

Determining Conceptions of Assessment among In-Service Secondary School Teachers

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Abstract

The implementation of assessments by teachers in the classroom and how students study are both influenced by their ideas about assessment, which is crucial to the teaching and learning process. Despite there are few numbers of conceptions of assessment studies, similar studies in the local context are scarce. The purpose of this quantitative study is to disclose secondary school teachers' conceptions of assessment. In the study, there are four variables under the conceptions of assessment which are an improvement, school accountability, student accountability, and irrelevance. Improvement, school accountability, student accountability, and irrelevance are the four elements that make up the study's conceptions of assessment. A total of 80 secondary school teachers in a single district of Selangor participated in this study. Based on the findings, the conception of improvement has the highest level of participant agreement. School accountability, on the other hand, received the lowest level of agreement. A MANOVA analysis was utilized to scrutinize any effects of years of teaching and gender differences on participants' perceptions. The findings of the analysis revealed that neither years of teaching nor gender made a significant difference in participants' conceptions of assessment. The results of this study is hoped to give a clearer picture to all stakeholders in education in regards to the teachers' conception of assessment especially in the secondary school assessment. It is suggested that future research could add a qualitative method to uphold a more significant result in the study of conceptions of assessment among school teachers.

Keywords: Teachers, Secondary School, Teacher Perceptions, Conceptions of Assessment.

Introduction

A shift toward a more constructivist and sociocultural approach to learning and assessment has become an important component of curriculum reform around the globe (Berry, 2011). There is widespread agreement that various forms of assessment have a significant impact on educational practice (Elwood & Klenowski, 2002); alluded to as a core component for learning outcomes (Brookhart & Bronowicz, 2003), it involves understanding motivation and self-

concept (Black & William, 2010). Stiggins (2005) highlighted the strategic value of assessment in education as a tool utilized by decision-makers to help schools carry out their new responsibilities through extensive testing.

The importance of assessment in the teaching and learning process has grown as all core supporters in the process, such as teachers, students, administrators, and parents, want to see solid outcomes of the entire process. It is impossible to overestimate the significance of putting the focus on assessment in the advancement of teaching and learning processes (Monteiro et al., 2021). The assessment enables teachers and students to draw conclusions from data and take action in response. As added by Yetkin & Zekiye (2020), It is used not only to assess the outcomes of students' learning, but also to enhance teaching and learning to check, and finally improve its efficiency. According to Zimmer & Matthews (2022), such acts may aid in making necessary changes to teaching and learning, or continue to present an insight into students' mastery or accomplishment at a single point in time.

According to Shing & Fai (2007), assessment has a significant impact on student learning. Therefore, it is used to improve the quality of learning and teaching (formative) as well as to assess learners' learning outcomes as a result of any learning programs (summative). In this context, assessment refers to all procedures used by teachers or students to assess themselves (Black & William, 1998), and it entails generalizing about what exists, what it is like, and how we might know about it (Knight, 2002, p. 279). Besides that, the study of teachers' conceptions of assessment is an important topic in the field of assessment research. Brown (2006, p. 9) defines assessment conceptions as people's perceptions of assessment based on personal experiences with and of assessment. Teachers' assessment conceptions are substantial because there is compelling evidence that these beliefs influence how educators assess their students' learning and outcomes (Brown, 2006; Margot & Kettler, 2019; Van der Kleij, 2019; Abduh, 2021).

Conceptions of Assessment

Assessment has at least three major purposes, according to researchers: improving teaching and learning, certifying students' learning, and holding schools and teachers accountable (Nisbet & Warren, 1999; Webb, 1992; Deneen & Brown, 2016). Brown (2006) came up with the framework of four major conceptions of assessment held by teachers;

- a) assessment is useful in improving teacher instruction and student learning by providing quality information for decision-making,
- b) assessment is about the accountability of students through certification processes,
- c) teachers or schools are made accountable through internal or external evaluations,
- d) and assessment is irrelevant or pernicious to the work of teachers and the life of students.

The major premise of this conception, according to Brown (2006), is that assessment informs the improvement of students' learning and improves the quality of teaching. There are two important caveats to this improvement; (a) Assessment describes or diagnoses the nature of a student's achievement or performance; and (b) Assessment information is of sufficient quality to be considered a valid, reliable, and accurate description of a student's performance. It should be acknowledged that the improvement conception is linked to the term 'formative,' whereas the accountability conception is linked to the term 'summative' (Azis, 2015; Dayal & Lingam, 2015). However, Scriven (1991, p. 28); Hattie & Smith (2020)

argued that both formative and summative assessment require similar levels of rigor and technical quality, or "the accuracy of the mid-course corrections" will be jeopardized.

The second conception of assessment is that it can be used to account for how a teacher, a school, or a system uses society's resources (Brown, 2006). The concept of school accountability necessitates the use of assessment to assess school performance outcomes and determine how well schools are doing on their sides. Brown (2002) defined school accountability as having two dimensions: the first is to indicate the quality of education in a school, and the second is to improve the quality of instruction.

Brown (2006) aligned the third conception of assessment with the premise that students are individually accountable for their learning through their assessment performance. In this regard, assessment is viewed as a tool for checking learners' learning outcomes via meaningful assessment techniques to hold students accountable so that they can make a decision on their levels and make subsequent decisions accordingly. The reason for holding students accountable for their learning is to ensure that they have met the requirements for advancement in teaching, training, education, or employment (Ingvarson, 2002).

The premise of Brown's (2006) fourth conception of assessment is that assessment, as defined as a formal, organized process in assessing student performance, has no legitimate place in teaching and learning. Since assessment is regarded as a formal and systematic procedure for evaluating learners' outcomes, it lacks a valid structure in the teaching and learning process (Brown, 2004). Assessment is also turned down because of its adverse effects on teacher autonomy and professionalism, as well as its ability to divert attention away from the true purpose of teaching, such as student learning.

Studies on Conception of Assessment

Assessment conception is a new area of research that aims to reveal assessment purposes. Several studies have already been conducted in various countries to examine the concept of assessment in various settings (Unal & Unal, 2016; Barnes, Fives & Dacey, 2017; Mustafa & Manaf, 2019; Pastore, 2020; Mirian & Zulnadi, 2020).

Unal & Unal (2016) compared teachers' conception of assessment and practices of classroom assessment about their years of teaching experience in one of the states in the USA. Purposive sampling is Elected involving 87 participants were all K-12 teachers seeking their master's degree in the Curriculum and Instruction program at a southern university. The following questionnaires were used in this study: (1) Conceptions of Assessment III (CoA-III) Inventory (Brown, 2006; Calveric, 2010) and (2) Classroom Assessment Practices Survey (Calveric, 2010; McMillan et al., 2002). The findings revealed that both new and experienced educators appreciated assessment in their lessons. The findings also revealed that both new and experienced teachers employ fair assessment practices in their lessons.

Daniels & Poth (2017) investigated the correlation between pre-service teachers' conceptions of assessment and their intended approaches to instruction and assessment. There are 344 mid-western research-intensive Canadian pre-service teachers involved in this study. Participants completed a slightly modified version of Brown's (2006) Teachers' Conceptions of Assessment scale (COAs). Data analysis was completed in three steps. Before the main regression analyses, the researchers conducted an exploratory factor analysis (EFA) with principal component extraction by applying an oblimin rotation to examine if mastery and performance approaches to instruction would emerge as distinct factors from mastery

and performance approaches to assessment. Approaches to assessment were also related to pre-service teachers' conceptions: beliefs that assessment holds students and schools accountable were positively related to a performance approach to assessment. In contrast, a belief that assessment improves teaching was positively related to a mastery approach to assessment and negatively to a performance approach.

Barnes, Fives & Dacey (2017) examined 179 K-12 teachers' conceptions of the purposes of assessment from a person-centered perspective. An exploratory factor analysis of teachers' responses to the Conceptions of Assessment Instrument yielded a three-factor model: assessment as valid for accountability, improves teaching and learning, and as irrelevant. The researchers also administered cluster analysis to determine emergent profiles of teachers concerning their conceptions of assessment based on their factor scores. The cluster analysis results provide evidence for and highlight that, teachers can and do, hold multiple beliefs about assessment simultaneously.

Mirian & Zulnaldi (2020) investigated the level of teachers' conceptions of assessment and comparison between gender and academic qualifications by applying the Conception of Assessment as their research framework. They administered the survey questionnaire to 352 Iranian lower secondary level mathematics teachers using the COA-III questionnaire. Results of the study found that math teachers exhibit moderate-level conceptions. Significant differences exist across the academic qualifications on Improvement and Irrelevance based on academic qualifications. Teachers with Ph.D. qualifications have more in Improvement and Irrelevance than those with bachelor's and master's degree holders. Only school accountability has a significant difference between male and female teachers; male teachers exhibit more in school accountability than female teachers.

Pastore (2020), investigated the Italian practical teachers' conceptions of assessment. The COA-III questionnaire has been administered to 417 teacher trainees at the end of the Didactics modules of a postgraduate certificate in two rounds of education courses. Descriptive analyses (i.e., means, standard deviations, reliability estimates) were calculated to determine teacher trainees' conceptions of assessment. A Multivariate Analysis of Variance (MANOVA test) has been also performed to examine if socio-demographic variables (e.g., years of experience or school grade) impact the four main factors of the COA-III model. The findings revealed that even though the Italian teacher trainees generally agreed with the assessment as a lever to improve teaching and learning, it is evident that they conceive assessment as misaligned with the accountability system.

Although the teachers' conception of assessment has already been studied in a variety of contexts, more research is required for more in-depth results (Yetkin & Zekiye, 2020). Initially, only a few studies were conducted in the Malaysian context. Second, almost all of the studies have focused on teachers' conceptions of assessment in primary school and focus on a certain subject area, and there is a need to investigate secondary school teachers' conceptions of assessment to further analyze their assessment purposes and behaviors based on their conceptions.

In this regard, the current study sought to describe secondary school teachers' conceptions of assessment in the local context. The current study was designed using a quantitative approach to answer the following research questions:

- (1) What is the secondary school teachers' conception of assessment?

(2) Is there any difference between years of teaching and conception of assessment among secondary school teachers?

(3) Is there any difference between male and female teachers' conception of assessment?

Methodology

The current study sought to uncover secondary school teachers' conceptions of assessment. Assessment-based activities, teaching, and learning processes can be changed, varied, or renewed by comprehending their perspectives.

Research Design

The study was based on a survey study and was designed around a cross-sectional study design. It was carried out using quantitative research methods. The data was collected using a 5-point Likert-type scale, and the results were quantitatively analyzed and interpreted.

Sample

This study was carried out at 4 public secondary schools in a district of Selangor. The study included 80 secondary school teachers with 25 male and 55 female teachers involved in this study. The sample also includes the teachers who have less than a year of teaching experience and more than 15 years of teaching experience as shown in Table 1.

Table 1

Demographic Information of the Participants

Gender	Frequency
Male	25
Female	55
Total	80
Years of Teaching	
Less than 1 year	32
1 – 5 years	9
6 – 10 years	18
11 – 15 years	14
More than 15 years	7
Total	80

Instrumentation

The TCoA inventory (Brown, 2006) has 27 items to assess four subscales: school accountability (3 items), student accountability (3 items), assessment improves education (12 items), and assessment is irrelevant (9 items). TCoA responses were measured on a 5-point Likert scale, ranging from (1) strongly disagree to (5) strongly agree. It is a valid measure of teachers' assessment conceptions and can be utilized in teacher professional development and assessment research programs (Brown, 2006). Brown conducted the TCoA inventory in a variety of nations, including New Zealand, Queensland (Australia), the Netherlands, Spain, China, Hong Kong, and India, to study teachers' perceptions of assessment within distinct cultural contexts (Barnes et al., 2017). Brown's New Zealand and Queensland studies demonstrated the validity of the TCoA inventory: New Zealand ($\chi^2= 841.02$; $df= 311$; $RMSEA=.057$; $TLI=.87$) and Queensland ($\chi^2= 1492.61$; $df= 311$; $RMSEA=.074$; $TLI=.80$). The TCoA inventory was used in this study to investigate teachers' conceptions on assessment.

Data Collection

The data was gathered in stages using convenient sampling. Participants' consent was obtained verbally and through a "Consent Form" attachment attached to the front page of each inventory online in Google Forms. Previously, permission was obtained from the department head and school principals for ethical conduct. The participants were then informed about the data collection process, the purpose of the study, and the importance of confidentiality.

Data Analysis Procedures

For further analysis, the data were entered into the Statistical Package for the Social Sciences (SPSS version 25) software program. First, descriptive and inferential statistics were used to analyze the data. Each item's mean value was computed and interpreted. The data was then examined using the Pearson product-moment correlation coefficient to determine the magnitude and direction of the relationships between each dependent variable. Following these steps, a multivariate analysis of variance (MANOVA) test was performed. For each independent variable, all MANOVA assumptions were investigated. The MANOVA analysis was then used to investigate gender and experience differences among participants. Next, ANOVA Bonferroni correction was done and a follow-up ANOVA test was further conducted to further investigate the difference among the variables.

Results

The variables between the teachers' years of teaching and their conceptions of assessments were compared in this study. Descriptive statistics, t-test, and MANOVA were used to analyze the survey data.

The conception of Assessment (COA)

Through descriptive statistics, the concepts of assessment held by the participants were examined. For each variable as shown in Table 2 below, the greater mean value denoted a higher level of agreement.

Table 2

Participants Overall Conceptions of Assessment

Conception of Assessment	N	M	SD
Improvement	80	4.07	.39
School Accountability	80	3.97	.51
Student Accountability	80	4.06	.48
Irrelevance	80	4.00	.40

As illustrated in Table 2, four levels of the conceptions of assessment were presented in the TCoA-III Scale. Improvement conception (M=4.07, SD=.40) had the highest rank among all variables and was followed by Student Accountability (M=4.06, SD=.48). Both Improvement and School Accountability conceptions had a high agreement level. Irrelevance conception was ranked third and still had a high agreement level (M=4.00, SD=.40). Conception of school accountability (M=3.97, SD=.51) held the lowest mean value of all variables.

The Difference between Years of Teaching on CoA

In order to examine how different conceptions of assessment have changed over the years of teaching, a one-way between-groups multivariate analysis of variance was conducted. Normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity were investigated as preliminary assumptions; no significant violations were found. It was seen that there was no significant difference between years of teaching on the combined dependent variables, $F = 1.53$, $p = .089$; Wilks Lambda = .724 as shown in Table 3.

Table 3

Wilks' Λ for Differences in Conceptions among Years of Teaching

	Wilks' Λ	F	p	Partial η^2
Years of Teaching	.724	1.53	.089	0.78

* $p = .05$

Table 4

MANOVA for Differences in Conceptions of Assessment Based on Years of Teaching

Conceptions	< 1 year	1 - 5 years	6 - 10 years	11 - 15 years	15 years >	F	p	Partial η^2
Improvement	4.01	3.98	4.00	4.20	4.34	1.65	.171	.081
Student Accountability	3.89	4.11	4.11	4.21	4.35	2.23	.073	.107
School Accountability	3.87	4.00	3.97	4.15	4.00	.760	.555	.039
Irrelevance	3.87	3.92	4.12	4.18	4.09	2.25	.071	.107

For each dependent variable in Table 4, a separate ANOVA was computed, and each ANOVA was examined at a Bonferroni adjusted threshold of .012. There were no significant differences between different years of teaching groups on improvement $F = 1.65$, $p = .171$, partial eta squared = .081, with teachers who are teaching for more than 15 years ($M = 4.34$) slightly higher than teachers who are teaching 11 - 15 years ($M = 4.20$) slightly higher than less than 1 year ($M = 4.01$) higher than 6 - 10 years ($M = 4.00$) and higher than 1 - 5 years ($M = 3.98$). There was also no significant difference in student accountability and years of teaching $F = 2.23$, $p = .073$, partial eta squared = .107. Also, there was no significant difference in school accountability $F = .760$, $p = .555$, partial eta squared = .039. Last but not least, there was also no significant difference in irrelevance $F = 2.25$, $p = .071$, partial eta squared = .107.

The Difference between Gender on CoA

To look at gender differences in assessment conceptions, a one-way between-groups multivariate analysis of variance was conducted. When the initial MANOVA hypotheses were tested, no significant violations were found. There was no significant difference between males and females on the combined dependent variables, $F = 1.39$, $p = .243$; Wilks Lambda = .931; partial eta2 = .069 as shown in Table 5.

Table 5
Wilks' Λ for Differences in Conceptions among Gender

	Wilks' Λ	F	p	Partial η^2
Gender	.931	1.39	.243	.069

* p =.05

Table 6
MANOVA for differences in conceptions of assessment based on gender

Conceptions	Male	Female	F	p	Partial η^2
Improvement	4.10	4.07	.172	.680	.002
Student Accountability	4.06	4.06	.001	.975	.000
School Accountability	3.87	4.01	1.25	.266	.016
Irrelevance	3.91	4.05	1.95	.166	.024

Each dependent variable underwent a separate ANOVA as depicted in Table 6, with each ANOVA tested at a Bonferroni adjusted level of .012. There was no significant difference between males and females on improvement, $F = .172$, $p = .680$, partial $\eta^2 = .002$, with males ($M = 4.10$) higher than females ($M = 4.07$). Also, there was no significant difference between males and females on student accountability conception, $F = .001$, $p = .975$, partial $\eta^2 = .000$, school accountability conception, $F = 1.25$, $p = .266$, partial $\eta^2 = .016$, and irrelevance conception, $F = 1.95$, $p = .166$, partial $\eta^2 = .024$.

Discussion and Conclusion

The primary goal of the current study was to learn more about how secondary school teachers conceptualize assessment and why it is done during the teaching and learning process. According to their years of teaching experience and gender disparities, the study also sought to reveal their views on the goals of assessment and any potential interactions between them. Through the use of descriptive statistics, the participants' conceptions of assessments; improvement, school and student accountability, and irrelevance were examined. Descriptive analysis indicated that improvement conception/purpose held the highest mean value ($M=4.07$) and participants believed that assessment should be used to improve the teaching and learning process and outcomes. According to Brown (2002), this conception involves not only criticizing students' independent learning but also elevating the value of instruction. In this sense, numerous earlier research produced findings that were comparable to those of the current study on improvement conception. For example, Brown, Choudary, & Dhamija (2015) participants endorsed most strongly the improvement purpose. Similarly, Yuce (2015) discovered that participants agreed with the conception of improvement to a moderate level. Brown & Hirschfeld (2008) posited that when students view assessment to be an opportunity to account for their own learning, their results are more likely to improve. In this regard, it is clear that teachers are willing to use assessment as a tool for improving the teaching and learning process.

Other than that, the conception of student accountability took the second stage, and participants also agreed that assessment is for student accountability ($M=4.06$). With a few exceptions, this result contradicted many research findings in the literature. Gelfand &

colleagues (2017) use the concept of 'felt accountability' (p. 802) to explain how individuals respond to the tightness-looseness of social and cultural norms, specifically the trade-offs involved in acting in relation to their expectation that their decisions and behaviors will be scrutinized and evaluated. In this regard, having an assessment for student accountability will empower the students' positivity in the teaching and learning process (Law, Geng & Li, 2019).

Irrelevance conception (M=4.00) had close acceptance rates to improvement and student accountability conceptions. School accountability (M=3.97), on the other hand, has been rated moderately agreed by the participants and had the lowest response rate among all the conceptions. Participants may believe that the assessment does not accurately measure their qualifications, which could account for the high response rate for improvement and the low response rate for school accountability.

Through a multivariate test, differences in the participants' years of teaching experience were investigated with regard to their conceptions of assessment. Statistical results showed no significant difference in years of teaching among secondary school teachers' conceptions of assessment variables. The results indicated that conceptions of assessment do not affect by teachers' teaching experiences. This result is contradicting Moinvaziiri (2015) who discovered a significant difference in teaching experience and conceptions of assessment. Also, Moinvaziiri (2015) found that significant relationship between teaching experience and school accountability ($r=.16$, $p=.05$). However, the result from the current study is in line with Mahasneh & Al-Zou'bi (2021) that who found no significant difference in teaching experience in the teachers' conceptions of assessment variables.

In addition, results of the multivariate test of variance revealed that there was no statistically significant difference in the concepts of assessment between males and females (Wilks' Lambda=.931, $p=.243$). In a study that produced similar findings, Yetkin & Zekiye (2020) discovered that there was statistically no difference between males and females. According to descriptive results, males and females had slightly different values for their assessment conceptions, but their agreement levels for each conception have been the same. With a moderate level of agreement, both males and females were inclined to see assessment as an instrument for improving teaching and learning. As said by Carpenter, Witherby & Tauber (2020), whatever gender teachers are, they value the role of assessment, which improves teaching and student learning. Based on the findings, it is clear that participants, regardless of gender, preferred assessment as a tool for improving and vital for their learning. This might be due to the fact that both males and females engaged in learning rather than how assessments were conducted.

Limitations and Directions for Future Research

There are certain limitations in the design of this study that could affect the results. To begin, the primary method of data collecting in this study was to distribute questionnaires to teachers in person for collection within one or two weeks. It was deemed problematic since respondents failed to properly ask for clarification, despite the fact that it allowed them enough time to contemplate and react to the questionnaire given. As a result, the teachers' exact comprehension of the questionnaire items cannot be guaranteed. This issue could jeopardize the reliability of responses. Secondly, this quantitative study could not provide a thick explanation as to why a range of teachers' demographic could not significantly explain the level of TCoA. Perhaps the problem is linked to the sample size, which some may deem insufficient. Therefore, a larger sample size mixed-method study aimed at delving into TCoA

would also address this limitation and provide a better explanation. Finally, rather than including only one group of teachers from secondary schools as the study sample, participants from different states, and districts, as well as subject majors taught, can aid in understanding different reasons and motives toward assessment practices.

Disclosure Statement

No potential conflict of interest was reported by the author(s).

Notes on Contributors

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