

Authentic assessment practices among senior high school physical education teachers in Eastern Ghana: Tools, gender, and educational level differences

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ABSTRACT

This study seeks to investigate authentic assessment procedures utilised by senior high school physical education instructors in the Eastern Region of Ghana, emphasising the tools employed, gender disparities, and the impact of educational attainment. The study utilises a quantitative research methodology and a descriptive survey design to gather extensive data about existing evaluation methods within a specified demographic. The population consists of all 234 senior high school physical education teachers in the region, using a census sample to include every eligible participant, ensuring comprehensive representation of assessment practices and minimising sampling bias. Data gathering utilises the Mintah Physical Education Authentic Assessment Inventory (MPEAAI), a structured tool validated by expert evaluation and reliability testing, designed to quantify assessment frequency, perceptions, and demographic data. Data analysis utilises IBM SPSS Statistics version 26, applying descriptive statistics to identify prevalent assessment tools and inferential statistics, including the Mann-Whitney U test, to examine differences related to gender and educational qualifications. The findings are anticipated to underscore standard assessment practices and reveal notable demographic impacts, providing insights into areas that require professional development and resource support. The study reveals that educators primarily rely on conventional, observable evaluations, such as checklists and observations, with minimal use of varied performance-based instruments. Recommendations include improved teacher training, policy changes, and resource allocation to facilitate the broader implementation of authentic assessment techniques in Ghanaian physical education, with the ultimate goal of enhancing student competencies and comprehensive development.

Keywords: Assessment techniques, Authentic assessment, Physical education, Teacher education

1. INTRODUCTION

Assessment in education is crucial for evaluating student learning, directing instructional strategies, and shaping educational policies (Bordoh, 2023; Bordoh, 2025; Meng, 2023). Traditional assessment methods, predominantly comprising summative tests and examinations, have historically prevailed in schools worldwide, including those in Ghana. However, these conventional techniques often fail to capture the intricacies of student skills, self-concept, motivation, and practical competencies, particularly in dynamic disciplines such as physical education (PE). This inadequacy has led educators and researchers to investigate more holistic, meaningful, and student-centred assessment methodologies referred to as authentic assessments.

Authentic assessment is grounded in constructivist learning theories, which highlight real-world tasks that foster active student engagement, self-reflection, and the application of skills in practical contexts (Meyer, 1992; Lopez-Pastor et al., 2013; Bordoh et al., 2015; Kankam et al., 2014). In contrast to conventional assessments that emphasise rote memorisation and decontextualised enquiries, genuine assessment methods encompass tasks including portfolios, demonstrations, presentations, observations, and student-led projects that reflect real-world issues. These methods aim to assess knowledge, skills, attitudes, and self-perceptions—crucial components in disciplines such as physical education, where practical and psychological traits are fundamental to student growth. In physical education, authentic assessment promotes students to exhibit motor skills, devise strategies during gameplay, engage actively, and evaluate their progress. Consequently, authentic assessment cultivates motivation, improves self-concept, facilitates skill acquisition, and fosters enduring behaviours related to health and fitness (Mintah, 2003). Its implementation corresponds with contemporary educational paradigms that emphasise competency-based and student-centred learning.

In Ghana, the significance of evaluation in education has been emphasised through legislative reforms and curriculum modifications designed to produce competent graduates. Nonetheless, the primary reliance remains on conventional testing methods, which may be insufficient to assess the practical competencies and dispositions of physical education students. Numerous studies have highlighted the limited application and implementation challenges of authentic



evaluation techniques in Ghanaian educational institutions (Kankam et al., 2014; Aliningsih & Sofwan, 2015). Resource restrictions, insufficient teacher training, policy limitations, and challenges in classroom management hinder the widespread implementation of alternative evaluation methodologies. Considering the importance of physical education in enhancing health, fitness, and comprehensive development, a genuine evaluation is especially pertinent. It enables educators to assess not only knowledge but also pupils' physical abilities and psychosocial characteristics, which are essential to their well-being. Therefore, understanding the authentic assessment practices of physical education teachers and the factors that affect their implementation is essential for enhancing the curriculum and supporting teacher professional growth.

2. STATEMENT OF THE PROBLEM

Notwithstanding the acknowledged advantages of authentic assessment in physical education, its implementation by educators in Ghana is inconsistent and limited. The current study reveals that several educators predominantly depend on observable methods, such as instructor observation and checklists, with less exploration of alternative authentic instruments, including portfolios, exhibitions, or student self-assessment procedures (Mintah, 2003). Multiple factors, including insufficient professional training in authentic assessment methodologies, inadequate resources, large class sizes, and inflexible curricular requirements, contribute to this scenario. In the Eastern Region of Ghana, where numerous senior high school students engage in physical education as part of their curriculum, there is limited empirical evidence regarding the assessment instruments utilised by physical education teachers. Furthermore, there is limited knowledge regarding the impact of demographic characteristics, such as gender and educational qualifications, on the selection of assessment procedures. Understanding these elements is essential, as they can guide targeted interventions, capacity-building initiatives, and policy changes to enhance assessment methods. Moreover, as educational goals increasingly prioritise comprehensive student development—covering skills, self-perception, and motivation—it is essential to analyse the extent to which educators employ authentic assessment techniques. The lack of such insights impedes the promotion of best practices in PE assessment, hence impacting student learning outcomes. This study aims to investigate the authentic assessment procedures employed by senior high school physical education instructors in the Eastern Region of Ghana, focusing on the instruments used and analysing the impact of gender and educational attainment on assessment decisions. This project aims to identify prevalent assessment procedures and analyse the impact of demographic factors on their selection, thereby offering empirical information to inform policy, teacher training, and curriculum development in Ghanaian secondary schools.

2.1. Objectives of the study

The objectives of this study are as follows:

1. Identify and describe the authentic assessment tools used by senior high school PE teachers in the Eastern Region of Ghana.
2. Examine whether there are statistically significant differences between male and female PE teachers in their choice and use of authentic assessment tools.
3. Investigate whether a significant difference exists in assessment tool choice among teachers with varying educational qualifications.

2.2. Research questions

1. What are the authentic assessment tools used by senior high school PE teachers in the Eastern Region of Ghana?
2. Are there statistically significant differences in authentic assessment practices based on teachers' gender?
3. Are there statistically significant differences in authentic assessment practices based on teachers' educational levels?

2.3. Hypotheses

In making formal inquiries into the relationships between demographic factors and assessment practices, the study proposes the following hypotheses:

- **Null Hypothesis (H₀):** There is no significant difference between male and female teachers in their choice and use of authentic assessment tools in PE classrooms.
- **Alternative Hypothesis (H₁):** There is a significant difference between male and female teachers in their choice and use of authentic assessment tools in PE classrooms.
- **Null Hypothesis (H₀):** Teachers' educational levels do not significantly influence their choice of authentic assessment tools in PE.
- **Alternative Hypothesis (H₁):** Teachers' educational levels significantly influence their choice of authentic assessment tools in PE.

2.4. Significance of the study

Comprehending genuine assessment methodologies among Ghanaian Senior High School Physical Education instructors carries significant ramifications. Initially, it elucidates existing practices, highlighting areas requiring professional development and policy assistance. Assessment significantly influences pedagogical tactics and student motivation; therefore, ensuring that educators employ a variety of practical and authentic tools can improve student achievement in physical education. Secondly, recognising demographic factors yields specific insights; for example, if educators with advanced credentials utilise a broader range of evaluation methodologies, training programs can be customised to enhance the capabilities of less qualified teachers. Moreover, the findings contribute to the existing knowledge on education in Ghana, aligning with global trends that favour authentic, competency-based assessment in physical education and other disciplines. They emphasise the need to incorporate novel assessment methodologies into teacher training programs, ensuring prospective educators are prepared to promote comprehensive student growth. Ultimately, policymakers and educational stakeholders can utilise these findings to amend assessment policies, enhance resource allocation, and structure in-service training that prioritises varied assessment methodologies.

3. LITERATURE REVIEW

3.1. Theoretical framework supporting the study

This study on authentic assessment practices among Senior High School (SHS) physical education (PE) teachers in Eastern Ghana is grounded in several educational theories that elucidate how assessment influences teaching and learning processes. These theories provide a foundation for understanding the differences in tools, gender, and educational level observed in assessment practices. Constructivist Learning Theory (Piaget, 2013; Von Glasersfeld, 1990) serves as the cornerstone of authentic assessment. It posits that learners construct knowledge actively through meaningful experiences, reflection, and practice. Authentic assessments—such as skill demonstrations, portfolios, and projects—align with this theory because they require students to apply skills in real-world contexts, fostering more profound understanding and engagement. For teachers, this means adopting assessment tools that reflect practical, performance-based activities better to evaluate students' competencies beyond traditional paper-and-pencil tests.

3.2. Assessment for Learning (AfL)

Assessment for Learning (AfL), as articulated by Black and Wiliam (1998), emphasises formative assessment practices that inform teaching and enhance student learning. This approach advocates for ongoing feedback, self-assessment, and peer assessment, which help students recognise their progress and areas needing improvement. In the context of physical education, authentic assessments—such as peer observation or performance tasks—serve as tools for ongoing formative evaluation, thereby motivating students and enhancing their skill development.

3.3. Motivational theories,

Motivational Theories, particularly Self-Determination Theory (Deci & Ryan, 1985), provide insights into how assessment practices influence student motivation. Authentic assessments that are relevant and student-centred fulfil psychological needs for autonomy, competence, and relatedness. When PE teachers employ diverse assessment tools that allow students to demonstrate their abilities authentically, students tend to be more motivated, engaged, and confident—factors crucial to effective physical development.

3.4. Gender and educational level differences

Gender and Educational Level Differences in assessment practices can be explained through the Diffusion of Innovation Theory (Rogers, 1962) and Socio-Cultural Theories. Rogers' theory suggests that individuals adopt new practices such as authentic assessment tools—at different rates, influenced by social and cultural factors, including gender roles and educational background. Teachers of different genders or educational levels may have varied perceptions, attitudes, and competencies regarding authentic assessment, which can influence their assessment choices and decisions. Similarly, teachers with higher educational qualifications might be more acquainted or comfortable with diverse assessment strategies, leading to differences in practice compared to those with lower qualifications.

3.5. Constructive alignment

Constructive Alignment (Biggs, 1996) emphasises the importance of congruence among assessment tools, learning activities, and learning outcomes. Teachers' choices of assessment tools are influenced by their understanding of curriculum goals and their beliefs about practical evaluation. Differences across tools, gender, and educational levels can impact how well assessment practices align with student needs and learning objectives.

3.6. Relevance to the study's findings

Applying these theories clarifies why specific assessment tools are favoured among PE teachers and how personal and contextual factors such as gender and educational background—impact assessment practices. For example, the constructivist and AfL frameworks explain the shift toward performance-based and self-assessment tools, which enhance

student motivation and skill acquisition. The motivational perspective clarifies the positive impact of authentic assessment on students' self-concept and self-regulation, aligning with findings that authentic assessments boost student engagement. Furthermore, diffusion of innovation and socio-cultural theories help to interpret gender and educational level differences, highlighting that teachers' perceptions, training, and cultural norms shape the adoption of authentic assessment strategies. Teachers with higher educational qualifications are often more exposed to modern assessment practices and are thus more inclined to implement diverse, authentic tools compared to their less qualified counterparts.

4. RESEARCH METHOD

4.1. Research approach

This study employs a quantitative research methodology to comprehensively investigate the utilisation of authentic assessment procedures by senior high school physical education instructors in the Eastern Region of Ghana. The quantitative method is suitable for measuring teachers' evaluation procedures and for statistically examining variations by gender and educational level, as the research questions are designed to uncover patterns and linkages within the data (Creswell & Creswell, 2017). Quantitative approaches enable the objective measurement and application of statistical tools, such as the Mann-Whitney U test, to assess the significance of observed differences.

4.2. Research design

A descriptive survey approach was utilised, enabling the researcher to gather data on the existing evaluation processes of physical education teachers across various schools in the region. This design effectively provides a comprehensive overview of the utilisation, perceptions, and disparities in the use of authentic evaluation tools across various populations (Ary, Jacobs, & Sorensen, 2010). It allows the researcher to delineate the frequency and categories of evaluation instruments employed methodically and to analyse variances based on established factors.

4.3. Population of the study

The population comprised all public senior high school physical education instructors in the Eastern Region of Ghana. Official records from the Ghana Education Service (GES) indicate that there are roughly 234 physical education instructors in the region (Education Office, 2019). The entire population was selected to ensure thorough coverage and facilitate census methodology, thereby enhancing the precision and representativeness of findings on assessment practices in the region (Mugenda & Mugenda, 2003).

4.4. Sampling techniques

Due to the finite population, a census sample method was employed, encompassing all 234 eligible PE teachers in the study. This method is optimal when the population size is feasible and seeks to eradicate sampling error, thereby offering a comprehensive overview of genuine assessment methods among educators in the region (Fraenkel, Wallen & Hyun, 2012). It ensures that the collected data accurately reflect the entire population, thereby enhancing the credibility of comparative analyses of gender and educational attainment.

4.5. Instruments for data collection

Data were gathered using a structured tool, the Mintah Physical Education Authentic Assessment Inventory (MPEAAI), developed by Mintah (Mintah, 2013). The measure consists of three components: demographic information, frequency of use of the assessment tool, and perceptions of the influence of assessments on pupils. Section B utilises a five-point Likert scale to rate the frequency of authentic assessment tool usage (for example, portfolios, group projects). The instrument's validity was confirmed through expert evaluation, and its reliability was verified in a pilot study, yielding a Cronbach's alpha of 0.87, indicating high internal consistency (Nunnally, 1978). This tool was chosen for its alignment with the evaluation processes of physical education teachers and for effectively encompassing both frequency and perception characteristics relevant to the study.

4.6. Data analysis

The survey data were coded and entered into IBM SPSS Statistics version 26 for analysis. Descriptive statistics, including frequencies and percentages, were utilised to identify the most frequently applied assessment instruments. Inferential statistics, notably the Mann-Whitney U test, were employed to address the enquiry into variations in assessment techniques by gender and educational level. This nonparametric test was used because it makes no assumptions about normality and is appropriate for ordinal Likert-scale data (Conover, 1999). It accurately analyses the distributions of two independent groups and assesses whether there are significant differences in the utilisation of evaluation tools across gender and educational levels.

5. FINDINGS AND DISCUSSION

The study recognised the relevance of demographic factors, as most of these influence the variables under analysis. A summary of the demographic characteristics is presented in Table 1 below. This chapter presents the results, findings, and their discussion.

Table 1: Demographic characteristics of respondents

Variables	Category	Frequency	Percent
Gender	Male	179	81.0
	Female	41	19.0
	Total	220	99.5
Education	Bachelor	196	89.1
	Masters	24	10.9
Level	Form 1	76	34.5
	Form 2	111	50.5
	Form 3	5	2.3
	Two classes	28	12.7
Years Taught	1-5 years	35	15.9
	6-10 years	25	11.4
	11-15 years	66	30.0
	16 and above	94	42.7
Years of Teaching PE	1-5 years	77	35.0
	6-10 years	65	29.5
	11-15 years	60	27.3
	16 and above	18	8.2
Years of Teaching in the Present School	1-5 years	101	45.9
	6-10 years	79	35.9
	11-15 years	35	15.9
	16 and above	5	2.3
	Total	220	100.0

A total of 234 Physical Education Teachers participated in the study. Among the participants in this study, 14 (5.98%) reported not using authentic assessment and provided reasons for their choice. The 220 respondents who indicated they use authentic assessment served as the basis for the analysis. One hundred and seventy-eight (178; 81%) were males, and 42 (19%) were females. The respondents' educational levels were as follows: 196 (89%) had a bachelor's and master's degree, and 24 (11%) had a bachelor's degree. Considering the current form in which they teach, 78 (35%) teach in Form One, 111 (50%) teach in Form Two, 5 (2%) teach in the third-year class, and 28 (13%) teach in two classes. The data revealed that participants' years of teaching experience ranged from one to 16 years ($M = 3.00$, $SD = 1.09$). Further analysis revealed that 35 teachers (16%) had 1-5 years of teaching experience. For the 6-10years, a maximum of 25 (11%) was recorded. Again, for 11-15 years of teaching experience, 66 (30%) were found, and finally, for those with 16 or more years of teaching experience, 94 (43%) were recorded. In terms of physical education teaching experience, 101(46%) have taught PE between 1-5 years, 79 (35.9%) had taught for 6-10years, 35(15.9%) between 11-15years, and 5(2.3%) had taught for 16years or above. From the data collected, the participants years of teaching in present schools were 1-5years 101(46%), 6-10years 79 (36%) 11-15years 35 (16%) and 16 & above had only 5(2%).

The mean and standard deviation of participants' years of teaching experience (ranging from 1 to 16) were calculated. The participants' years of teaching were $M = 3.00$ and $SD = 1.09$. For participants' years of teaching physical education as a subject, $M = 2.09$ and $SD = 0.93$. The respondents' years of teaching physical education in the present school had a mean of $M = 1.75$ and a standard deviation of $SD = 0.81$. In addition to the participants' demographic characteristics, the following research questions were considered.

5.1. Findings

5.1.1. Type of authentic assessment techniques

This section examines the types of authentic assessment techniques used by Public SHS Physical Education Teachers in the Eastern Region of Ghana. A total of 234 Physical Education Teachers participated in the study. The 220 respondents who indicated they use authentic assessment served as the basis for the analysis. To explore the types of authentic assessment techniques used by public SHS physical education teachers in the Eastern Region of Ghana, frequency distribution tables were used to represent the distribution of questionnaire responses visually. Table 4.2 presents the frequencies of each authentic assessment technique used by the researcher participants.

Table 2: Frequency distribution of authentic assessment techniques usage

Techniques	Never	Rarely	Sometimes	Often	Always
Teacher Observation	0%	2(1%)	14(7%)	57(26%)	143(65%)
Demonstration	4(2%)	0%	22(10%)	53(24%)	139(63%)
Oral Discourse	4(2%)	14(7%)	66(30%)	66(30%)	68(31%)
Check List	9(4%)	22(10%)	70(32%)	53(24%)	66(30%)
Event Task	4(2%)	14(7%)	66(30%)	66(30%)	66(30%)
Peer Observation	7(3%)	13(6%)	88(40%)	62(28%)	51(23%)
Group Project	4(2%)	11(5%)	97(44%)	62(28%)	48(22%)
Student Project	7(3%)	11(5%)	95(43%)	66(30%)	44(20%)
Student Log	18(8%)	40(18%)	84(38%)	51(23%)	29(13%)
Videos	59(27%)	48(22%)	59(27%)	33(15%)	22(10%)
Potfolios	26(12%)	59(27%)	66(30%)	44(20%)	24(11%)
Parental Reports	62(28%)	46(21%)	66(30%)	26(12%)	20(9%)
Written Essays	18(8%)	31(14%)	117(53%)	37(17%)	14(9%)
Anecdotal Records	31(14%)	48(22%)	86(39%)	40(18%)	18(8%)

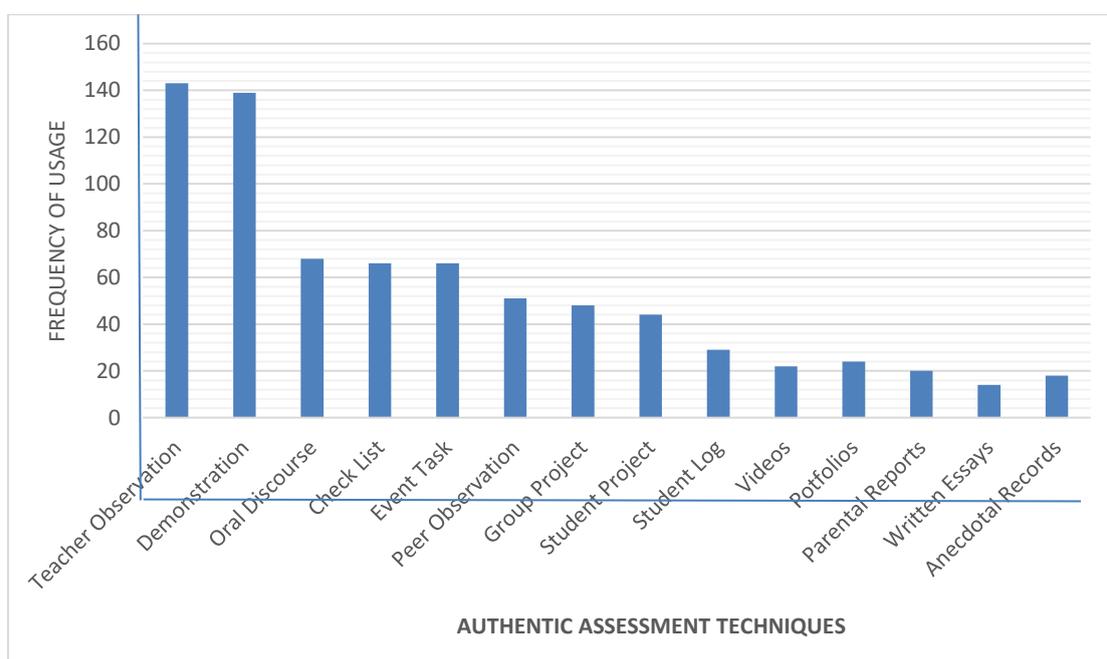


Figure 1: Usage of Authentic Assessment Techniques Usage

From Table 2 and Figure 1, 143 (65%) respondents always use teacher observation, while none reported never using it. 139 (63%) always use Demonstration while 2 (1%) of them indicated never, 31 (14%) always use Oral Discourse while 4 (2%) of them indicated never, 66 (30%) always use Check List while 9 (4%) of them indicated never, 66 (30%) always use Event Task while 4 (2%) of them indicated never. These traditional, authentic assessment techniques, often used by physical education teachers, appear similar to those used by most research participants because the curriculum dictates them. On the other hand, 51 (23%) always use Peer Observation. In comparison, 7 (3%) of them indicated never, 48 (22%) always use Group Project. In comparison, 7 (3%) of them indicated never, 44 (20%) always use Student Project while 7 (3%) of them indicated never, 29 (13%) always use Student Log. In comparison, 7 (3%) of them indicated never, 22 (10%) always use video while 59 (27%) of them indicated never, 24 (11%) always use Potfolios while 26 (12%) of them indicated never, 20 (9%) always use Parental Reports. In comparison, 62 (28%) of them indicated never, 20 (9%) always use Written Essays while 18 (8%) of them indicated never and 18 (8%) always use Written Essays while 31 (14%) of them indicated never. The remaining techniques, which assess how well a student demonstrates the ability to complete tasks and solve problems required outside the classroom, are rarely used by many physical education teachers. Therefore, the main goal of authentic assessment, which is to determine if students' knowledge can be applied outside of the classroom, is never realised since the focus of student learning is based on their performance of physical education and sports skills in class rather than the full range of students' abilities as it relates to real-world endeavours. Fourteen participants who reported a lack of engagement with authentic assessment identified various contextual barriers to implementing these methods. Their primary concern is the insufficient availability of resources and training, which restricts their ability to utilise various assessment tools effectively. Time constraints and large class sizes posed considerable challenges, hindering thorough, individualised assessments. Additionally, there was scepticism regarding the effectiveness of

authentic assessment strategies within current systemic and policy frameworks, highlighting a lack of institutional support and clarity in assessment guidelines. The identified reasons underscore the necessity for focused professional development, enhanced resource allocation, and supportive policy reforms to overcome barriers and facilitate the broader implementation of authentic assessment practices in physical education.

5.1.2. Differences by gender in teachers' choices of authentic assessment usage

To investigate statistically significant gender differences in teachers' use of authentic assessment, the Mann-Whitney U test was used. The results showed a statistically significant difference between participants' gender and group project, as indicated by a Mann-Whitney U test ($U = 3018.00, p < 0.05$). No statistically significant difference was found between gender and the use of any of the authentic assessment techniques, with all p -values > 0.05 . The data showed that males ($MR = 114.39$) used group projects more frequently than females ($MR = 94.00$). Thus, male physical Education teachers use group projects more than their female colleagues (Table 4).

Table 3: Gender and choice of authentic assessment techniques by teachers

Variables	Gender	N	Mean Rank	Mann-Whitney U	Sig
Teacher observation	Male	177	111	3540.000	.568
	Female	42	105.79		
Peer observation	Male	177	107.01	3187.000	.130
	Female	42	122.62		
Check list	Male	177	109.54	3635.000	.817
	Female	42	111.95		
Event task	Male	177	110.58	3613.500	.770
	Female	42	107.54		
Student log	Male	177	106.52	3100.500	.082
	Female	42	124.68		
Demonstration	Male	177	112.09	3347.000	.242
	Female	42	101.19		
Written essays	Male	177	111.4	3469.500	.465
	Female	42	104.11		
Potfolios	Male	177	111.9	3381.000	.348
	Female	42	102		
Parental reports	Male	177	108.68	3482.500	.512
	Female	42	115.58		
Student project	Male	177	111.71	3415.000	.385
	Female	42	102.81		
Group project	Male	177	113.95	3018.000	.044**
	Female	42	93.36		
Anecdotal records	Male	177	111.37	3475.000	.495
	Female	42	104.24		
Videos	Male	177	112.68	3243.000	.187
	Female	42	98.71		
Oral discourse	Male	177	111.99	3364.000	.317
	Female	42	101.6		
	Total	219			

Source: Field data (2019).

5.1.3. Educational level in teachers' choices of authentic assessment usage

To analyse statistically significant differences in teachers' educational levels regarding their choice of authentic assessment, Mann-Whitney U statistics were calculated. The analysis showed a statistically significant relationship between respondents' academic level and their use of the student log as an authentic assessment tool. Mann-Whitney U 3018.000, ($p < 0.05$). The data revealed that physical education teachers with a bachelor's degree (MR = 110.56) use group projects more frequently than those with a master's degree (MR = 110.04). A statistically significant difference was observed in the use of other authentic assessment techniques (Table 4).

Table 4: Teachers' educational level and authentic assessment techniques choices

Variable	Educational Level	N	Mean Rank	Mann-Whitney U	Sig
Teacher observation	Bachelor	196	110.09	3540.000	.568
	Masters	24	113.83		
Peer observation	Bachelor	196	109.06	3187.000	.130
	Masters	24	122.25		
Check list	Bachelor	196	111.46	3635.000	.817
	Masters	24	102.65		
Event task	Bachelor	196	111.19	3613.500	.770
	Masters	24	104.83		
Student log	Bachelor	196	106.47	3100.500	.082
	Masters	24	143.38		
Demonstration	Bachelor	196	111.12	3347.000	.242
	Masters	24	105.44		
Written essays	Bachelor	196	110.38	3469.500	.465
	Masters	24	111.46		
Portfolios	Bachelor	196	108.97	3381.000	.348
	Masters	24	122.98		
Parental reports	Bachelor	196	109.9	3482.500	.512
	Masters	24	115.42		
Student project	Bachelor	196	111.58	3415.000	.385
	Masters	24	101.71		
Group project	Bachelor	196	110.56	3018.000	.044**
	Masters	24	110.04		
Anecdotal records	Bachelor	196	110.23	3475.000	.495
	Masters	24	112.71		
Videos	Bachelor	196	111.77	3243.000	.187
	Masters	24	100.15		
Oral discourse	Bachelor	196	109.7	3364.000	.317
	Masters	24	117.04		
	Total	220			

Source: Field data (2019).

5.2. Discussion

5.2.1. Authentic assessment techniques among teachers

The widespread implementation of teacher observation and demonstration as fundamental, authentic assessment methods in physical education (PE) can be comprehensively analysed through various interrelated educational theories, especially those grounded in constructivism, performance-based assessment, socio-cultural viewpoints, and principles of formative assessment.

Constructivist theory, as defined by von Glasersfeld (1990), holds that learners actively construct knowledge through meaningful participation and social interaction. In the realm of physical education, this is demonstrated through practices in which students exhibit abilities and actively engage in physical activities. Teachers, shaped by this paradigm, depend on observation and example, as these methods necessitate active student participation in physical tasks, allowing learners to develop comprehension through performance.

Teacher observation aligns with the constructivist perspective on formative assessment, in which educators assess students' abilities in real time, providing prompt feedback that promotes learning adaptation and skill enhancement (Frey et al., 2012). This observation is both evaluative and diagnostic, enabling teachers to understand each student's progress, areas for improvement, and conceptual understanding of movement skills. Demonstration functions as a modelling exercise based on social learning theory (Bandura, 1977), in which students observe exemplary performance to comprehend intricate skills, then strive to replicate or internalise these behaviours.

The focus on observable behaviours and active engagement in physical education underscores the theoretical foundation of performance-based assessment, which asserts that the concrete exhibition of abilities or behaviours indicates mastery and comprehension (Gulikers et al., 2005). Physical Education (PE) encompasses activities best illustrated by visible actions; hence, it prioritises assessment methods such as demonstration and observation, which directly evaluate students' capacity to execute and replicate skills in genuine contexts. Performance-oriented assessment aligns with the constructivist viewpoint that learning is demonstrated through activity and that assessment should reflect real-world applications. When students undertake physical tasks during evaluations, they engage in authentic activities that reflect real-world physical demands, thereby enhancing their preparedness for lifelong physical engagement.

The physical education class milieu significantly influences evaluation methodologies. Socio-cultural theories (Vygotsky, 1978) emphasise the significance of social interaction and cultural instruments in the learning process. Physical education environments, characterised by peer observation and collaborative activities, inherently facilitate assessment techniques such as peer evaluation, group tasks, and oral communication. Educators utilise these social dynamics to promote collaborative learning and genuine evaluation methods that acknowledge both individual and collective accomplishments, thereby conforming to socio-cultural norms of mediated learning. The curriculum emphasises demonstration, description, and peer observation procedures due to socio-cultural factors, framing assessment as a collaborative endeavour grounded in social interaction and the practical application of skills.

The primary objective of educators is typically formative, facilitating continuous learning. However, many also integrate summative evaluation for grade and advancement decisions, particularly in environments where physical education is not explicitly assessed (Ministry of Education, 2001). The resolution of this gap can be examined via the perspective of evaluation as a dual-function endeavour, as proposed by Frey et al. (2012). Formative assessment methods, including observation and demonstration, enable instructors to continuously monitor student progress, fostering a growth mindset aligned with constructivist and authentic assessment philosophies. In systems where evaluations impact student advancement, such as in Ghanaian schools, educators often rely on observable behaviours to inform summative assessments. This duality exemplifies the practical application of both formative and summative assessment theories, with assessment activities designed to engage learners and inform judgements regarding student competencies.

The limited application of advanced assessment methods, including films, portfolios, parental reports, and written essays, despite a firm reliance on observation and demonstration, can be elucidated through expectancy-value theory (Eccles & Wigfield, 2002) and socio-cultural factors. These methods necessitate formal documentation, technology resources, and the engagement of external stakeholders. Their restricted use indicates systemic problems, policy constraints, resource deficiencies, or unfamiliarity with these instruments, rather than a fundamental opposition to their theoretical advantages. Frey et al. (2012) propose incorporating digital assessment methods, such as videos, to enhance realistic, formative assessment, particularly in remote or hybrid learning environments. These strategies enhance constructivist and performance assessment principles by providing concrete evidence of student learning in real-world contexts and by facilitating feedback mechanisms that promote self-regulation, introspection, and motivation, fundamental elements in realistic assessment discussions.

It is essential to recognise that the instrument used in this study assessed the frequency of use and teachers' perceptions of assessment tools. However, it did not empirically investigate the direct causal factors underlying the limited use of specific authentic assessment instruments, including videos and parental reports. This study did not assess factors such as funding for technology, the availability and accessibility of professional development workshops, or specific structural rigidities within the curriculum. Consequently, attributing limited tool usage to these factors is based on inference rather than empirical validation. Future research should focus on examining the underlying causal factors using targeted

analytical methods to enhance the understanding of the barriers to implementing diverse assessment techniques.

5.2.2. Gender influence on choice of authentic assessment tools

The results suggest that male educators employ group projects more often than their female counterparts, which can be interpreted through multiple educational theories. Constructivist philosophy posits that learning is an active, social endeavour, with teachers facilitating this through collaborative activities such as group projects (Vygotsky, 1978). The increased inclination of male educators to employ group projects may indicate a constructivist perspective that prioritises social interaction for enhanced learning. Socio-cultural perspectives suggest that gender roles and societal expectations influence teaching methodologies; males may be more inclined to adopt collaborative strategies because cultural norms associate masculinity with teamwork and leadership (Liu et al., 2018). Principles of performance-based assessment endorse group projects as genuine assignments that reflect real-world collaborative settings, enhancing student motivation and self-efficacy (Gulikers et al., 2005). The study on Greek teachers suggests that gender influences knowledge regarding assessment. However, it does not substantially affect their assessment decisions, supporting the notion that both genders are influenced by contextual and systemic factors rather than by individual differences. Moreover, motivation theories, such as Self-Determination Theory (Deci & Ryan, 2000), suggest that social evaluation tasks, including group projects, can enhance intrinsic motivation, particularly when collaborative opportunities are encouraged. These theories demonstrate that gender-related disparities in assessment procedures are rooted in social, cognitive, and motivational frameworks, highlighting that intricate interactions between individual identity and socio-cultural factors influence teaching methods.

5.2.3. Influence of teachers' educational level on choice of authentic assessment tools.

The correlation between teachers' educational attainment and their implementation of group projects corresponds with constructivist theory, which prioritises active, learner-centred evaluation methodologies (Vygotsky, 1978). Educators holding a bachelor's degree may be more inclined towards fundamental constructivist principles, which emphasise collaborative learning and authentic assessment methodologies, such as group projects. In contrast, educators with advanced degrees, such as a master's, may implement a broader range of specialised assessment methods, likely indicative of their familiarity with sophisticated pedagogical theories. The research indicated that the Group Project assessment tool was significantly associated with teachers' educational attainment, with a higher frequency of use among teachers with a bachelor's degree than among those with a master's degree. The use of Student Log did not demonstrate a significant difference across educational levels, as evidenced by the non-significant result presented in Table 4. Consequently, Group Project usage is impacted by educational qualifications, whereas teachers' educational attainment does not influence Student Log utilisation. This indicates that professional development initiatives should prioritise the enhancement of assessment skills at all educational levels, while recognising that certain assessment practices, such as Group Projects, are more commonly utilised by teachers with particular qualifications.

6. CONTRIBUTION OF THE STUDY

This study addresses gaps in understanding authentic assessment techniques among senior high school physical education instructors in Eastern Ghana. The report delivers essential insights for educators and policymakers by presenting detailed data on the techniques utilised and the impact of demographic characteristics, such as gender and educational attainment, on assessment decisions. It identifies areas requiring professional training and resource support to improve the implementation of authentic assessment methods, which are crucial for cultivating practical skills, motivation, and comprehensive student development. The research advocates the incorporation of student-centred, competency-based assessment methods into the Ghanaian educational system, consistent with modern educational theories and global best practices. The study's findings can influence targeted interventions, guide curriculum reform, and shape professional development programs that enhance practical, genuine assessments in physical education, ultimately improving student learning outcomes and educational quality in Ghana.

7. IMPLICATIONS OF THE STUDY

This research substantially enhances understanding of the genuine assessment methodologies used by senior high school physical education instructors in Eastern Ghana. It presents empirical data on the instruments used and emphasises the impact of demographic factors on assessment selection. The results can guide policymakers and educators to areas requiring professional development and resource distribution. The study advocates for the implementation of comprehensive, student-focused assessment techniques consistent with contemporary educational philosophies. It provides significant insights for refining assessment procedures and augmenting student learning in physical education in Ghana. This study's findings have important implications for policy development in the education sector, particularly regarding physical education in Ghana. Policymakers must prioritise the creation and execution of comprehensive professional development programs designed to enhance teachers' proficiency in authentic assessment methods. Moreover, policies must ensure that schools have the essential tools and materials to support a range of assessment

strategies. Integrating clear guidelines and standards for authentic assessment into the national curriculum is essential for promoting consistency and effectiveness. Additionally, systemic reforms must tackle structural challenges, including large class sizes and elevated workloads, that impede the effective implementation of these methods. Creating an environment that promotes continuous training, resource accessibility, and clear policies enables education authorities to improve the quality and integrity of assessment practices, thereby leading to more effective student evaluations and enhanced educational outcomes.

8. CONCLUSION

The primary aim of the study was to identify and delineate the authentic assessment instruments employed by senior high school physical education instructors in the Eastern Region of Ghana. The findings indicated the utilisation of many evaluation tools, such as demonstrations, peer observations, group projects, student diaries, and written essays. Nevertheless, conventional approaches such as checklists and observational procedures were more prevalent, suggesting possible underutilisation of varied, performance-based assessments that could more effectively evaluate students' practical abilities and competencies in physical education. This underscores the need for educators to gain greater knowledge and training to integrate a broader array of valid assessment instruments.

The second purpose was to investigate whether statistically significant differences in evaluation techniques existed by teachers' gender. The investigation indicated that gender did not substantially affect educators' selection and utilisation of assessment instruments. Male and female educators exhibited comparable assessment methodologies, indicating that gender did not significantly influence assessment methods in this setting. This conclusion highlights the need for professional development activities to focus on universally enhancing assessment skills, regardless of gender, to promote more uniform and effective evaluation processes.

The final objective examined whether educational attainment affected teachers' evaluation decisions. The findings revealed that educators possessing higher educational credentials or advanced training were more likely to utilise a wider variety of legitimate evaluation techniques than their less qualified counterparts. This indicates that educational achievement favourably influences the diversity and potentially the quality of assessment techniques. Therefore, policymakers want to devise specialised professional development initiatives that improve assessment skills, particularly for educators with limited formal training, to promote more thorough and authentic evaluation practices in physical education. The study emphasises the need for ongoing teacher training and policy support to enhance assessment processes in line with contemporary educational standards.

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