed competencies. The final objective to be fulfilled in the expected development of a student should also follow the vital assessment stages in the students learning development [7]. This objective should be handled using teacher training which specifically discusses the criteria and focuses on the 'hands-on' activities and to apply and interpret the criteria according to a specific context [14]. Teacher workshops should also focus on the production of portfolio with examples of assignments, marking schemes or how to construct instruments which could measure student achievement in a consistent and fair manner.

An assessment which is not aligned with learning objectives and teaching and learning strategies may affect the student. If the learning objective requires the student to utilise evaluation skills but the test only measures fact-memorising skills, the student who had tried to improve his evaluation skills would surely be disappointed as the test did not measure what had been taught. If the assessment measures the student's ability to compare and review but the whole teaching and learning process only consists of memorising facts, this may cause low-ability students to answer questions which require him or her to compare as the entire learning process is made up of remembering facts.

Alignment between the three components (curriculum, teaching, learning and assessment) is important to enable the student's achievement to be measured more effectively. The step to build a constructive alignment should be interpreted into a specific and correct action. In actual fact, there is no need for the teacher to organize information in isolation using the curriculum as a standard document. The teacher should view the assessment action framework as a sort of 'satellite' and not as a 'magnifying glass' which places the educational elements in isolation and not integrated. The teacher should instead interpret the learning activities using the Curriculum Specifications Table to create assignments which would enable him or her to measure the student's cognitive, affective and psychomotor aspects. The teacher's skill in creating assignments and constructing precise instruments will enable him or her to measure the student's achievement in a thorough and holistic manner.

Teachers have been trained to utilize the Achievement Standard which relies on specific statements which can be rather unpredictable in the school assessment process. Explanation about the descriptors refer to aspects which the student should know and achieve based on the learning standards described in the Standard Curriculum for the particular subject [7] and this may not be easily interpreted into actions by the teachers. The teachers may not be able to explain the student's achievement based on the descriptors only. The descriptors are given in the form of statements like 'to state', 'to list' and a few others. Completing a task or action as stated in the standard curriculum does not indicate that the student has the ability or is able to finish the task according to the stated quality. The educator should therefore realize that each individual student is unique and has his or her own potential or talent. As such, the question which should be answered by the educator is how the student is able to fulfill a particular descriptor according to the desired quality. A student who has achieved Band 6 should fulfill all the descriptors required for one to achieve Band 6 in the subject [8]. Of course not every student would show the same quality of work although he or she has managed to complete the learning outcome or descriptor specified in Band 6. Perhaps the one aspect which has not been emphasized by the teacher is the construction of a suitable instrument for measuring the quality of a learning outcome or the student's level in fulfilling the required descriptor. The question which arises is whether the teachers who have implemented the school assessment are skilled or competent to produce suitable instruments to measure the desired behavior or learning outcomes.

The alignment of the student's learning objective with assessment activities is necessary so that the teacher may observe the behavior which reflects the achievement of particular learning objectives using suitable measurement instruments. The justification for the implementation and practicality of a specific teaching method should be in line with the learning and assessment objectives. The implication from the alignment of elements in curriculum and assessment is that the teacher should upgrade his or her competency in

using a variety of teaching and learning methods and to increase his or her creativity in constructing achievement tasks and measuring students' achievement. If the teacher has moved on to the constructivist view of teaching and learning practice and has really understood the implementation of curriculum and assessment in classroom teaching and learning, then perhaps there would be less dependence on the worksheets currently marketed as 'PBS evidence'. Detailed preparation for the teacher involves being prepared from the cognitive aspect, able to utilize knowledge in order to function, resource and teaching and learning activity preparation, desired behavior to be monitored at the end of the lesson and instruments which enable the teacher to measure the suitable behavior specified for the learning outcome. Even more vital is the depth of subject content which enables the teacher to implement student-focused activities in a more creative way.

X. RESEARCH IMPLICATIONS

All the mechanisms in the process of implementing school assessment require teachers who are skilled and competent [4]. Perhaps this is an aspect which has not been emphasised in the planning implementation for School-based Assessment which has been rather abrupt, prompting teachers who are in their comfort zone to fail to utilise student-centred teaching and learning approach. They too have been poorly equipped with the knowledge and modules to construct instruments which measure the student's achievement. Therefore the important components like assessment, learning objectives and teaching and learning strategies should be in line so that the students' learning objectives and the teaching objectives could be achieved. An issue to consider is giving the opportunity to the teacher to create and suggest suitable assessment tasks which still follow the standard. Teachers are more understanding towards the learning environment in the school and ultimately they are the ones to implement the tasks.

Coordination in terms of standard and support in instrument construction should be emphasised. Each reform may be more successful and effective if it is fully supported by the teachers. The bottom line is that the educator has not been assisted effectively to move on to a teaching and learning practice in line with assessment [2], [9], for example, the knowledge on the need to have school assessment, the need to be competent in producing a framework of assessment tasks suitable for teaching reflection, students' learning and achievement as well as assessments for the purpose of reporting students' achievement to other parties. There also arises the need to know why teachers should move on to the deductive approach, especially in terms of student-centred teaching and learning strategies, the application of various teaching and learning methods which enable the achievement of learning outcomes according to cognitive, cognitive, affective, psychomotor and social domains so that the students become skilled and competent in a holistic manner, to identify and implement a variety of assessment activities suitable with the learning objectives and the required curriculum standard but at the same time are practical and able to be implemented in line

with the school's learning environment, allowing the teachers to make transparent assessments with much accountability.

XI. CONCLUSION

The school assessment should be implemented on the basis of understanding and effort for the teacher to become a 'role model' administrator. Understanding the assessment is vital for each teacher in order for them to design assessment tasks across a range of fields, to practise justice and transparency, to utilise measurement instruments according to the correct domain and to be able to share the results with parents and external parties confidently. Therefore, administrators need to equip themselves with information and knowledge in order to help teacher and become effective leaders in school assessment.

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