

# **Economics Teachers' Conceptions of Classroom Assessment: A Study of Senior High Schools in the Central and Ashanti Regions of Ghana**

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## **Abstract**

*Assessment literacy is part of the Economics teachers' professional competence, yet little attention in the form of research has been undertaken in this area of study in Ghana. This study therefore explored Senior High School (SHS) Economics teachers' conceptions of the purposes for undertaking classroom assessment. In specific terms, the study investigated Economics teachers' understanding of the various motives that inform their assessment practices. The study also examined the influence of the Economics teachers' demographic variables such as age, gender, and teaching experience on their conceptions of classroom assessment. It further assessed the influence of formal training in assessment on the teachers' conceptions of the construct. The study was a descriptive type which employed the survey method. Respondents of this study comprised 301 Senior High School Economics teachers drawn from the Central and Ashanti Regions of Ghana. The participants were made up of 213 male and 88 female teachers. A 56-item version of Brown's Teachers' Conceptions of Assessment (TCoA) inventory scale was adopted as the questionnaire for this study. Using a test-retest procedure of two-week interval, the TCoA which also made provisions for the demographic data of respondents on a different section, was administered on 36 Economics teachers. A reliability index of .813 was obtained. The data were analyzed using mean, t-test, and one-way Analysis of Variance (ANOVA) statistical techniques. The findings of the study showed that a majority of the Economics teachers (mean score = 3.01) consented to the idea that classroom assessment leads to improvement in teaching and learning, as well as ensuring school accountability (mean score = 3.27). The study also found that gender and age did not influence teachers' conception of assessment. It was recommended among other issues that professional learning communities be organized for experienced and less experienced Economics teachers to enable them exchange ideas on the various purposes of classroom assessment.*

**Keywords:** *Assessment, Economics Teachers, Conceptions, Linear Regression, Ghana*

## **Introduction**

Teaching is inextricably linked to assessment. Assessment is any act of interpreting information about student performance, collected through any of a multitude of means or practices (Brown, 2011). On their

part, Hattie and Timperley (2007) consider assessment as any activity employed to gauge students' level of proficiency. By implication, assessment is an integral part of any instructional process. It establishes where learners are at present and what level they have achieved; it gives learners feedback on their learning; it diagnoses learners' needs for further development; and, it enables the planning of curricular, materials, and activities (Alderson, 2005). Curriculum, instruction, and assessment are the three fundamental components of education (Orlando, 2008). Chen (2010) describes these elements as the "three legs of the classroom stool" and cautions that each leg must be equally strong in order for the "stool" to function properly, balance and be supportive. Jimaa (2011), however, observes that habitually, how and what to teach weighs heavier on the teachers' mind than how he or she will assess it. As a result, the assessment 'leg' of the classroom stool is often the weakest of the three, the least understood and the least effectively implemented (Jimaa, 2011).

In view of the powerful influence of assessment on learning outcomes in Economics, teacher educators in Economics have encouraged the integration of assessment with the teaching and learning of the subject (Rebeck & Asarta, 2012). The role of Economics teachers in ensuring that assessment leads to the effective teaching and learning of the subject cannot be over-emphasized. Economics teachers are expected to play a dual role of facilitating students' learning, and of implementing classroom assessment in a manner that enhances meaningful learning outcomes. Their role in assessment includes the whole process of constructing and administering assessment tasks to interpreting the results generated (Becker & Watts, 2001).

According to Xu and Brown (2016), teachers' conceptions of assessment denote the belief systems that teachers have about the nature and purposes of assessment, and that encompass their cognitive and affective response. The notion of *belief* is used to refer to those basic statements about different aspects of reality that any person might accept as the truth at different times of his/her life, although they do not have to constitute an objective truth at all (Goodenough, 1990). In other words, although resistant to change, beliefs are not immutable throughout life; on the contrary, they are subject to influences from the social context in which the individual operates. At the same time, beliefs do not float loose in our minds either: they are organized internally, building up conceptions. That is, a person's conception is an organized system of beliefs this person holds (Remesal, 2011). The term *conception* initially introduced by Thompson (1992), refers to "general mental structure, encompassing beliefs, meanings, concepts, propositions, rules, mental images, preferences, and the like" (p.42). In other words, conceptions integrate knowledge and beliefs, beliefs representing a subcategory of the conceptions held. In this study, *beliefs* and *conceptions* are therefore used interchangeably.

A growing body of research suggests that in the practice of assessment, how teachers conceptualise assessment is at least as important as the above characteristics. Teachers' conception about the purposes of assessment influences the implementation of assessment practices at all educational levels (Brookhart, 2011; Deneen & Boud, 2014; Barnes, Fives, & Dacey, 2015; Fulmer, Lee, & Tan, 2015). Positive conceptions of assessment (for example, assessment should enhance students' learning) have shown to precipitate beneficial assessment practices; negative conceptions of assessment (for example, assessment is bad for students or irrelevant to learning) may play a significant role in teachers resisting or subverting

assessment policies and intended practices (Brown, 2008; Deneen, & Boud, 2014). The utility of any teacher education programme is built on the presumption of enhancing practice; thus, it is essential to understand the relationship of teachers' conceptions of assessment to assessment literacy and a teacher education approach aimed at enhancing that literacy. Assessment literacy has been defined as the ability to develop assessment that transform learning goals into assessment activities that accurately reflect student understanding and achievement (Mertler & Campbell, 2005; Xu & Brown, 2016).

There are two forms of assessment; formative and summative assessments. Formative assessment is the systematic process of continuously gathering evidence about learning (Heritage, 2007). Heritage suggests that formative assessment, also known as assessment for learning, utilizes data to accurately prescribe or 'measure' a student's level of learning and to alter lessons to assist students with attaining an identified learning goal (Hargreaves, 2007; Popham, 2008). Summative assessment also known as assessment of learning (Black & William, 1998), is a means for documenting the nature and level of students' achievement at various times throughout their academic career (Hill, 2000). Within the summative assessment realm, researchers have identified three main purposes: to report student achievement and progress, to summarize achievement for the purpose of selection and qualification, and to offer utilized data for determining teacher, school, and system effectiveness (Brown, 2003; Hill, 2000).

With new insights into teaching and learning, teachers are often challenged to change their classroom practices. Changes in instruction require changes in assessment practices as well (Scott, 2015). In such a changing landscape, it is important that teachers' understanding of assessment be taken into consideration.

## **Review of Related Literature**

Research shows that teachers' conceptions of assessment affect their teaching and assessment practices (Leung, 2004; Shohamy, 2004; Brown, 2011). The need to therefore have a better understanding of teachers' conceptions of assessment becomes imperative. In addition, the study of teachers' conceptions of assessment is important because evidence exists that teachers' conceptions of teaching, learning, and curricular influence strongly how they teach and what students learn or achieve (Pajares, 1992; Thompson, 1992; Calderhead, 1996). Sharing similar opinions, Brown (2004) asserts that all pedagogical acts, including teachers' perceptions and evaluations of student behavior and performance (i.e., assessment), are affected by the conceptions teachers have about many educational artefacts, such as teaching, learning, assessment, curriculum, and teacher efficacy. It is therefore critical that such conceptions and the relationships among and between each other are made explicit and visible. This is especially so if it is considered prudent or advisable that teachers' conceptions be changed, which, of course, is the point of professional development activities (Borko, Mayfield, Marion, Flexer, & Cumbo, 1997). The preceding discourse clearly points to the fact that a study of teachers' conceptions is a critical issue in assessment research. Although this area of research has wide-ranging implications for policy and practice in Economics education, little is known about the in-service Economics teachers' conceptions regarding the different purposes of assessment.

In the opinion of Brown (2003), the conceptions teachers have about the process and purpose of assessment, and the nature of teaching and learning affect all pedagogical acts. In his research on teachers' beliefs about

assessment, Brown (2002, 2003) found that teachers hold one of four major conceptions of assessment: (a) it is useful because it can provide information for improving instruction; (b) it is necessary for making students accountable; (c) it is necessary for making institutions accountable; (d) it is irrelevant to teaching and learning. The improvement conception emphasizes the use of information to produce valid changes in teaching and learning (Brown, 2008). Teachers who view assessment in this way believe that assessment should improve students' learning and the quality of teaching (Black & William, 1998; Black, Harrison, Lee, Marshall, & William, 2002). By implication, this conception expects teachers to compose valid, reliable and accurate descriptions of students' performance (Brown, 2002). Different strategies and techniques that are used in teachers' practice include informal teacher-based intuitive judgement and formal assessment tools. These techniques function to 'identify the content and process of student learning with the explicit goal of improving the quality and accuracy of instruction and enabling students to improve their own learning (Harris & Brown, 2008, p. 2).

Brown's school accountability conception is used to account for the teacher's schools, or a system's use of society's resources. This assessment prescribes consequences for reaching or not reaching required standards (Firestone, Mayrowetz, & Fairman, 1998). It also demonstrates whether schools or teachers are doing a good job (Butterfield, William, & Marr, 1999). On account of this, teachers who perceive assessment as a way of holding schools accountable emphasize two rationales: demonstrating school and teacher quality instruction (Smith & Fey, 2000), and improving the quality of instruction (Linn, 2000). The student accountability conception holds students individually accountable for their learning. Grading and scoring, criterion reference tests, awarding certificates or qualification-based performance are examples of this assessment in practice (Harris, & Brown, 2008). To accomplish the purpose of student accountability, certification of attainment is needed, to reveal that this conception is more about placing students through high stakes consequences such as graduation, selection or public reporting (Guthrie, 2002).

The conception of irrelevance is held when teachers reject assessment for a number of reasons. Under these conceptions, assessment is seen to be separated from the teaching and learning process (Harlen, 1998). Teachers with irrelevant conceptions might feel that assessment negatively affects their autonomy and professionalism and narrows the purpose of learning (Smith, 1991). Teachers are also likely to think that assessment is less valid and unreliable (Brown, 2002).

Extant research literature on classroom assessment points to the idea that teachers' conceptions in respect of the purposes and usefulness of assessment are influenced by a number of independent variables, notably the teaching experience of the teacher, the teacher's exposure to professional training in assessment, the gender and age of the teacher, among others. Most commonly, studies identify experienced teachers as those who have approximately 5 years or more of classroom experience (Gatbonton, 1999; Tsui, 2005). Highly experienced teachers are able to observe a learning environment and discern critical cues that provide insight for informed and intuitive decisions (Woorons, 2001). Teachers with less experience see the same cues, but simply fail to recognize their significance for teaching and learning (Schempp & Johnson, 2006).

In an investigation of classroom assessment beliefs and practices of 246 preparatory science teachers from 112 schools, Alsarimi (2000) found no significant difference in teachers' beliefs based on gender and years

of teaching experience. In Turkey, Yetkin (2018) investigated prospective English teachers' conceptions of assessment in the Turkish context. The study found that the notion of improvement, school accountability and student accountability conceptions correlated positively. There was no statistically significant difference in teachers' conceptions based on gender, age and teaching experience. Contrastingly, Sahikarakas (2012) revealed that the perception of Language teachers differed according to years of teaching experience. The more experienced teachers perceived assessment in a negative way than the less experienced teachers. Explaining the differences in perception, Sahinkarakas opined that experienced teachers value themselves too highly to the extent that they do not need to have evidence of their teaching effectiveness.

Brown and Gao (2015) discovered differences in conception with respect to teachers' gender and teaching experience. They found that male teachers and teachers with twenty or more years of experience agreed with the belief that assessment should be used to inspect and control the school, teachers and students in order to promote better teaching and learning. On her part, Ndalichako (2015) also found that more female teachers, relative to their male counterparts, demonstrated a favourable perception of classroom assessment. Ndalichako discovered a significant statistical difference between female and male teachers regarding the use of assessment to facilitate and support teaching.

Examining sixth grade through eighth grade teachers' beliefs (conception) about assessment and other related practices, Benson (2014) found that gender had no impact on teachers' conceptions of assessment. Benson's study revealed that male and female teachers held similar beliefs about assessment. In terms of teaching experience, this study further found that younger teachers (25 to 30 years) and older teachers (above 43 years) held similar beliefs with regards to the irrelevance conception of assessment.

Investigating the impacts of EFL teachers' age, educational background, instructional experience and gender on their beliefs about formative assessment, Mehrgan, Hayati and Alavi (2017) found no statistically significant effect of age on teachers' belief about formative assessment. The results of their study also demonstrated that EFL teachers' teaching experience had a statistically significant influence on their beliefs about formative assessment. Additionally, their findings further revealed that gender had no influence on the teachers' beliefs about formative assessment. In an earlier study similar to that of Mehrgan *et al*, Chan (2006) examined EFL teachers' beliefs and practices of multiple assessment. His study showed that the relationship between teachers' beliefs and age was not statistically significant. By implication, teachers' age did not significantly influence their beliefs about multiple assessment. The study rather showed a significant relationship between teachers' beliefs and years of teaching experience.

The findings of Izci and Caliskan (2017) showed that even if teachers attended an assessment course and gained detailed knowledge of assessment, their conceptions of assessment remained positive, except the irrelevance conception. Similar studies (Brown & Hirschfeld, 2008; Levy-Vered & Alhija, 2015) have found that attending an assessment course or having more training in assessment did not improve teachers' conceptions of assessment. However, there are studies that suggest that teachers' conception of assessment developed after receiving periodic training in assessment (DeLuca, Chavez & Cao, 2013; Smith, Hill, Cowie & Gilmore, 2014). Interestingly, the findings of the study also showed that after teachers had attended the course on assessment, their irrelevance conception of assessment improved significantly.

The reviewed literature clearly shows that teachers have different conceptions about the purposes of classroom assessment. The popular conceptions are; improvement in teaching and learning, holding schools and students accountable, and the notion of irrelevance. As shown in the review, teachers' age, gender and years of teaching experience are factors that are capable of influencing conceptions about classroom assessment. The literature has also shown that in some cases, professional training in assessment procedures can improve teachers' conceptions of the purposes of classroom assessment.

## **Statement of the Problem**

Although much research has been conducted on teachers' assessment and grading practices (Amedahe, 1989; Anhwere, 2009; McMillan, 2001; McMillan, Myran, & Workman, 2002; Stecher & Barron, 2001), these investigations have not specifically focused on the conceptions, purposes, or intentions teachers have for their practices, particularly within the Ghanaian educational context. It could be that such practices that have been investigated are intended to improve student learning, or it may be that the same practices are carried out in order to fulfil administrative or accountability goals (Brown, Lake, & Matters, 2011). Relative to assessment practices, studies that gauge teachers' conceptualization of the purposes of classroom assessment are virtually limited.

It has also been established that teachers' assessment practices are largely influenced by the subjects they teach (Zhang & Burry-Stock, 2003). Closely related to this finding is the idea that teachers' assessment practices reflect their conceptions of classroom assessment (Harris & Brown, 2009; Dayal & Lingam, 2015). Teachers' conceptions of assessment are also influenced by many factors, one of which is the subject he or she teaches (Vandeyar & Killen, 2007; Duncan & Noonan, 2007). On their part, Bright and Joyner (1998) concede that teachers' view about the nature of the subjects they handle could also influence their conceptions about classroom assessment. However, generally there is acute paucity of research into the conceptions of subject-specific teachers particularly Economics teachers, with respect to classroom assessment. This study was therefore designed to fill the gap in research concerning the Economics teachers' conception about classroom assessment.

Different teaching and learning contexts, with varying levels of opportunities and constraints, influence teachers' conceptions and beliefs about classroom assessment (Nichols & Harris, 2016). Studies on teachers' conception of assessment have been conducted in different teaching and learning contexts. In Ghana, such studies are relatively limited. On the basis of assumptions that conceptions are dynamic, contextual, and best revealed through in-depth investigation (Brown, 2002), this paper sought to meticulously explore the conceptions senior high school Economics teachers hold about classroom assessment. This study therefore augments the wealth of knowledge already accumulated in this area of research conducted in other teaching and learning contexts.

## **Purpose of the Study**

The purpose of this study was to examine Senior High School (SHS) Economics teachers' conceptions of classroom assessment in the Central and Ashanti Regions of Ghana. In specific terms, the study is intended to:

- i. ascertain SHS Economics teachers' conceptions of classroom assessment in the Central and Ashanti Regions of Ghana.
- ii. find out how SHS Economics teachers' conceptions of classroom assessment differ based on teaching experience, gender and age.
- iii. determine how training in assessment influences the conceptions SHS Economics teachers have about classroom assessment.

## **Research Question**

The main research question for the study was: What are the conceptions of SHS Economics teachers in the Central and Ashanti Regions of Ghana about classroom assessment?

## **Research Hypotheses**

The following research hypotheses guided the study.

1.  $H_0$ : There is no significant difference in the conceptions of SHS Economics teachers about classroom assessment based on;

- i. teaching experience,
- ii. gender
- iii. age

$H_1$ : There is a significant difference in the conceptions of SHS Economics teachers about classroom assessment based on:

- i. teaching experience,
- ii. gender
- iii. age

2.  $H_0$ : Professional training in classroom assessment has no significant influence on the conceptions SHS Economics teachers have about assessment.

$H_1$ : Professional training in classroom assessment does influence the conceptions Economics teachers have about assessment.

## **Methodology**

### **Research Design**

The research design adopted for this study was the descriptive survey method. Survey research design enables a researcher to obtain the necessary data on the variables from a representative sample of the

population in order to describe the situation as it exists. The choice of this design was further informed by the opinions of Best (1981) and Akinkuolie (1989) that it typically utilizes a questionnaire to determine the opinions, perspectives, conceptions, beliefs, facts, attitudes, preferences, and perceptions of persons of interest to the researcher. This design also allows a researcher to collect data and describe it in a systematic manner (Nworgu, 1991). The descriptive survey method was therefore considered appropriate for this study since it is relevant in investigating the conceptions of senior high school Economics teachers about the purposes of classroom assessment. The appropriateness of this design also stemmed from the fact that it dealt with a relatively large sample size from a vast area of study (Oga, 2013).

## **Population**

The population of the study comprised all in-service SHS Economics teachers in Ghana. However, the accessible population consisted of the 301 SHS Economics teachers in the Central and Ashanti Regions of Ghana (GES, 2017). The choice of the two regions stems from the fact that these two regions have highly endowed senior high schools which attract teachers with varied academic orientations and backgrounds. Selecting teachers from these two regions gave the researchers a large group of teachers with different views and perspectives on the topic under study. In all, there are 283 senior high schools (both public and private) in the two regions: Ashanti Region has 178 SHS's, while Central Region has 105 (MOE, 2017).

## **Census Method**

The study employed the census method to select all Economics teachers in all the senior high schools in the two regions. Economics is an optional subject of study in the Ghanaian senior high schools. Unlike teachers of core subjects like Mathematics, Science, English and Social Studies, Economics teachers are relatively limited in number. Since the researchers had intended to employ an acceptably large sample size for the study, the census method was found appropriate for that purpose. This method was to enable the researchers collate views from all, or a majority of the Economics teachers in the regions. The total number of teachers used for the study was 301.

## **Research Instrument**

The main instrument used for the study was the questionnaire. A 56-item Teachers' Conceptions of Assessment (COA-III) questionnaire developed by Brown (2004) was adapted for this study. Some of the items in this instrument were slightly modified to suit the Ghanaian educational context. The first part of the questionnaire sought information from the teachers on their bio- data in terms of age, gender, years of teaching, while the second part dealt with the teachers' conception of assessment. The conceptions of the teachers were grouped according to their agreement or disagreement with four purposes to which assessment may be put, specifically, (a) improvement of teaching and learning, (b) school accountability, (c) student accountability, and (d) treating assessment as irrelevant (Brown, 2004). The instrument was pilot tested in four senior high schools in the Western Region and a reliability test was carried out to



measure its internal consistency. A Cronbach alpha of .813 for the instrument reliability indicates that the degree of internal consistency of the instrument is high.

**Procedure for Data Collection**

The researchers recruited twenty (20) research assistants for the entire exercise. They were given a thorough orientation on all aspects of the instrument, as well as ethics of research. Ten (10) of these research assistants were assigned to each of the two (2) regions. Each research assistant was given a photo-copy of a letter of introduction written by the researchers. The research assistants personally visited all the sampled schools and administered the instrument. A 2-day interval was given to respondents to fill and complete the questionnaire.

**Data Analysis Procedure**

Data collected were coded and refined with the help of SPSS (version 23) and Stata 15. Research question one was analysed using means and standard deviations. Hypothesis One was analysed using independent samples t-test (gender) and ANOVA (age, years of teaching). This is because gender was categorized into two (male and female) while age (below 25, 25 – 40, above 40) and years of experience (below 3 years, 3 – 6 years, 7 years and above) were put in three categories. Research Hypothesis Two was analysed using simple linear regression. This is because the researcher wanted to estimate the influence of professional training in classroom assessment on the conceptions Economics teachers have about assessment. Professional training in classroom assessment was treated as a categorical variable (with a YES and NO response).

**Presentation of Results**

**Research Question 1:** *What are the conceptions of SHS Economics teachers in the Central and Ashanti regions of Ghana about classroom assessment?*

According to Brown (2004), there are basically four conceptions of assessment. These are: improvement in teaching and learning, school accountability, student accountability and treating assessment as irrelevant. Tables 1 to 4 present the conceptions of Economics teachers in relation to assessment using the Brown’s model. The mean ranges for the responses were given as: *Indifferent = 0; Strongly Disagree = 1; Disagree = 2; Agree = 3; Strongly Agree = 4*

Table 1 presented the results from the analysis of data provided by the respondents on the conception that assessment leads to improvement in teaching and learning.

**Table 1: Assessment Leads to Improvement in Teaching and Learning**

S/N	Statement	Mean	SD
1	Is a way to determine how much students have learned from teaching.	3.35	.65
2	Establishes what students have learned.	3.20	.68
3	Identifies student’s strength and weaknesses.	3.31	.77

4	Measures students higher order thinking skills.	3.12	.65
5	Identifies how students think.	2.82	.77
6	Answers in assignment show what goes on in students' mind.	2.77	.81
7	Provides feedback to students about their performance.	3.51	.52
8	Helps students improve their learning.	3.39	.73
9	Feeds back to students learning needs.	3.16	.76
10	Is an engaging and enjoyable experience to students.	2.48	.70
11	Is a positive force for improving social climate in class.	2.58	.90
12	Makes students do their best.	3.14	.90
13	It is appropriate and beneficial to students.	3.08	.63
14	Is integrated with teaching practice.	3.05	.69
15	Information modifies ongoing teaching of students	3.20	.66
16	Allows different students to get different instructions	2.93	1.15
17	Changes the way teachers teach	3.38	.63
18	Influences the way teachers think	2.99	.80
19	Information is collected and used during teaching	3.17	.60
20	Results are trustworthy	2.66	.82
21	Results are consistent	2.37	.76
22	Results can be depended on	2.82	.61
23	Results predicts future student's performance	2.95	.72
24	Is objective	2.87	.68
<b>GRAND MEAN</b>		<b>3.01</b>	<b>.73</b>

Source: Field work, 2018

As clearly shown in Table 1, the highest mean value recorded was ( $M = 3.51$ ,  $SD = .52$ ), and is in relation to the conception of assessment to the effect that it “*provides feedback to students about their performance*”. This implies that a majority of the respondents strongly agreed that assessment gives the needed feedback on students’ performance. However, respondents disagreed with the conception that assessment “Results are consistent” ( $M = 2.37$ ,  $SD = .76$ ).

On the whole, the Economics teachers acknowledged the conception that assessment leads to improvement in teaching and learning. This is shown in the result of a Grand Mean of 3.01. However, an average standard deviation of .73 implies that responses are widely spread from the grand mean.

Table 2 presents results on respondents’ conception of assessment as regards ensuring school accountability. The Economics teachers were offered with six items to rate in terms of their conceptions of assessment as it relates to school accountability. The summary of the results is shown in Table 2.

**Table 2: Assessment Ensures School Accountability**

S/N	Statement	Mean	SD
1	Provides information on how well schools are doing.	3.27	.62
2	Is a good way to evaluate a school.	3.21	.70
3	Is an accurate indicator of a school's quality.	2.92	.63
4	Keeps schools honest and up-to scratch.	2.87	.71
5	Measures the worth or quality of schools.	3.05	.66
6	Shows the value schools add to students' learning.	3.21	.63
<b>GRAND MEAN</b>		<b>3.09</b>	<b>.66</b>

Source: Field work, 2018

From Table 2, the conception that assessment “provides information on how well schools are doing” recorded ( $M = 3.27$ ,  $SD = .62$ ) while the conception that assessment “keeps schools honest and up-to scratch” recorded ( $M = 2.87$ ,  $SD = .71$ ). These results give an idea of the nature of conceptions held by Economics teachers on assessment. The results indicate that the respondents agreed to that conception. A Grand Mean of 3.09 implies that the Economics teachers held a conception that one of the effective ways to ensure school accountability is through assessment. However, an average standard deviation of .66 indicated a less spread as compared to the responses for Table 1.

Table 3 presents results that relate to the conception of assessment as ensuring student accountability. The summary of the results is presented in Table 3.

**Table 3: Assessment Ensures Student Accountability**

S/N	Statement	Mean	SD
1	Is assigning a grade or level to students' work.	3.16	.76
2	Places students into categories.	3.32	.64
3	Determines if students' meet qualification standards.	3.25	.65
4	Is checking off progress against achievement objectives.	3.18	.59
5	Is comparing student work against set criteria.	3.20	.66
6	Is completing checklist.	2.69	.95
7	Select students for future education or employment opportunities.	3.11	.82
<b>GRAND MEAN</b>		<b>3.13</b>	<b>.72</b>

Source: Field work, 2018

From Table 3, it can be observed that the highest mean value recorded was on the conception of assessment that it places students into categories ( $M = 3.32$ ,  $SD = .64$ ) while the lowest mean value was on the conception that assessment “is completing checklist” ( $M = 2.69$ ,  $SD = .95$ ). Furthermore, a Grand Mean of 3.13 was recorded. This implies that most of the respondents agreed that assessment ensures student accountability. An average standard deviation of .72 indicates that the responses are scattered around the mean.

Table 4 presents the results from the analysis of data provided by the respondents on the conception that assessment that is irrelevant.

**Table 4: Treating Assessment as Irrelevant**

S/N	Statement	Mean	SD
1	Forces teachers to teach in a way against their beliefs.	2.37	.86
2	Interferes with teaching.	2.34	.79
3	Is unfair to students.	2.22	.83
4	Teachers are over-assessing.	2.30	.90
5	Teachers pay attention to assessment only when stakes are high.	2.44	.83
6	Teachers conduct assessment but make little use of the results.	2.62	.88
7	Results are filed and ignored.	2.44	.97
8	Teachers ignore assessment information even if they collect it.	2.46	.89
9	Has little impact on teaching.	2.22	.88
10	Is value-less.	1.95	.83
11	Results should be treated cautiously because of measurement error.	2.84	.77
12	Teachers should account for error and imprecision in all assessments.	2.66	.93
13	Is an imprecise process.	2.43	.92
<b>GRAND MEAN</b>		<b>2.41</b>	<b>.87</b>

Source: Field work, 2018

Table 4 sought respondents' view on the conception that assessment is irrelevant. A Grand Mean of 2.41 suggested that, the Economics teachers generally disagree that they treat assessment as irrelevant; an average standard deviation of .87 suggests that the responses are scattered around the mean.

### Research Hypothesis One

*H<sub>0</sub>: There is no significant difference in the conceptions of SHS Economics teachers about classroom assessment based on;*

- iv. *teaching experience,*
- v. *gender*
- vi. *age*

*H<sub>1</sub>: There is a significant difference in the conceptions of SHS Economics teachers about classroom assessment based on:*

- iv. *teaching experience,*
- v. *gender*
- vi. *age*

Table 5 presents a summary of the results in terms for the hypothesis that, there is no significant difference between the conceptions of Economics teachers about classroom assessment based on gender of teachers.

**Table 5: Difference in Economics Teachers’ Conceptions of Assessment Based on Gender**

	Gender	n	M	SD	t	df	ρ
<b>Conceptions on Assessment</b>	Male	213	145.16	16.26	1.394	282	.164
	Female	88	142.39	16.10			

\*Significance level .05

From Table 5, it seems that there is a difference in terms of the mean values for the male and female students with the mean of the males exceeding that of the females by 2.77. However, to test whether the difference in the mean values was statistically significant, an independent t-test was used. First, the Levene’s Test for Equality of variances indicated that the variances for the two groups were equal ( $F = 0.175, .164 > .05$ ), and therefore a test for equal variances was used. The mean value of male Economics teachers’ conception of assessment ( $M = 145.16, SD = 16.26$ ) is not significantly higher ( $t = 1.394, df = 282, .164 > .05$ ) than that of the female Economics teachers ( $M = 142.39, SD = 16.10$ ). Therefore, the null hypothesis is sustained.

Table 6 presents a summary of the results in terms of the hypothesis that, there is no significant difference between the conceptions of Economics teachers about classroom assessment based on age of teachers.

**Table 6: Difference in Economics Teachers’ Conceptions of Assessment Based on Age**

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2164.076	3	721.359	2.791	.061
Within Groups	72374.611	280	258.481		
Total	74538.687	283			

\*Significance level .05

From Table 6, it can be said that there is no difference in conception on assessment of economics students across age groups. This implies that, the age of an economics teacher does not affect his or her conception on assessment.

Table 7 presents a summary of the results in terms for the hypothesis that, there is no significant difference between the conceptions of Economics teachers about classroom assessment based on the number of years of teaching experience.

**Table 7: Difference in Economics Teachers’ Conceptions of Assessment Based on Years of Teaching Experience**

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6091.716	2	3045.858	12.504	.000*

Within Groups	68446.971	281	243.584
Total	74538.687	283	

\*Significance level .05

The results from Table 7 indicates that there is a difference in the conceptions of assessment held by the Economics teachers based on years of teaching experience ( $F = 12.504$ ;  $df = 2, 281$ ;  $sig < 0.05$ ). A post-hoc analysis was carried out to find out where the differences in the conceptions are. Table 8 presents a summary of the post-hoc analysis in terms of the difference in the conceptions of assessment demonstrated by Economics teachers based on years of teaching experience.

**Table 8: Multiple Comparison**

	(I) Years of Teaching Experience	(J) Years of Teaching Experience	Mean Difference (I-J)	Std. Error	Sig.
Tukey HSD	Below 3 years	3 - 6 years	-9.95238*	2.75512	.001*
		7 years and above	-14.22597*	2.84562	.000*
	3 - 6 years	Below 3 years	9.95238*	2.75512	.0018
		7 years and above	-4.27358	2.02213	.089
	7 years and above	Below 3 years	14.22597*	2.84562	.000*
		3 - 6 years	4.27358	2.02213	.089

\*Significance level .05

The post hoc test of Turkey’s HSD indicates that there is a significant difference between teachers with 3 – 6 years of teaching and those who have taught for below 3 years. Also, those who have 7 years and above have a different conception on assessment as compared to those who have been teaching for below 3 years. The difference is significant. However, the difference between those with 3 – 6 years and 7 years and above teaching experiences is not significant.

**Research Hypothesis Two**

*H<sub>0</sub>: Professional training in assessment procedure does not influence Economics teachers’ conceptions about classroom assessment.*

*H<sub>1</sub>: Professional training in assessment procedure does influence Economics teachers’ conceptions about classroom assessment*

Table 9 presents a summary of the simple linear regression results in terms of the hypothesis that professional training in assessment procedure does not influence Economics teachers’ conceptions about classroom assessment.

**Table 9: Linear Regression Results for Professional Training in Assessment Procedure and Conceptions on Assessment.**

```
. regress Assessment_Conceptions i.Q5
```

Source	SS	df	MS	Number of obs	=	284
Model	590.58179	1	590.58179	F(1, 282)	=	2.25
Residual	73948.1048	282	262.227322	Prob > F	=	0.1345
Total	74538.6866	283	263.387585	R-squared	=	0.0079
				Adj R-squared	=	0.0044
				Root MSE	=	16.193

  

Assessment~s	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
Q5					
YES	3.45142	2.299836	1.50	0.135	-1.075604 7.978444
_cons	143.3455	1.091761	131.30	0.000	141.1964 145.4945

*\*Significance level .05*

As shown in the output from Stata 15, it is clear that a Pseudo R square of 0.79% indicates that professional training in assessment procedure explains less than 1% of the variation in the conceptions that Economics teachers form in terms of their assessment practices. The results indicate that there is a positive relationship between professional training in assessment procedures, and conceptions about assessment by the Economics teachers. The regression results indicate that professional training in assessment procedure improves Economics teachers’ conception of assessment by 3.45 as the Economics teachers move from not being trained in assessment procedure to being trained. However, the result is not significant at 5% alpha level, implying that Economics teachers’ conceptions of classroom assessment is not influenced by training.

**Discussion of Results**

The overarching research question of this study was to find out the conceptions of SHS Economics teachers about classroom assessment. The respondents demonstrated positive responses in respect of the idea that classroom assessment leads to improvement in teaching and learning, ensures school accountability, and makes students accountable to their own learning. The improvement conception underscores the importance Economics teachers attach to the use of data from assessment to effect valid changes in teaching and learning as opined by (Brown, 2008; Black, Harrison, Lee, Marshall, & William, 2002). This conception appreciates assessment as a tool to improve the quality of teaching and learning of Economics. Again, the Economics teachers who perceived assessment as a way of holding schools accountable demonstrated that it provides information on how well schools are doing. This finding is in harmony with the opinions of Smith and Fey (2000), and Linn (2000) who emphasized two rationales in respect of the conception of holding school accountable; that is, demonstrating school and teacher quality, and improving the quality of instruction.

With respect to the idea of ensuring student accountability, a majority of the Economics teachers conceived classroom assessment as a mechanism for placing students into categories. This finding is consistent with

that of Guthrie (2000) who argues that this conception is more about placing students through what he describes as high stakes consequences such as graduation, selection or public reporting. However, the respondents rejected the conception that classroom assessment is irrelevant. This aspect of the finding does not seem to support the assertion of Brown (2002) and Shohamy (2001) that teachers are likely to think that assessment is less valid and unreliable. This finding is also at variance with the observation of Harlen (1998) that under this conception, assessment could be seen as being separated from the teaching and learning process. The finding further negates the view of Smith (1991) that teachers could consider assessment as irrelevant due to its negative impact on their autonomy and professionalism.

The findings emanating from this research question are not so difficult to understand or explain. In the first place, the Economics teachers were once students and subjected to rigorous assessment exercises. Their present status as Economics teachers reflects improved teaching and learning while they were students. Undoubtedly, classroom assessment facilitated these improvements from one level to the other. It is therefore plausible to argue that these Economics teachers still have mental pictures about the worth of classroom assessment and so may not consider it as irrelevant.

Hypothesis one sought to find out whether there was any significant difference in the conceptions of SHS Economics teachers about classroom assessment based on gender, age, and teaching experience. On the basis of gender and age, results of the study could not show any statistically significant difference in the conceptions of respondents about classroom assessment. The null hypothesis was accordingly upheld. This finding is consistent with that of Mehrigan *et al* (2017) who could not establish any statistically significant difference in the beliefs of EFL teachers about formative assessment based on gender and age. Benson (2014) could not also find any impact of gender on teachers' conception of classroom assessment. Similarly, in the study of Chan (2006), the relationship between teachers' age and beliefs about assessment was not statistically significant. By implication, teachers' age and gender did not influence teachers' conceptions (beliefs) about the purposes of formative assessment. In contrast, the findings of this present study are at variance with that of Brown and Gao (2015), and Ndalichako (2015) who discovered significant differences in the conceptions of teachers about classroom assessment based on gender. The differences in findings, as they relate to this current study, could be attributed to differences in research methodology employed as well as differences in the teaching and learning contexts. Again, unlike a study on the EFL teachers, this study dealt with Economics teachers. In addition, the different age and gender composition of these studies, relative to the current study can also influence differences in findings.

The results of this study found a statistically significant difference in the conceptions of respondents about classroom assessment based on years of teaching experience. This finding specifically related to those whose teaching experience ranged from less than 3 to 6 years. Respondents who have been teaching Economics for more than 7 years demonstrated a positive conception, relative to those with less than 3 years of experience. This finding does not seem to support the finding of Benson (2014) who discovered that younger and older teachers in terms of teaching experience, held similar conceptions about classroom assessment, particularly the irrelevant conception. Similar to the findings of this current study, Brown and Gao (2015) discovered differences in teachers' conception of classroom assessment based on teaching experience. Their study found that teachers with more than 20 years of teaching experience agreed with the



belief that classroom assessment should be used to inspect and control the school, teachers, and students, in order to enhance the quality of teaching and learning. Conversely, Sahikarakas (2012) found that experienced teachers perceived classroom assessment in a more negative way than the in-experienced teachers. She explains that some of these experienced teachers may not need any evidence on their teaching effectiveness, hence they will not appreciate the importance of classroom assessment.

Hypothesis 2 was meant to find out the extent to which professional training in assessment procedures influenced Economics teachers' conception of classroom assessment. Results of this study revealed a positive relationship between professional training and teachers' perspectives concerning classroom assessment. Professional training in assessment improved the Economics teachers' conceptions of classroom assessment. This finding is at variance with that of (Brown & Hirschfeld, 2008; Levy-Vered & Alhija, 2015), who found that undertaking an assessment course or having detailed knowledge in assessment did not improve teachers' conception of classroom assessment. The finding of this current study is rather in tandem with that of DeLuca *et al.*, (2013) and Smith *et al.*, (2014) who discovered that periodic training in assessment improved teachers' conception of assessment. The positive relationship between the Economics teachers' professional training in assessment, and their conceptions of classroom assessment could be largely due to the periodic in-service training offered them by the Ghana Education Service. Again, the impact of any professional training in assessment on teachers' conceptions will depend on the course structure and content, as well as the duration.

## **Conclusion and Recommendations**

This study was designed to ascertain the conceptions of SHS Economics teachers about the purposes of classroom assessment. Participants of this study demonstrated positive conceptions of assessment in respect of improving teaching and learning, as well as ensuring school and student accountability. However, the respondents downplayed the irrelevance conceptions of classroom assessment which is perceived in certain contexts as undermining the teachers' professional autonomy. With the exception of teaching experience, other demographic variables such as age and gender, had no impact on the respondents' conception of classroom assessment. Professional training in assessment procedures had a positive influence on the Economics teachers' conceptions of classroom assessment. This implies that in-service training on assessment should be sustained, particularly for the experienced and less experienced Economics teachers. Again, the assessment literacy of experienced and less experienced Economics teachers should be improved through the organisation of professional learning communities for the teachers. In addition, the experienced and less experienced Economics teachers should develop a healthy reading habit so as to constantly be in tune with the nitty-gritty of classroom assessment.

## **References**

- Akinkuolie, O. O. (1989). Types of research studies. *Newsletter*, 10 (2), 3 – 7.
- Alderson, J. C. (2005). *Principles and practice in language testing*. Keynote address at RATE-QUEST Conference, Cluj, Romania, 5<sup>th</sup> August, 2005.

- Alsarimi, A. M. (2000). *Classroom assessment and grading practices in the Sultanate of Oman*. Unpublished master's dissertation, University of Pittsburgh, Pennsylvania
- Amedahe, F. K. (1989). *Testing practices in secondary schools in the central region of Ghana*. Unpublished master's thesis, University of Cape Coast, Cape Coast.
- Anhwere, Y. M. (2009). *Assessment practices of teacher training college tutors in Ghana*. Unpublished master's thesis, University of Cape Coast, Cape Coast.
- Barnes, N., Fives, H., & Dacey, C. M. (2015). Teachers' beliefs about assessment. In H. Fives & M. G. Gill (Eds.), *International handbook of research on teachers' beliefs* (pp. 284 – 300) New York, NY: Routledge.
- Becker, W. E., & Watts, M. (2001). Teaching Economics at the start of the 21<sup>st</sup> century: Still Chalk-and-talk. *American Economic Review*, 91(2), 446 – 457.
- Benson, T. L. (2014). *Sixth through eighth grade teachers' conceptions (beliefs) about assessment practices*. Unpublished D. Ed dissertation presented to the Wingate University School of Graduate and Adult Education, Union Country.
- Best, J. W. (1981). *Research in education* (4<sup>th</sup> ed.). Eaglewood Cliffs, New Jersey: Prentice Hall Inc.
- Borko, H., Mayfield, V., Marion, S., Flexer, R. & Cumbo, K. (1997). Teachers' developing ideas and practices about mathematics performance assessment: Successes, stumbling blocks, and implications for professional development. *Teaching and Teacher Education*, 13 (3), 259 – 278
- Bright, G. W., & Joyner, J. M. (1998). *Classroom assessment in mathematics*. New York University of America. Inc.
- Brown, G., T. L. (2002). *Teachers' conceptions of assessment*. Unpublished doctoral dissertation, University of Auckland, New Zealand.
- Brown, G., T. L. (2003). *Teachers' instructional conceptions: Assessment's relationship to learning, teaching, curriculum, and teacher efficacy*. Paper presented at the Joint Conference of the Australian and New Zealand Associations for Research in Education, Auckland, New Zealand, 3<sup>rd</sup> April, 2003.
- Brown, G. T. L. (2004). Teachers' conceptions of assessment: Implications for policy and professional development. *Assessment in Education: Principles, Policy & Practice*, 11 (3), 301 – 318.
- Brown, G. T. L. (2008). *Conceptions of assessment: Understanding what means to teachers and students*. New York: Nova Science Publishers.
- Brown, G. T. L., & Hirschfeld, G. H. F. (2008). Student' conceptions of assessment: Links to outcomes. *Assessment in Education: Principles, Policy and Practice*, 15 (1), 3 – 17.
- Brown, G. T. L. (2011). New Zealand prospective teacher conceptions of assessment and academic performance: Neither student nor practicing teacher. In R. Kahn, J. C. McDermott, & A. Akimjak (Eds.) *Democratic access to education* (pp.119 – 132). Los Angeles, CA: Antioch University Los Angeles, Department of Education.
- Brown, G. T. L., Lake, R., & Matters, G. (2011). Queensland teachers' conceptions of assessment: The impact of policy priorities on teacher attitudes. *Teaching and Teacher Education*, 27 (3), 210 – 220.
- Brown, G. L. T., & Gao, L. (2015). Chinese teachers' conceptions of assessment for teaching and learning: Six competing and complimentary purposes. *Cogent Education*, 2 (1), 64 – 71.

- Brookhart, S. M. (2011). Educational assessment knowledge and skills for teachers. *Educational Measurement: Issues and Practice*, 30 (2), 3 – 12.
- Black, P., & William, D. (1998). *Assessment for learning in the classroom*. London: Department of Education and Professional Studies, Kings College.
- Black, P., & William, D. (1998). Inside the black box: Raising standards through classroom assessment. *Phi Delta Kappan*, 80 (2), 139 – 144.
- Black, P., Harrison, C., Lee, C., Marshall, B., & William, D. (2002). *Working inside the black box: Assessment for learning in the classroom*. London: Department of Education and Professional Studies, Kings College.
- Butterfield, S., Williams, A., & Marr, A. (1999). Talking about assessment: Mentor-student dialogues about pupil assessment in initial teacher training. *Assessment in Education*, 6 (2), pp. 225 – 246.
- Calderhead, J. (1996). Teachers' belief and knowledge. In D. C. Berliner & R. C. Calfee (Eds.), *Handbook of educational psychology* (pp. 709 – 725), New York: Simon & Schuster Mcmillan.
- Chan, Y. (2006). Elementary school EFL teachers' beliefs and practices of multiple assessments. *Reflections on English Language Teaching*, 7 (1), 37 – 62.
- Chen, M. (2010). *Education nation: Six leading edges of innovation in our schools*. New York: MacMillan
- Dayal, H. C., & Lingam, G. I. (2015). Fijian teachers' conceptions of assessment. *Australian Journal of Teacher Education*, 40 (8), 27 – 46.
- DeLuca, C., Chavez, T., & Cao, C. (2013). Establishing a foundation for valid teacher judgement on student learning: The role of pre-service assessment education. *Assessment in Education: Principles, Policy & Practice* 20 (1), 107 – 126.
- Deneen, C., & Boud, D. (2014). Patterns of resistance in managing assessment change. *Assessment and Evaluation in Higher Education*, 39 (4), 577 – 591.
- Duncan, C. R., & Noonan, B. (2007). Factors affecting teachers' grading and assessment practices. *The Alberta Journal of Educational Research*, 53 (1), 1 – 21.
- Firestone, W. A., Mayrowetz, D., & Fairman, J. (1998). Performance-based assessment and instructional change: The effects in Maine and Maryland. *Educational Evaluation and Policy Analysis* 20 (2), 11 – 95.
- Fulmer, G. W., Lee, I. C. H., & Tan, K. H. K. (2015). Multi-level model of contextual factors and teachers' assessment practices: An integrative review of research. *Assessment in Education: Principles, Policy, and Practice* 22 (2), 475 – 494.
- Gatbonton, E. (1999). Investigating experienced ESL teachers' pedagogical knowledge. *Modern Language Journal*, 83 (1), 35 – 50.
- Ghana Education Service (2017). *Educational sector performance report*. Accra: MoE.
- Goodenough, W. H. (1990). Evolution of human capacity for beliefs. *American Anthropologist*, 93 (1), 597 – 612.
- Guthrie, J. T. (2002). Preparing students for high-stakes test taking in reading. In A. E. Farstrup & S. J. Samuels (eds.), *What research has to say about reading instruction* (pp. 370 – 391). Newark, DE: International Reading Association.

- Hargreaves, E. (2007). The validity of collaborative assessment for learning. *Assessment in Education: Principles, Policy & Practice*, 14(2), 185 – 199
- Harris, L. R., & Brown, G. T. L. (2008). *New Zealand teachers' conceptions of the purposes of assessment: Phenomenographic analyses of teachers' thinking*. Paper presented at the Australian Association for Research in Education (AARE), Brisbane, Australia, 6<sup>th</sup> September, 2008.
- Harris, L. R., & Brown, G. T. L. (2009). The complexity of teachers' conceptions of assessment: Tensions between the needs of schools and students. *Assessment in Education: Principles, Policy, & Practice*, 16 (3), 365 – 381.
- Harlen, W. (1998). Classroom assessment: A dimension of purposes and procedures. In C. Ken (Ed.), *SAMEpapers* (pp. 75 – 97). Hamilton New Zealand: Centre for Science, Mathematics and Technology Educational Research, University of Waikato.
- Hattie, J., & Timperley, H. (2007). The power of feedback. *Review of Educational Research*, 77 (1), 81 – 112.
- Heritage, M. (2007). Formative assess: What do teachers need to look out for? *Phi Delta Kappan*, 89 (2), 140 – 146.
- Hill, M. F. (2000). *Remapping the assessment landscape: Primary teachers self-managing schools*. Unpublished doctoral thesis. University of Waikato, Hamilton, NZ.
- Izci, K., & Caliskan, G. (2017). Development of prospective teachers' conceptions of assessment and choices of assessment task. *International Journal of Research in Education and Science (IJRES)*, 3 (2), 464 – 474.
- Jimaa, S. (2011). The impact of assessment on students' learning. *Procedia – Social and Behavioural Sciences*, 28 (4), 718 – 721.
- Leung, C. (2004). Developing formative teacher assessment: Knowledge, practice and change. *Language Assessment Quarterly*, 1(3), 19 – 41.
- Levy-Vered, A., & Alhija, F. N. (2015). Modelling beginning teachers' assessment literacy: The contribution of training, self-efficacy, and conceptions of assessment. *Educational Research and Evaluation*, 21 (5), 378 – 406.
- Linn, R. L. (2000). Assessments and Accountability. *Educational Researcher*, 29 (2), 4 – 16.
- McMillan, J. H. (2001). Secondary teachers' classroom assessment and grading practices. *Educational Measurement: Issues and Practices*, 20 (1), 20 – 32.
- McMillan, J. H., Myran, S., & Workman, D. (2002). Elementary teachers' classroom assessment and grading practices. *The Journal of Educational Research*, 95 (4), 203 – 213.
- Mehrgan, K., Hayati, A., & Alavi, S. M. (2017). Investigating the impacts of EFL teachers' age, educational background, instructional experience and gender on their beliefs about formative assessment. *International Journal of Foreign Language Teaching & Research* 5 (18), 143 – 160.
- Mertler, C. A., & Campbell, C. (2005). *Measuring teachers' knowledge and application of classroom assessment concepts: Development of the assessment literacy inventory*. Paper presented at the annual meeting of the American Educational Research Association, April, Montreal, QC, Canada.
- Ministry of Education, (MOE, 2017). *Statistics on Senior High Schools in Ghana*. Ghana-Accra: MOE.

- Ndalichako, J. L. (2015). Secondary school teachers' perceptions of assessment. *International Journal of Information and Education Technology*, 5 (5), 326 – 332.
- Nichols, S. L., & Harris, L. R. (2016). Accountability assessment's effects on teachers and schools. In G. T. L. Brown, & L. R. Harris (Eds.), *Handbook of human and social conditions in assessments* (pp. 40 – 56). New York: Routledge
- Nworgu, B. G. (1991). *Educational research: Basic issues and methodology*. Enugu: Wisdom Publishers Ltd.
- Oga, J. K. (2013). *Decision making in the research process: Companion to students and beginning researchers*. Accra: Adwinsa Publications Ltd.
- Orlando, J. (2008). *How to effectively assess online learning*. Madison: Magma Publication Inc.
- Pajares, M. F. (1992). Teachers' beliefs and educational research: Cleaning up a messy construct. *Review of Educational Research*, 62 (7), 307 – 332.
- Popham, J. (2008). *Transformative assessment*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Rebeck, K., & Asarta, C. (2012). Methods of assessment in college Economics course. In G. M. Hoyt, & K. McGoldrick (Eds.), *International handbook of teaching and learning Economics* (pp. 177 – 187). Edward Elgar: Cheltenham.
- Remesal, A. (2011). Primary and secondary teachers' conceptions of assessment: A qualitative study. *Teaching and Teacher Education*, 27 (2), 472 – 482.
- Sahikarakas, S. (2012). The role of teaching experience on teachers' perceptions of Language assessment. *Procedia – Social and Behavioural Science* 47 (2), 1786 – 1792.
- Schempp, P. G. & Johnson, S. W. (2006). Learning to see: Developing the perception of an expert teacher. *Journal of Physical Education, Recreation & Dance (JOPERD)*, 77(6), 29-33.
- Scott, J. (2015). The promises, problems and prospects of research on teachers' beliefs. In H. Fives, & M. G., Gill (Eds.), *International handbook of research on teachers' beliefs* (pp. 13 – 30) London: Routledge.
- Shohamy, E. (2004). *The power of test: A critical perspectives on the uses of Language tests*. Harlow: Pearson Education
- Smith, M. L. (1991). Put to the test: The effects of external testing on teachers. *Educational Researcher*, 20 (5), 8 – 11.
- Smith, M. L., & Fey, P. (2000). Validity and accountability in high-stakes testing. *Journal of Teacher Education*, 51 (5), 334 – 344.
- Smith, L. F., Hill, M. F., Cowie, B., & Gilmore, A. (2014). Preparing teachers to use the enabling power of assessment. In C. Wyatt-Smith, V. Klenowski, & P. Colbert (Eds.) *Designing assessment for quality learning* (pp. 303 – 323). Dordrecht, The Netherlands: Springer.
- Stecher, B. M., & Barron, S. (2001). Unintended consequences of test-based accountability when testing in 'milepost' grades. *Educational Assessment*, 7 (4), 259 – 281.
- Thompson, A. G. (1992). Teachers' beliefs and conceptions: A synthesis of the research. In D. A. Grouws, (Ed.) *Handbook of research on mathematics teaching and learning* (pp.127 – 146), New York: Macmillan.

- Tsui, A. B. (2005). Expertise in teaching: Perspectives and Issues. In K. Johnson (Ed.), *Expertise in second language learning and teaching* (pp. 167 – 189). New York: Palgrave Macmillan.
- Vanderyar, S., & Killen, R. (2007). Educators' conceptions and practice of classroom assessment in post-apartheid South Africa. *South African Journal of Education*, 27 (5), 101 – 115.
- Woorons, S. (2001). *An analysis of expert and novice tennis instructors' perceptual capacities*. Unpublished Doctoral Dissertation, University of Georgia, Athens.
- Xu, Y., & Brown, G. T. L. (2016). Teacher assessment literacy in practice: A reconceptualization. *Teaching and Teacher Education*, 58 (2), 149 – 162.
- Yetkin, R. (2018). Exploring prospective teachers' conceptions of assessment in a Turkish context. *European Journal of Education Studies*, 4 (5), 133 – 147.
- Zhang, Z., & Burry-Stock, J. A. (2003). Classroom assessment practices and teachers' self-perceived assessment skills. *Applied Measurement in Education*, 16 (4), 323 – 342.