



Student Teachers' Knowledge and Conceptions of Classroom Assessment at a University in Jamaica

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Abstract

The main purpose of this ex post facto study was to determine the student teachers' knowledge of classroom assessment and their conceptions of classroom assessment. The sample size was 111 student teachers in a university in Jamaica. Data were collected by using a questionnaire. The results showed that the student teachers had some knowledge of classroom assessment with no differences in gender, age range, area of specialization and year in the program as it pertains to their knowledge of classroom assessment. Regarding the student teachers' conceptions of classroom assessment, the results showed that some disagreed and some agreed with their responses to their conceptions of classroom assessment as it pertained to the following concepts, namely, irrelevant, teaching and learning, the benefits of classroom assessment, and accountability. The findings indicated a notable disparity in the irrelevant sub-scale scores among male and female students and teachers. However, no variations were observed in the age range, area of specialization, year in the program, and other sub-scales of student teachers. Recommendations were made on how to use classroom assessment results to improve the teaching and learning process, the need to be assessment literate, and the need to advocate for sound assessment practices in schools.

Subject Areas

Classroom Assessment, Education

Keywords

Assessment Literate, Classroom Assessment, Conceptions of Classroom

1. Introduction

Classroom assessment is a tool used by teachers to gather student learning information used for making informed decisions on “what students know, understand and can do” ([1], p. 4). According to Brookhart and McMillan, classroom assessment is a process that involves students and their teachers doing several things, such as “collecting, evaluating, and using evidence of student learning for different purposes, including diagnosing student strengths and weaknesses, monitoring student progress toward meeting desired levels of proficiency, providing feedback to students and parents, and enhancing student learning and motivation” [2] (p. 2). The purposes of classroom assessment can be formative and summative [3].

Takele and Melese [2], citing Black and Wiliam, described classroom assessment as a process in which teachers gather information about their students’ learning. They also described classroom assessment as “part of the teaching-learning process, which includes all assessment that happens within the classroom regardless of its purpose, and it helps teachers to make sound decisions on the students’ progress” (p. 2). Hui [4] believed that in assessment, teachers should pay attention to “why students do not learn well and to employ strategies to improve rather than just to find out what students have learned” (p. 375).

The study of assessment, in general, has attracted the interest of several researchers over the years because of how important it is to the teaching and learning process [5]. Due to the importance of assessment and the conceptions of assessment, student teachers or future teachers are taught classroom assessment because they will be required to assess learning by developing and administering assessments fairly, knowing how to grade and interpret results, understanding how to use the results to make decisions, and reporting assessment results to stakeholders. Without studying teachers’ conceptions of assessment, teachers’ opinions of assessment will impact how they teach and assess their students [6]. Therefore, the study of conceptions of assessment is considered important [4].

Due to the importance of assessment, stakeholders such as assessors and school leaders are trained to conduct assessment practices professionally. Hence, the Code of Professional Responsibilities in Educational Measurement was developed by the National Council on Measurement in Education [NCME] [7]. The Code consists of eight sections, namely, (1) responsibilities of those who develop assessment products and services, (2) responsibilities of those who market and sell assessment products and services, (3) responsibilities of those who select assessment products and services, (4) responsibilities of those who administer assessments, (5) responsibilities of those who score assessments, (6) responsibilities of those who interpret, use, and communicate assessment results, (7) responsibilities of those who educate others about assessment, and (8) responsibilities

of those who evaluate educational programs and conduct research on assessments.

1.1. Background of the Study

The study site is the Faculty of Education and Liberal Studies at the University of Technology (UTech), Jamaica. The Faculty comprises the School of Technical and Vocational Education (SOTAVE) and the School of Humanities and Social Sciences (SHSS). SOTAVE offers a four-year Bachelor of Education in Technical and Vocational Education and Training (B.Ed. TVET) in three main areas of specialization, namely, Family and Consumer Studies, Industrial Technology, and Business Studies. There is another group of students who take education courses; these are students in the Bachelor of Science and Education program, which is offered by the Faculty of Science and Sport at the same university. The student who graduates from the B.Ed. TVET and the B.Sc. in Science Education programs are expected to teach in high schools (UTech, Jamaica Student Handbook [8]; UTech, Jamaica Summary of Undergraduate Courses of Study, [9]).

SOTAVE also offers a Bachelor of Science (B.Sc.) in Entertainment, Design, Production and Technology, and an Associate Degree in two areas, namely, Arts in Image Consulting and Fashion Styling, and Entertainment Design, Production and Technology ([8] [9]). SHSS, on the other hand, offers a Bachelor of Arts (BA) in Communication Arts and Technology and general education courses in academic literacy, foreign languages, and other humanities and social sciences courses ([8] [9]). The student teachers take specialization courses and education courses. One such education course is classroom assessment, a year two course [10]. In this course, students are taught the following topics, namely, instructional objectives and learning domains, classroom assessment approaches, test construction (traditional assessment), test construction (performance/alternative assessment), assembling and administering a test, evaluating assessment instruments, and test statistics for teachers. These topics reflect the knowledge represented across the eight sections of the Code of Professional Responsibilities in Educational Measurement by NCME [7].

1.2. Statement of the Problem

The only assessment course done by student teachers in the Faculty is offered in the second year of a four-year program. In each academic year, when the course is offered, student teachers have different conceptions of assessment. For instance, some say that the course is not necessary since they already know how to conduct assessments, and some say that it was a difficult course to learn and, therefore, are not fond of the course (Student 1 & Student 2, November 2020, personal communication). These student teachers' opinions of the course, if not addressed, may impact the way they practice assessment in their classes. Therefore, it is important to determine the knowledge and conceptions of student teachers while in training so that they learn correctly before they go into the teaching profession.

A review of the literature showed that several studies had been done on teachers' conceptions of assessment. For instance, Monteiro *et al.* [5] explored assessment conceptions of students and teachers in four Portuguese primary schools, and Brown *et al.* [11] investigated published models of teacher assessment conceptions in multiple jurisdictions, although the study originated from New Zealand, while Hidri [12] studied secondary and university teachers' conceptions of assessment in Tunisia. Brown and Remesal [13] examined assessment conceptions among prospective teachers in Spain and New Zealand, while Brown [14] wrote a book titled *Conceptions of assessment: Understanding what assessment means to teachers and students*, and Remesal [15] specifically wrote about Spanish student teachers' conceptions of assessment when starting their careers.

To the best of the knowledge of the researchers, there are no studies on student teachers' knowledge and conceptions of classroom assessment in Jamaica, despite the fact that the topic is important and has several implications on how the group would likely practice classroom assessment when they graduate. Therefore, there is a need to investigate this topic, which will fill the identified gap in the existing literature.

1.3. Purpose of the Study

The main purpose of this study is to determine the student teachers' knowledge of classroom assessment, which is also referred to as assessment literacy and their conceptions of classroom assessment. The study is also aimed at determining if there are differences in the student teachers' knowledge and conceptions of classroom assessment and their gender, year of program, and areas of specialization.

1.4. Research Questions

- 1) To what extent do student teachers' knowledge of classroom assessment differ by gender, year of the program, and areas of specialization?
- 2) To what extent do student teachers' conceptions of classroom assessment differ by gender, year of the program, and areas of specialization?

2. Literature Review

2.1. Assessment Literacy

People involved with classroom assessment should have knowledge and skills of how to select and conduct classroom assessment, among other things, hence the term assessment literacy. Despite the fact that assessment is important, Guskey [16] noted that few teachers are trained in assessment because it was not a required competence for teachers to be licensed. Gareis and Grant [17] noted that novice teachers should be better prepared for assessment before they complete their training.

The knowledge of assessment is not limited to teachers alone but also students and school leaders [18]. However, we focused on teachers' assessment literacy,

because it could impact the student teachers' conceptions of assessment. An assessment-literate person knows the basic principles of assessment practices [18]. Assessment literacy is defined as a "teacher's ability to create and use assessment practices in order to progress student learning in the classroom" [16] (p. 8). Kahl *et al.* [19] provided a broad definition of assessment literacy as educators having the knowledge and skills to first "identify, select, or create assessments" and "analyse, evaluate, and use the quantitative and qualitative evidence" in making decisions. A study by Latif and Wasim [20] on 12 EFL teachers investigated the beliefs, personal theories and conceptions of assessment literacy in Saudi Arabia. Based on their review of the literature, they cited several authors who found that teachers expressed a certain amount of uncertainty in their beliefs of conceptions of assessment, especially when it comes to the purposes and functions of assessment. Latif and Wasim [20] classified teachers' beliefs into four, namely, activities considered as classroom assessment, uses of classroom assessment activities, reasons for the use of classroom assessment activities, and effective activities in different classroom contexts. Latif and Wasim [20] concluded that "teachers' assessment-related beliefs and conceptions play a strong role in inspiring their assessment practices; they cannot carry out these assessment practices in a way they would like" (p. 15), since the assessment will be conducted within the workplace.

An assessment-literate teacher is one that:

- Knows how instructional decision-making fits into the balanced system of assessment, users of which they are a member,
- Identifies clear and appropriate purposes for each assessment,
- Is a master of the learning targets that are to be assessed,
- Can create and select high-quality assessments aligned to those targets,
- Implements assessments equitably, making appropriate modifications based on student needs,
- Employs a variety of assessments that are appropriate for the students and learning targets,
- Analyzes the results of assessments given their knowledge of students, and makes instructional adjustments based on those results,
- Understands how to tailor the communication of results to the needs of the intended user,
- Masters the use of formative assessment to support student learning and can teach students how to act assertively on their own assessment results to take charge of their own learning success,
- Partners with colleagues, their students' families, and the community, using assessment results to identify needs that can be best met collaboratively,
- Sees the development of their assessment literacy as a career-long learning process, and
- Advocates for sound assessment practices in instructional and/or policy settings [18] (n. p.).

Consequently, while preparing student teachers, their knowledge and concep-

tions of assessment as outlined by the Task Force are vital to practice assessment in their classrooms.

2.2. Conceptions of Classroom Assessments

Conception is a term that has been defined in different ways [21]. Gorodetsky *et al.* [21] stated that the term “conception is differentiated from ‘practice’, which refers to actions performed as part of one’s professional behaviour and which draws on the person’s experience as a pupil, as a student-teacher, or a teacher” (p. 423). Takele and Melese [2], citing Mirian and Zulnaldi, described conceptions as “what individuals understand, know, believe, think, or feel about a thing at any one time” (p. 2). Furthermore, Hui [4], citing Thompson’s study, stated that the word conception is “a more general mental structure, which encompasses beliefs, meanings, concepts, preferences, and the like” (p. 375).

Over the years, several authors have written about conceptions of classroom assessment. These include Barnes *et al.* [22], Brown [14], Monteiro *et al.* [5], Remesal [23], and Takele and Melese [2], to name a few. For instance, Brown [14] was one of those who wrote about conceptions of assessment in the book titled *Conceptions of assessment: Understanding what assessment means to teachers and students*. Brown explained the conceptions of assessment as the “perceptions people have about assessment, based on their experiences with and of assessment” (p. 9). Monteiro *et al.* [5] added that teachers and students have different conceptions of assessment, which makes it an important topic in assessment research and also distinguished between teacher and student conceptions of assessment. These are discussed below.

Teachers’ Conceptions of Classroom Assessment. Teachers’ notion of classroom assessment is important due to how the process is done, which could influence their practices ([5] [22]). Put differently, teachers’ perceptions of their students’ behaviours and performance affect their conceptions [5]. Monteiro *et al.* [5] and Takele and Melese [2], citing other sources, stated that teachers conceive assessment as having four purposes, namely, 1) assessment improves students’ teaching and learning, 2) assessment makes students accountable because of grades, 3) assessment makes schools and teachers accountable, and 4) teachers’ belief on assessment is irrelevant.

In the study by Takele and Melese [2] with primary school teachers in Ethiopia, using a cross-sectional research design, these teachers agreed when it came to their conceptions of assessment about improving teaching and learning and accountability factors. Takele and Melese [2], therefore, concluded that these teachers’ practices were consistent with their conceptions of assessment.

A study done by Brown [14] in New Zealand among primary school teachers revealed that the teachers were of the view that assessment improves the teaching and learning process. However, these teachers’ conception of the assessment as being for student accountability showed their disapproval of this notion. The conception of assessment as one that improves teaching and learning was also

expressed by Remesal [23], who used a qualitative method to study 50 teachers from primary and secondary schools. In this study, Remesal [23], among other things, built a model of conceptions of assessment with four dimensions of the effects of assessment on the teaching, learning, accountability of teachers and schools to different stakeholders, and the certification of students' achievement. Furthermore, Brown and Remesal [13] investigated prospective teachers' conceptions of assessment in Spain and New Zealand; their study revealed four conceptions for assessment, namely, (improvement), that is, assessment improves teaching and learning, (irrelevance), that is, seeing assessment as not relevant, (school accountability), that is, assessment makes schools and teachers more accountable, and (student accountability), that is, assessment makes student accountable for their learning. These views were also expressed by Monteiro *et al.* [5] and Takele and Melese [2]. Brown and Remesal [14] also found prospective teachers' conceptions of assessment regarding the nature and purpose of assessment relevant.

Brown *et al.*'s [24] study showed that teachers' conceptions of assessment in Hong Kong and New Zealand differed significantly. For instance, the teachers from Hong Kong believed that assessment is used to improve teaching and learning and to make students accountable for their learning and for preparing for examinations. The differences found suggested Chinese cultural norms and the nature of examinations in Hong Kong and also due to the fact that teachers in New Zealand disagreed about the relevance and school accountability variables. Takele and Melese [2], using a cross-sectional survey design, examined mathematics teachers' conceptions of assessment in primary schools in Ethiopia. Takele and Melese's [2] study found that the teachers were mostly in agreement with the conceptions of classroom assessment as it pertains to accountability and improvement of learning. However, the number of teachers who agreed that classroom assessment is irrelevant was somewhat less. They also revealed that the conceptions of classroom assessment and teachers' assessment practices had a moderate positive relationship.

Gorodetsky *et al.*'s [21] study found that the teachers in Israel who participated in the study "conceived assessment in terms of numerical grades (*i.e.*, final test scores)" (p. 427). They also proposed a model of teachers' conceptual change and provided an example of how teachers can develop a new concept of classroom assessment, which could be done by "promoting new conceptions that will eventually lead to new practices" [21] (p. 432). Besides, it is not only the teachers who have conceptions of classroom assessment. The students' conceived notions are discussed below.

Students' Conceptions of Classroom Assessment. There are limited studies on students' beliefs or conceptions of classroom assessment [25]. However, over the years, there have been a few authors who have written on the topic. These include Brown and Harris [25], Monteiro *et al.* [5], and Remesal [15], to name a few. These authors wrote on students' conceptions of classroom assessment at different school levels (*i.e.*, primary, intermediate, high/secondary, etc.). For in-

stance, Brown and Harris's [25] New Zealand study investigated, among other things, student beliefs about classroom assessment at the primary, intermediate and high/secondary school levels. Their study revealed four conceptions of assessment, namely, that assessment 1) improves teaching and learning, 2) measures external factors, 3) has affective impact/benefits, and 4) is irrelevant. A majority of the students at the high/secondary level had lower mean values for external, improvement, and affective factors while giving a higher mean value for the irrelevance factor. Their results did not reveal any significant difference between students at the primary and intermediate levels. The difference between the primary and intermediate students and high/secondary students was attributed to the older students' beliefs/conceptions of classroom assessment and "how assessment is used in their school environment" [25] (p. 46). Monteiro *et al.* [5], on the other hand, found out that "students' conceptions of assessment focused on the accountability factor, that is, student accountability and school accountability.

3. Methods

3.1. Research Design

The ex post facto or causal-comparative research design was used because the researchers examined student teachers' knowledge and conceptions of classroom assessment after the fact. Furthermore, there was no manipulation of the independent variables (gender, age range, area of specialization & level) by the researchers [26].

3.2. Population and Sample

The selection criterion was that the student teachers would have completed the classroom assessment course offered by the Faculties of Education and Liberal Studies at the University of Technology, Jamaica. The student teachers who were yet to do the course were not considered. One of the requirements when causal-comparative research design is used, is to select the participants according to the comparison groups [26]. The eligible student teachers were selected using the stratified sampling method. First, the student teachers were considered based on their area of specialization (program) and second, by level (2nd, 3rd & 4th). This is because student teachers, in their first year, are not allowed to take the classroom assessment module. There were a total of 150 student teachers in the target population. All 150 student teachers were asked to participate by completing the consent form and questionnaire. The number of student teachers who returned the completed questionnaire was ($n = 111$). Therefore, the response rate was 74%, which, according to Babbie [27], is considered very good.

3.3. Data Collection

Data were collected using a questionnaire developed by the researchers. A questionnaire was one of the data collection methods recommended by Gall *et al.*

[28] when a causal-comparative research design is used. The items in the questionnaire used in this study were created after reading articles by researchers (Brown [6] [14] [24]; Brown *et al.* [29]; Brown & Remesal [13]; Hui [4]; Remesal [23]), who studied similar topics on conceptions of classroom assessment and assessment literacy. The literature on conceptions of classroom assessment showed that the following components should be considered, namely, irrelevant, teaching and learning, views and knowledge of classroom assessment, benefits of learning classroom assessment, and accountability. For this reason, the researchers included items on these components in the questionnaire.

The questionnaire consisted of two sections. Section one had four demography close-ended questions on gender, age range, areas of specialization, and student teachers' level/year in the program. Section two had 34 Likert-type items on six variables, namely, irrelevant, teaching and learning, views and knowledge of classroom assessment, benefits of learning classroom assessment, and accountability. These 34 items had a four-point response format from strongly disagree to strongly agree. The questionnaire was administered by the researchers to the student teachers while they were on campus, and was given 15 minutes to complete it.

3.4. Reliability and Validity

The reliability coefficient of the questionnaire was determined using Cronbach's alpha method. The internal consistency obtained was 0.856 for the 34 Likert-type items. This showed that approximately 86% of the variability in detected values was assumed to be due to individual differences, and 14% was due to random residuals [30]. Internal consistency between 0.6 and 0.8 is acceptable (Wim *et al.*, as cited in Hajjar [30]) and is considered a good scale [31]. No items were eliminated. As shown in **Table 1**, the sub-scale reliability coefficients were between 0.503 and 0.731.

Content validity was used to assess how well the questionnaire covered the constructs investigated [28], and the researchers reviewed the questionnaire by ensuring that the items were clear and relevant to the topic being investigated.

Table 1. Reliability coefficients for the sub-scales.

Sub-Scale	Number of Items	Coefficient (r)
Irrelevant	9	0.578
Teaching and Learning	5	0.723
Views	6	0.503
Knowledge	5	0.731
Benefits	4	0.506
Accountability	5	0.605

3.5. Data Analysis

Data collected were entered into the Statistical Package for Social Sciences (SPSS) software and analyzed using statistical methods to answer the research questions. This enabled the researcher to establish cause-effect relationships between the independent and dependent variables. Descriptive statistics was used to analyze the four demographic items. The main comparison group was the student teachers' area of specialization; as such, one-way Analysis of Variance (ANOVA) was used to ascertain differences between groups (the four areas of specialization) and student teachers' knowledge and conceptions of classroom assessment. Furthermore, ANOVA was used to determine differences between groups (the student teachers' age range, level/year in each specialization) and knowledge and conceptions of classroom assessment. The independent samples *t*-test was used to test for differences between the student teachers' gender (male & female) and their knowledge and conceptions of classroom assessment. The analyses were conducted at the 0.5 level of significance.

3.6. Ethical Considerations

The researchers applied and obtained ethical clearance before the study was done. The student teachers were asked to sign an informed consent form before data they were allowed to complete the questionnaire. This process was necessary because the student teachers needed to understand their rights and expectations [27]. Privacy preservation was maintained as the student teachers' personal information was not collected. This ethical principle focuses on risks of dignitary harm (*i.e.*, psychological harm) to the participants [32]. Furthermore, data privacy protection was observed as the data collected were stored in a cabinet that was locked, and only the researchers had access to the data set [33].

4. Results

4.1. Respondents' Characteristics

As shown in **Table 2**, of the 111 student teachers who responded, 42 (37.8%) were males, and 69 (62.2%) were females. The Business Studies program had the

Table 2. Gender by student teachers' areas of specialisation.

Area of Specialization	Gender		Total
	Male	Female	
Family and Consumer Studies	3 (2.7%)	14 (12.6%)	17 (15.3%)
Science Education	6 (5.4%)	4 (3.6%)	10 (9.0%)
Industrial Technology	21 (%)	11 (9.9%)	32 (28.8%)
Business Studies	12 (10.8%)	40 (36.0%)	52 (46.8%)
Total	42 (37.8%)	69 (62.2%)	111 (100%)

highest number of female respondents, while the Industrial Technology program had the highest number of male respondents.

As it pertains to the age range of the respondents, as shown in **Table 3**, the respondents' age were classified into three age groups, namely, 20 years and below (37.8%), 21 to 30 years (40.5%), and 31 years and above (21.6%).

As shown in **Table 4**, at the time of the study, 47 (42.3%) of the student teachers were in their second year of a four-year program. This is followed by those in their third and then fourth years.

4.2. Research Question One: To What Extent Do Student Teachers' Knowledge of Assessment Differ by Gender, Year of the Program, and Areas of Specialization?

The knowledge sub-scale with five items was used to answer this question. As shown in **Table 5**, items 22 (I can communicate assessment results to the intended users) and 23 (A classroom assessment course teaches me how to assess fairly) had slightly higher mean values compared to the other items. Item 24 (Being enrolled in a classroom assessment course to be assessment literate) had the lowest mean value. The standard deviation values for all five items showed fewer variations (from 0.759 to 0.877) in the student teachers' responses. It could be deduced from the responses of the student teachers that they have some knowledge of classroom assessment to be able to conduct an assessment. However, the student teachers' responses to item 25 showed that a majority of them "disagreed" with the perceptions of taking more courses in classroom assessment in order to be assessment literate. Therefore, to an extent, they cannot be said to be assessment literate at this level even though they have some knowledge of

Table 3. Gender by student teachers' age range.

Age Range	Gender		Total
	Male	Female	
20 Years and Below	11 (9.9%)	31 (27.9%)	42 (37.8%)
21 to 30 Years	16 (14.4%)	29 (26.1%)	45 (40.5%)
31 Years and Above	15 (13.5%)	9 (8.1%)	24 (21.6%)
Total	42 (37.8%)	69 (62.2%)	111 (100%)

Table 4. Gender by student teachers' year in the program.

Year in the Programme	Gender		Total
	Male	Female	
Second Year	12 (10.8%)	35 (31.5%)	47 (42.3%)
Third Year	16 (14.4%)	21 (18.9%)	37 (33.3%)
Fourth Year	14 (12.6%)	13 (11.7%)	27 (24.3%)
Total	42 (37.8%)	69 (62.2%)	111 (100%)

Table 5. Mean and standard deviation for the knowledge sub-scale.

Item*	Minimum	Maximum	Mean	SD
21. Analyze Assessment Results	1	4	2.48	0.87
22. Communicate Results	1	4	2.59	0.85
23. Assess Fairly	1	4	2.77	0.76
24. Assessment Literate	1	4	2.11	0.88
25. Take More Courses	1	4	2.42	0.82

*Note: Each item was abbreviated.

classroom assessment. According to Kahl *et al.* [19] and the National Task Force on Assessment Education for Teachers [18], a person who is assessment literate has knowledge and skills in classroom assessment practices. Hence, the National Task Force on Assessment Education for Teachers [18], outlined 12 knowledge and skills people should acquire to be assessment literate.

The independent samples *t*-test was used to compute the difference in male and female student teachers' responses to knowledge of classroom assessment. All five items were summed, and the calculation was done at the sub-scale level. The result did not reveal any difference between the male ($M = 12.0$, $SD = 2.68$) and female student teachers ($M = 12.6$, $SD = 3.04$), $t(109)$, -0.977 , $p = 0.165$. Furthermore, one-way analysis of variance (ANOVA) was used to test for differences in the student teachers' responses to their knowledge of classroom assessment (as a sub-scale) and their age range, area of specialization, and year in the program. The results did not reveal any differences in *age range* [$F(2, 108)$, 0.032 , $p = 0.968$]; *area of specialization* [$F(3, 107)$, 0.502 , $p = 0.682$]; and year in the program [$F(2, 108)$, 1.435 , $p = 0.243$]. No study was found to support the results of the *t*-test and the ANOVA tests.

4.3. Research Question Two: To What Extent Do Student Teachers' Conceptions of Assessment Differ by Gender, Year of the Program, and Areas of Specialization?

The conceptions of assessment are the perceptions people have about assessment [14]. To determine student teachers' conceptions of classroom assessment, five sub-scales (irrelevant, teaching & learning, views, benefits, & accountability) were used. Negatively worded items were re-coded before the analysis was done. The analyses were done at the item level and the subscale level. See Table 6 for the overall mean values for each sub-scale, which ranged from 10.9 to 22.7, indicating that many of the student teachers seem to agree with their perceptions of classroom assessment. The standard deviation values were from 2.00 to 3.53, indicating slight differences in the student teachers' responses, except for the irrelevant sub-scale, which had more variations. The results of the current study were consistent with findings by Brown [14], Remesal [23], Brown and Remesal [13], Monteiro *et al.* [5], and Takele and Melese [2], which found that some teachers conceived assessment under four purposes, namely, 1) teaching and learning,

Table 6. Descriptive statistics for five sub-scales.

Sub-Scales	Minimum	Maximum	Mean	SD
Irrelevant	16	31	22.7	3.53
Teaching and Learning	8	20	13.2	2.89
Views	11	22	15.9	2.50
Benefits	4	15	10.9	2.00
Accountability	5	20	12.2	2.69

2) students accountability, 3) schools and teachers accountability, and 4) irrelevant.

For a more detailed discussion, the analysis of each item under the sub-scales was done. These discussions are presented below, beginning with the irrelevant sub-scale.

Irrelevant. This sub-scale had nine items. Negatively worded items were re-coded before the analysis was done. As shown in [Figure 1](#), the mean values for the nine items ranged from 2.07 to 2.95, with item 3 (Assessing student performance is not a waste of time) having the highest mean and item 7 (Assessment results are not used by teachers) having the lowest mean. Although the student teachers' responses were between disagree and agree on these items, it was encouraging to see that they believed that assessing student performance was not a waste of time, but discouraging to know that they felt that teachers did not use the assessment result. Regarding using assessment results, Guskey [16] admitted that both students and teachers use assessment results because of their responsibilities for learning. For instance, Guskey [16] noted that teachers use assessments to gather important information on their students, the quality of the assessments, and their teaching.

Teaching and Learning. This sub-scale had five items, which were positively framed. As shown in [Figure 2](#), the mean values for the nine items ranged from 2.48 to 2.77, with item 14 (Assessment affects teachers, students, & the curriculum & teaching) having the highest mean. According to Guskey [16], classroom assessment impacts different stakeholders and the instructional process. Item 12 (Classroom assessment is a valid way to evaluate students' learning) has the lowest mean. The results showed that a majority of the student teachers agreed in their responses about classroom assessment being a valid way of assessing student learning. This is consistent with the views of Guskey [16], who was of the view that classroom assessment is crucial for evaluating student learning as well as helping them learn.

Views of Classroom Assessment. This sub-scale had six items. Negatively worded items were re-coded before the analysis was done. As shown in [Figure 3](#), item 18 (Classroom assessment is about giving grades to students) had the highest mean value. This is because a majority of the student teachers believed that classroom assessment is about awarding grades to students. This view is far from

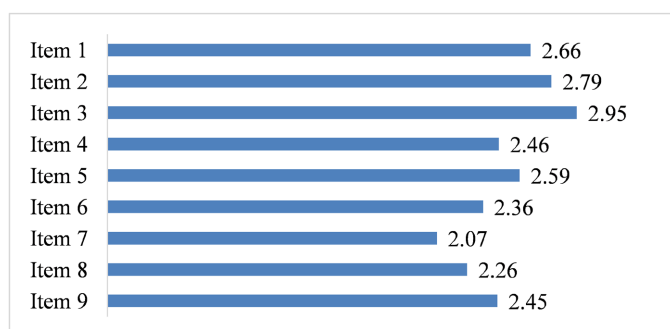


Figure 1. Student teachers' responses to irrelevant items.

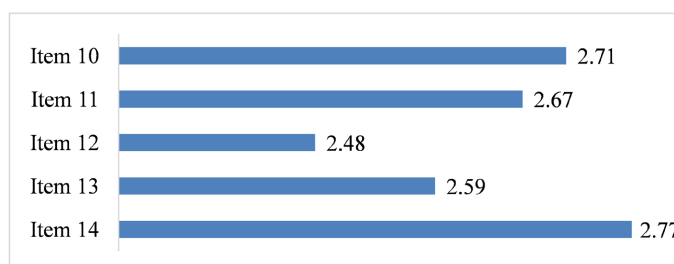


Figure 2. Student teachers' responses to teaching and learning items.



Figure 3. Student teachers' responses to views of assessment items.

the truth since there are several reasons why teachers conduct classroom assessments. These purposes of classroom assessment have been well documented to include, among other things, gathering evidence of student performance either during instruction (formative) as well as at the end of instruction (summative) [3]. On the other hand, item 15 (A good teacher must have training in classroom assessment) had the lowest, which was also surprising because the number of respondents who disagreed was more than those who agreed. It has already been established that people who are to conduct assessments should have classroom assessment training by organizations such as the National Task Force on Assessment Education for Teachers [18], and different authors such as Guskey [16] and McMillan [3], to name a few.

It is worth noting that most of the student teachers agreed in their responses to item 19 (My likes for classroom assessment course outweigh my dislikes). This is particularly encouraging since anecdotal records showed that some student teachers see the classroom assessment course as unnecessary since they already know how to conduct assessments. Some say that it was a difficult course to learn

and, therefore, are not fond of the course.

Benefits. This sub-scale had four items, which were positively framed. As shown in **Figure 4**, item 28 (Classroom assessment will be useful to me as a teacher) had the highest mean value. This is because a majority of the student teachers believed that classroom assessment would be useful to them as teachers. This view was shared by Guskey [16], who noted the different benefits of classroom assessment to students and teachers. Item 29 (Classroom assessment course will allow me to advocate for sound assessment practices in schools) had the lowest mean value in this sub-scale. This may be because the student teachers did not seem to know how the course would enable them to promote sound assessment practices when they teach in different schools.

Accountability. This sub-scale had five items, which were all positively framed. As seen in **Figure 5**, item 33 (Assessment is used to hold schools & teachers accountable) had the highest mean value, indicating that most of the student teachers agreed that schools and teachers are held accountable. Brown's [14] study showed that teachers in New Zealand showed their disapproval of the notion of student accountability. However, Remesal's [23] study supported the notion of accountability of teachers and schools. Brown and Remesal's [13] study also revealed the conceptions of assessment as it pertains to making schools and teachers more accountable, as well as making students accountable for their learning. On the other hand, item 30 (Assessment is used to determine student performance) had the lowest mean, which showed that most of the student teachers disagreed. The researchers could not determine why many disagreed with this item.

The independent samples *t*-test was used to compute the difference in the student teachers' conceptions of classroom assessment. Of the five sub-scales, the irrelevant result revealed a difference between the male ($M = 25.8$, $SD = 2.19$) and female student teachers ($M = 24.8$, $SD = 2.71$), $t(109)$, 2.019, $p = 0.023$. Furthermore, one-way analysis of variance (ANOVA) was used to test for differences



Figure 4. Student teachers' responses to benefits of assessment items.



Figure 5. Student teachers' responses to accountability items.

in the student teachers' responses to conceptions of classroom assessment (sub-scale) and their age range, area of specialization, and year in the program. The results did not reveal any differences in student teachers' conceptions of assessment with regard to *age range* [$F(2, 108), 1.344, p = 0.265$]; *area of specialization* [$F(3, 107), 0.481, p = 0.696$]; and year in the program [$F(2, 108), 0.834, p = 0.437$]. The only study that examined the differences in teachers' conceptions of assessment was done by Brown and Harris [25] in New Zealand. Their results revealed that differences between the primary and intermediate students and high/secondary students were attributed to the older students' beliefs/conceptions of classroom assessment and "how assessment is used in their school environment" [25] (p. 46). Monteiro *et al.* [5], on the other hand, found out that "students' conceptions of assessment focused on the accountability factor, that is, student accountability and school accountability.

4.4. Limitations of the Study

Not all students in the teacher education programs participated. Therefore, the results cannot be generalized to all student teachers in the Faculties of Education and Liberal Studies and Science and Sport at the University of Technology, Jamaica. Furthermore, the researchers did not manipulate or control the independent variables due to the design used. This was addressed gender, age range, area of specialization, and year of program were used as independent variables.

5. Conclusion and Recommendations

5.1. Conclusion

The main purpose of this study was to determine the student teachers' knowledge of and conceptions of classroom assessment. The results showed that the student teachers had some knowledge of classroom assessment, and a majority of them disagreed about taking more courses in classroom assessment in order to be assessment literate. The independent samples *t*-test result did not reveal any difference between the male and female student teachers' responses to knowledge of classroom assessment. Similarly, the ANOVA test did not reveal any differences in age range, area of specialization and year in the program. Regarding the student teachers' conceptions of classroom assessment, the results showed that they were between disagree and agree as it pertains to their views on irrelevant, teaching and learning, benefits of classroom assessment, and accountability. The results of the independent samples *t*-test showed a significant difference when it comes to the irrelevant sub-scale between the male and female student teachers. However, the ANOVA test did not show any differences in the student teachers' responses to conceptions of classroom assessment (sub-scale) and their age range, area of specialization, and year in the program.

5.2. Recommendations

It is recommended that the educators in the teacher education program be proac-

tive and deliberate in informing the student teachers about using classroom assessment results to improve the teaching and learning process and the usefulness of taking additional assessment courses to be assessment literate. It is also recommended that educators advise the student teachers about the need to advocate for sound assessment practices in schools they will be assigned to teach upon graduation. It is essential to inspire the student teachers when they are still in training so that they will have the correct knowledge, beliefs, and conceptions of classroom assessments and be able to conduct sound classroom assessment practices like people who are assessment literate.

Conflicts of Interest

The authors declare no conflicts of interest.

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