Abstract: Despite the identified benefits of formative assessment to teaching and learning, its implementation in the classroom remains a significant challenge to teachers. This has widened the gap between the theory and practice of formative assessment in the classroom to enhance students’ learning. This study investigated the potential resource-related factors that affect basic teachers’ adoption of formative assessment in their classrooms. A descriptive survey design with a multistage sampling procedure was employed to select 300 teachers from the six circuits in the Cape Coast Metropolis of Ghana. Data gathered were analyzed using descriptive (mean values, SD) and inferential statistics (two-way ANOVA). Time, workload, overcrowded curriculum, class size, and the number of lessons were reported as barriers to the effective implementation of formative assessment. Findings also revealed no statistically significant interaction effect of gender and grade level on the resource-related barriers. Moreover, grade level and gender had no statistically significant main effects with respect to the resource-related barriers. Recommendations and implications for policy, practice, and future research are discussed.

Keywords: formative assessment, school-based assessment, barriers, basic teachers, factor analysis

1 Introduction

In the classroom, one of the foremost central facets of the work of a teacher is evaluating students’ performance (Linn & Gronlund, 2000). Assessment has unceasingly been a vital aspect of education, with studies showing that instructors expend around a third of their teaching time on assessment activities (Butt, 2010). The strategies and procedures that evaluators employ to gauge and chronicle students’ academic keenness, learning advancement, skill acquisition, or education needs are termed assessment (Oluchi, 2018). Formative and summative evaluation are the two prime purposes of school assessment (Yan & Cheng, 2015). Feedback from assessment, according to the Ministry of Education (MoE, 2018, p. 33), benefits a multiplicity of stakeholders; learners (feedback on their learning), teachers (feedback on their instruction), curriculum designers (feedback on the curriculum); and district, regional, and national education directorates (feedback on the utilization of assets). Educational researchers agree that any assessment for which the primacy in its design and practice is to serve the purpose of enhancing pupils’ learning constitutes formative assessment (Black, Harrison, Lee, Marshall, & Wiliam, 2002; Rivai, Ridwan, Supriyati, & Rahmawati, 2019; Taylor, 2017).

Educational policymakers, teachers, and researchers are increasingly engrossed in formative assessment as it mirrors and supports student learning (Birenbaum et al., 2015; Missett, Brunner, Callahan, Moon, & Price Azano, 2014; Wiliam, 2007; Xiao & Yang, 2019; Yan et al., 2021). This is apparent in the fact that it has been incorporated into many countries’ educational assessment practices and evaluation policies (Birenbaum et al., 2015). For instance, countries such as England, Scotland, Germany, New Zealand, and Singapore have enacted policy papers to assist teachers in implementing a more efficient practice of formative assessment. Particularly in Singapore, formative assessment contributes to teachers’ professional development and students’ learning by transferring professional development practices to the lesson plans (Koh, Lim, & Habib, 2010).

1.1 The Ghanaian Educational Context

In Ghana, the National Council for Curriculum and Assessment (NaCCA) in 2018, as mandated by the Ministry of Education,
enacted a new National Pre-tertiary Education Curriculum framework that emphasizes the constructivist approach to learning. This was done to revolutionize teaching and learning as well as augment educational outcomes under the Education Strategic Plan (ESP 2018–2030). These developments are anticipated to contribute to the goals of the ESP and the Sustainable Development Goals (SDG 4) by aggrandizing learning outcomes, particularly at the pre-tertiary level. The revision was carried out to achieve a national goal of moving the country’s educational system of preparing students to pass external examinations towards developing character, fostering values, and producing literate, confident, and involved citizens capable of critical thinking. The present curriculum supplants continuous assessment with School-Based Assessment with an emphasis on Class Assessment Tasks to make assessment encyclopaedic.

This new curriculum necessitates that schools (grades 1–12) move from an accentuation on summative evaluation to the formative, a way of thinking that grasps the need to use many sources of information about learning, which will direct pedagogical decisions and bolster every student’s learning orientation. This curriculum framework further requires that classrooms be changed from teacher-focused to conducive environments that give chances to utilize dialogic learning and instructing approaches (MoE, 2018). This supports Siggins’ (2005) assertion that the aim and style of assessment must alter when the goal of schools changes from ranking pupils to ensuring that all learn to set standards. This has called for effective practice of formative assessment in schools, particularly at the basic level. This implies that classrooms should be student-focused, where students are effectively involved in the learning procedure because teachers embrace fitting ways to planning and classroom practice.

One valid question that readily comes to mind is whether teachers, particularly at the basic level, effectively implement formative assessment strategies in the classroom in line with the new curriculum. Several studies (Akyina & Oduro-Okyireh, 2019; Chen, Zhang, & Li, 2021; Enu, 2021; Ochour, Opoku-Afriyie, & Eshun, 2022) have indicated that there is a significant gap between what the curriculum mandates and what happens in the classroom. Enu (2021) pointed out that there are no adequate measures to ensure its effective integration into the classroom setting in Ghana. This discrepancy has profound consequences for students’ growth and development, as they are expected to become critical thinkers and problem solvers who can contribute meaningfully to their communities and the nation at large. Thus, urgent steps need to be taken to bridge this gap and ensure that formative assessment practices are integrated effectively into classroom instruction to enhance student learning outcomes.

1.2 Literature Review

Studies on the relevance and contribution of formative assessment to classroom teaching and learning have uncovered that the practice of formative assessment doubles the pace of students’ learning, and students’ achievement is concomitant with their teachers’ ability to use formative assessment effectively in their classrooms (Black & Wiliam, 1998; Dunn & Mulvenon, 2009; Looney, Cumming, van Der Kleij, & Harris, 2018; Missett et al., 2014; Stiggins, 2009; Wiliam, 2007). Additionally, Gloria, Sudarmin, Wiyanto, and Indriyanti (2018) established that a well-designed formative assessment has a significant and favourable impact on learners’ motivation and accomplishment, problem-solving skills, independent and creative thinking, learning perseverance, listening with understanding, and empathy. Formative assessment fosters self-learning and provides productive feedback on students’ learning outcomes, thereby significantly influencing students’ motivation and achievement (Dix, 2017). Looney et al. (2018) concluded that through formative assessment, teachers develop an in-depth understanding of the cognitive gaps in students’ learning and aid them in finding new methods for effective teaching, thereby minimizing learning gaps.

Black et al. (2002) and Marshall and Drummond (2006) have noted that successful integration of formative assessment into the teaching and learning activity cannot be attained by compelling teachers to adopt formative assessment strategies. It is indispensable that collaborators such as policymakers, headteachers, and administrators incentivize teachers to ameliorate their formative assessment practices. Researchers are therefore encouraged to develop motives and uncover factors that influence the practice of formative assessment in classrooms and then encourage collaborators to support motives and minify or obviate hinders to facilitate teachers’ formative assessment practices (Izci, 2016). Although teachers may have positive perceptions of the usefulness of formative assessment (Asare, 2020; Crichton & McDaid, 2016; Ho, 2014; Noori, Shafie, Mashwania, & Tareen, 2017; Ochour et al., 2022), other researchers have also documented that a significant number of them for various reasons do not practice formative assessment (Akom, 2010; Alotaibi, 2011, 2019; Bezabih, Yigzaw, & Garad, 2019; Hui, Brown, & Chan, 2017; Izci, 2016; Quyen & Khairani, 2017; Yan & Brown, 2021). According to educators, these factors cause a disconnect between the theory and practice of formative assessment in the classroom. This results in many unexploited prospects to enhance student learning.

Several studies on factors that influence teachers’ integration of formative assessment into the teaching-learning process have been documented by other researchers in other jurisdictions; however, to the best of the researchers’
knowledge, the same cannot be said of the Ghanaian context. To begin with, in Walani's (2009) study in the Solomon Islands, findings revealed no current policy on formative assessment in the schools the sampled teachers were teaching. Teachers indicated large class sizes, heavy workloads, school culture (examination-oriented), educational policies, lack of school facilities, teachers' attitudes, and commitment to formative assessment as the barriers to the effective integration of formative assessment in the classroom. Also, Israel's (2005) work in South Africa also found that teachers experienced difficulties in implementing formative assessment. These difficulties were associated with high workloads and insufficient professional development. This situation supports the discovery by Zalia (2007), who established that most teachers in Tanzania have inadequate skills and knowledge in formative assessment. In Polizzi, Jagernauth, Ray, Callahan, and Rushton (2015) study, teachers stated that a lack of professional training in assessment makes them compromise inquiry-based learning in formative assessment.

Similarly, Kibga's (2004) study on the role of practical assessment in teaching and learning in Tanzania uncovered that the majority of science teachers faced challenges implementing formative assessment. The impediments outlined were lack of knowledge, inadequate teaching and learning resources, high workload, and large class sizes. In Saudi Arabia, Alotaibi's (2011) work on assessment practices in primary schools in science classes outlined the following: larger class sizes, anxiety among students to get higher grades rather than improving their performances, mixed abilities in the classroom, and ambiguity in the guidelines, as factors that hinder teachers from adopting formative assessment. Again, in 2019, Alotaibi's study on teachers' perception of factors that influence the adoption of the formative assessment revealed class size, workload, and availability of assessment materials as barriers that hinder teachers’ practice of formative assessment in the classroom. Likewise, Al-Wassia, Hamed, Al-Wassia, Alafari, and Jamjoom (2015) study on the cultural challenges to implementing formative assessment in the same country revealed workload and time constraints.

In China, Chen et al. (2021) found that at the meso-level, there was inadequate support, ineffective dissemination, and insufficient training. At the micro-level, instructors had limited assessment capabilities, there were large class sizes, and students were resistant. Moreover, Osaki, Hosea, and Ottevanger (2004) found that the majority of teachers experience difficulty in how to practice formative assessment with regard to practical work. This was attributed to a lack of proper teacher preparation and professional development programs for in-service and pre-service teachers. Ni Chroinin and Cosgrave (2012) disclosed the difficulties of teachers in including formative assessment and pointed out constraints such as the insufficient amount of time for planning formative assessment practices and difficulties in choosing the assessment strategies suitable for various students' abilities.

According to classroom assessment researchers, certain important demographic factors influence teachers' views on obstacles to implementing formative assessment in their classrooms. These factors include gender (Alotaibi, 2019) and grade level (Fulmer et al., 2015; Hussain, Shaheen, Ahmad, & Islam, 2019). For instance, in Alotaibi's study, results revealed that female teachers were slightly more receptive to the factors that inhibit the adoption of formative assessment than male teachers. The perceptual differences between male and female teachers were statistically significant. Hussain et al. (2019) also discovered no statistically significant difference in the mean scores of public and private secondary school teachers' classroom assessment challenges. Since different study samples and geographical locations can reveal similar or different results, there is the need to explore factors that inhibit teachers' adoption of formative assessment as well as gender and grade-level differences in the Ghanaian context.

A review of literature in the Ghanaian context regarding factors that inhibit public basic teachers' (i.e., primary and junior high) implementation of formative assessment is limited. Some of the few studies conducted on this phenomenon have concentrated on mathematics college teachers (Enu, 2021) and university lectures (Ankomah & Oduro, 2004). Again, these studies adopted the qualitative approach; however, this present study utilized the quantitative approach to explore the factors that influence teachers' adoption of formative assessment. Against this backdrop and Izci's (2016) recommendation, this study seeks to identify the potential resource-related factors that may affect basic school teachers’ likelihood of adopting formative assessment in their classrooms. In addition, the study seeks to investigate gender and grade-level differences as well as their interaction effect concerning these factors. Owing to the relevance of basic education in providing a strong foundation for lifelong learning (Davis, Ntow, & Becles, 2022) as well as building blocks for higher education, unearthing resource-related impediments to the practice of formative assessment from teachers' viewpoint would first and foremost, aid policymakers; the Ministry of Education and its affiliate agencies such as NaCCA, Ghana Education Service, school administrators, headteachers, and researchers to provide the necessary support system or measures which would necessitate the development of capacity building workshops to improve teachers use of formative assessment to enhance teaching
and learning in the classroom. Furthermore, findings from this study would contribute circumstantial data on the impediments to formative assessment practice in both local and international literature.

2 Research Question and Hypothesis

RQ: What resource-related factors hinder basic school teachers from effectively practising formative assessment strategies in their classrooms?

H₀: There are no statistically significant gender and grade-level differences as well as their interaction effect with respect to these factors.

3 Methodology

3.1 Design and Participants

The study employed a descriptive cross-sectional survey design since the study is primarily a survey of resource-related factors that affect basic teachers’ implementation of formative assessment. A sample of 300 teachers from a target population of 1,006 public Primary (grades 1–6) and Junior High (grades 7–9) school teachers from the six circuits in the Cape Coast Metropolis was obtained for the study through a multistage sampling procedure. Using cluster sampling in the first stage, the schools were divided into six clusters (i.e., Cape Coast, Aboom, Bakaano, Ola, Pedu/Abura, and Efutu). In the second stage, 61 schools were selected randomly from the six clusters using simple random sampling. Proportional stratified sampling was used to ensure an equal representation of gender in each circuit. Finally, 300 teachers were selected from the chosen schools using simple random sampling. It is worth noting that teachers in special schools were excluded from the study. There were more female teachers, 189 (63%; $M = 17.54, SD = 4.58$) than their male counterparts, 111 (37%; $M = 17.79, SD = 3.92$). Regarding grade level, the majority (159) represented Junior High teachers (53%), while 141 (47%) represented Primary teachers. Regarding teaching experience, 165 (55%) teachers had more than 11 years of experience, followed by 84 (28%) teachers with 6–10 years of experience and 51 (17%) teachers with not more than 5 years of experience (Asare, 2020).

4 Data Collection Instrument

Guided by literature (e.g., Alotaibi, 2019; Izci, 2016), a 7-item Resource-related Barriers to Teachers’ Adoption of Formative Assessment Scale (RTAFAS) was developed and used for the study. The instrument development was based on the resource-related component of Izci’s (2016) framework. It was measured on a 4-point Likert scale. The measurement was specified as follows: Strongly Disagree = 1, Disagree = 2, Agree = 3, and Strongly Agree = 4. A pre-test of the instrument was done using 50 teachers in the Komenda Edina Eguabo Abirem Municipality since they share similar demographic and socioeconomic characteristics with teachers in the Cape Coast Metropolis and produced a reliability coefficient of 0.88 using McDonald’s Omega. The sample size for the pre-test was supported by Perneger, Courvoisier, Hudelson, and Gavet-Ageron (2014) recommendation. The reliability coefficient for the main data was 0.87 using McDonald’s omega and 0.87 using Cronbach’s alpha. This is in tandem with Kline’s (2016) recommendation that a reliability coefficient of about 0.80 is very good. The content validity of the instrument was ensured through experts’ reviews in the field of assessment, measurement, and evaluation. In establishing the factor structure and construct validity, the items of the instrument were subjected to exploratory factor analysis using the principal component analysis (PCA).

The suitability of the data for factor analysis was assessed before performing the PCA. Examination of the correlation matrix showed the presence of many coefficients of 0.3 and above. The Kaiser–Meyer–Olkin value was 0.86, above the suggested value of 0.7 (Sönmez & Alacapinar, 2014), and Bartlett’s test of sphericity reached statistical significance ($p = 0.00$), supporting the factorability of the correlation matrix. PCA revealed one component with an eigenvalue exceeding 1, explaining 56.49% of the variance. An inspection of the scree plot and the results of parallel analysis also supported the unidimensionality of the scale. The item loadings were between 0.67 and 0.82. In addition, the average variance extracted index of 0.56 was above the prescribed index of above 0.5. This also provided an empirical basis for the convergent validity of the scale, thus rendering the resource-related barriers to teachers’ adoption of formative assessment scale valid for data collection. Table 1 presents the factor loadings of the scale.

5 Data Collection Procedures

Ethical considerations such as ethical clearance, informed consent, confidentiality, and the right to leave the study were ensured during the data collection. Ethical clearance
Table 1: Factor loadings of resource-related barriers to teachers’ adoption of formative assessment scale (RTAFAS)

<table>
<thead>
<tr>
<th>Items</th>
<th>Component 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1</td>
<td>0.824</td>
</tr>
<tr>
<td>B2</td>
<td>0.800</td>
</tr>
<tr>
<td>B3</td>
<td>0.774</td>
</tr>
<tr>
<td>B4</td>
<td>0.766</td>
</tr>
<tr>
<td>B5</td>
<td>0.727</td>
</tr>
<tr>
<td>B6</td>
<td>0.688</td>
</tr>
<tr>
<td>B7</td>
<td>0.670</td>
</tr>
</tbody>
</table>

% of variance explained 56.49
Reliability (Cronbach’s alpha) 0.87

with approval number CES-ERB/UCC.edu/17/46 was acquired from the Institutional Review Board of the University of Cape Coast following adherence to all ethical standards of the Helsinki Declaration. A week before administering the questionnaire, the researchers gained authorization from the Headteachers whose instructors were chosen for the study. The purpose of the study and the procedure for responding to the questionnaire were explained to the respondents on the day of data collection. They were also made aware of the study’s voluntary nature. Furthermore, participants’ informed agreement was sought before administering the questionnaire. A research team comprising the researchers and trained data collectors administered the instrument to the teacher participants. All participants ($N = 300$) completed the questionnaires, resulting in a 100% response rate.

6 Data Analysis

Descriptive statistics (mean values and standard deviations) were used to answer the research question, while a two-way analysis of variance was used to test the hypothesis.

7 Results

7.1 Resource-Related Factors Affecting Basic Teachers’ Effective Implementation of Formative Assessment Strategies

In answering this research question, a midpoint (mean score) of 2.5 was calculated from the responses, and a mean of mean values was computed (Anane & Adu-Mensah, 2019; Edjah, Ankomah, Domey, & Laryea, 2020). The mean scores ranged from 1 to 4; thus, a mean score of 2.5 and above was considered a barrier, while a mean score below 2.5 was not regarded as a barrier to the practice of formative assessment.

As depicted in Table 2, respondents, in general, attested that resource-related factors (mean of mean values = 2.52, SD = 0.83) were significant trammel to the practice of formative assessment. Specifically, basic teachers reported time that is contact hours with students ($M = 2.64$, SD = 0.82), workload ($M = 2.59$, SD = 0.82), overcrowded curriculum ($M = 2.67$, SD = 0.85), class size ($M = 2.56$, SD = 0.91), and the number of lessons ($M = 2.50$, SD = 0.80) as contributing resource-related barriers to the effective practice of formative assessment in the classroom.

8 Hypothesis

8.1 There Are No Statistically Significant Gender and Grade-Level Differences as Well as Their Interaction Effect With Respect to These Factors

A two-way ANOVA was used to test the hypothesis with the aid of SPSS V. 23. For large samples (i.e., 200 and above), Cohen, Manion, and Morrison (2018), Denis (2016), Hair, Black, Babin, and Anderson (2019), Pallant (2016), and Tabachnick and Fidell (2013, 2019) endorse examining the shape of the distribution (e.g., using a histogram and Q–Q plots) for normality. Hence, a visual inspection of the normal probability plots (normal Q–Q plots) and the shape of the histograms for the two independent groups showed that both distributions were approximately normal. As

Table 2: Resource-related factors

<table>
<thead>
<tr>
<th>Factor</th>
<th>$M$</th>
<th>SD</th>
<th>Std. error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>2.64</td>
<td>0.82</td>
<td>0.047</td>
</tr>
<tr>
<td>Workload</td>
<td>2.59</td>
<td>0.82</td>
<td>0.047</td>
</tr>
<tr>
<td>Overcrowded curriculum</td>
<td>2.67</td>
<td>0.85</td>
<td>0.049</td>
</tr>
<tr>
<td>Class size</td>
<td>2.56</td>
<td>0.91</td>
<td>0.052</td>
</tr>
<tr>
<td>Number of lessons</td>
<td>2.50</td>
<td>0.80</td>
<td>0.046</td>
</tr>
<tr>
<td>Inadequate teaching and professional experience</td>
<td>2.35</td>
<td>0.79</td>
<td>0.045</td>
</tr>
<tr>
<td>Inadequate knowledge of formative assessment of my students</td>
<td>2.34</td>
<td>0.80</td>
<td>0.046</td>
</tr>
<tr>
<td>Mean of mean values</td>
<td>2.52</td>
<td>0.83</td>
<td></td>
</tr>
</tbody>
</table>
recommended by Hair et al. (2019) and Pituch and Stevens (2016), the skewness and kurtosis values were between the range of $-1$ and $+1$, indicating that the distributions were reasonably normal. A preliminary analysis using Levene’s test was conducted to test the assumption of homogeneity of variance. Levene’s test showed that the variances of the groups were equal, $F(3, 296) = 1.761, p = 0.155$.

As depicted in Table 3, the interaction effect was not statistically significant, $F(1, 296) = 0.602, p = 0.438$, indicating that there was no combined effect of grade level and gender on the resource-related factors that inhibit basic teachers’ formative assessment practices in the classroom. Moreover, the main effect of grade level was not statistically significant, $F(1, 296) = 1.517, p = 0.219$. A comparison of the mean values (Table 4) revealed that Junior High teachers ($M = 18.01, SD = 4.26$) were slightly more receptive to the factors than Primary teachers ($M = 17.21, SD = 4.41$). A probable justification is that at the Junior High level, teachers prepare their pupils for the national Basic Education Certificate Examination (BECE) and therefore become examination conscious to the detriment of effective teaching and learning. This is due to teachers’ accountability and schools’ reputation, which are heavily influenced by students’ performance in public examinations. Again, the main effect of gender was not statistically significant, $F(1, 296) = 0.095, p = 0.758$.

9 Discussion

On factors that hinder basic school teachers from effectively practising formative assessment strategies, the findings of the study revealed that time (that is contact hours with students), workload (for instance, number of subjects to be taught), overcrowded curriculum, class size, and number of lessons to be taught were the resource-related factors that served as barriers to basic teachers’ effective implementation of formative assessment in their classrooms. The findings of the current study are consistent with those of Alotaibi (2019), Israel (2005), Kibga (2004), Quyen and Khairani (2017), Tebeje and Abiyu (2015), and Walani (2009), who reported large class sizes and high workloads as barriers to the effective integration of formative assessment in the classroom. With regard to instructional time, a World Bank report on Ghanaian schools revealed limited contact hours with students (The World Bank, 2018). This implies that it will be challenging for basic teachers to tailor their teaching to incorporate formative assessment and offer meaningful feedback to students. The workload of basic teachers in balancing multiple responsibilities, including lesson planning, grading, classroom management, and personal development, among others, also affects the implementation of formative assessment. Teachers may have to teach multiple classes, each with its own set of students and curriculum requirements. This workload can be overwhelming, leaving teachers with little energy and time to devote to formative assessment. This inference corroborates with studies by Lajane, Gouifrane, Qaisar, Chemsi, and Radid (2020), Lee and William (2005), and Ni Chroinin and Cosgrave (2012), who acknowledged the insufficient amount of time for planning formative assessment practices, extra workload related to daily and weekly school rhythms, the pressure of covering curriculum, and lack of

### Table 3: Tests of between-subjects effects of grade level and gender on barriers of formative assessment

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III sum of squares</th>
<th>Df</th>
<th>Mean square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial $\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected model</td>
<td>60.584*</td>
<td>3</td>
<td>20.195</td>
<td>1.071</td>
<td>0.361</td>
<td>0.011</td>
</tr>
<tr>
<td>Intercept</td>
<td>81438.404</td>
<td>1</td>
<td>81438.404</td>
<td>4320.740</td>
<td>0.000</td>
<td>0.936</td>
</tr>
<tr>
<td>Demo1</td>
<td>28.594</td>
<td>1</td>
<td>28.594</td>
<td>1.517</td>
<td>0.219</td>
<td>0.005</td>
</tr>
<tr>
<td>Demo2</td>
<td>1.795</td>
<td>1</td>
<td>1.795</td>
<td>0.095</td>
<td>0.758</td>
<td>0.000</td>
</tr>
<tr>
<td>Demo1 * Demo2</td>
<td>11.344</td>
<td>1</td>
<td>11.344</td>
<td>0.602</td>
<td>0.438</td>
<td>0.002</td>
</tr>
<tr>
<td>Error</td>
<td>5579.083</td>
<td>296</td>
<td>18.848</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>98920.000</td>
<td>300</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected total</td>
<td>5639.667</td>
<td>299</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. Demo1 – Grade Level, Demo2 – Gender. $^*R$ Squared = 0.011 (Adjusted $R$ squared = 0.001).
time as barriers to teachers’ effective integration of formative assessment in the classroom.

Surprisingly, basic teachers at the Cape Coast Metropolis revealed an overcrowded curriculum as a barrier. The new Ghanaian pre-tertiary curriculum framework addressed the issue of curriculum content overload within and across subjects. To Sutton (2010), a crowded curriculum impedes on teachers’ adoption of formative assessment in the classroom though they may possess appropriate skills and knowledge. With much content to cover, basic teachers may feel pressured to prioritize summative assessments, such as tests, over formative assessment. This observation was also shared by Ankomah and Oduro (2004), who found the pressure from national examinations (i.e., BECE) to hinder Ghanaian pre-tertiary teachers’ attempts to use formative assessment effectively. This can lead to a lack of opportunities for students to receive feedback and improve their learning. This implication is supported by Sutton, who maintained that the supremacy of obligatory curricula in schools increments the weight on teachers to prioritize coverage of curricula over students’ learning.

In addition, large class sizes can make it challenging for teachers to use various formative assessment strategies, such as peer assessment or one-on-one conferences, which require more time and attention from the teacher. With many students, Ghanaian basic teachers may not be able to provide adequate attention to each student, making it difficult to monitor their progress effectively. This is so because effective individual feedback and classroom management would be exceedingly challenging. This finding is in tandem with Jones and Webb (2006), who revealed class size as a factor that influences teachers’ use of formative assessment. Sutton (2010) and Quyen and Khairani (2017) added that teachers find it herculean to integrate formative assessment into the teaching and learning process due to large class sizes. To deal with these barriers, Al-Wassia et al. (2015) and Bell and Cowie (2001) argued that nationally developed curricula and books should be properly crafted to encourage the practice of formative assessment by providing suitable teaching and formative assessment activities.

The study also revealed no statistically significant interaction effect of grade level and gender on the factors that influence teachers’ effective implementation of formative assessment. Moreover, the current study revealed no statistically significant grade level and gender main effects. This means that factors such as time, workload, overcrowded curriculum, class size, and the number of lessons to be taught affect basic teachers’ implementation of formative assessment similarly across all grade levels and genders. This finding corroborates with Hussain et al. (2019), who also reported no statistically significant difference between public and private teachers’ classroom assessment challenges. This finding negates that of Alotaibi (2019), who reported gender differences in his study.

10 Conclusion and Recommendation

Based on the research findings described above, the study can conclude that basic school teachers in the Cape Coast Metropolis of Ghana outlined time, workload, overcrowded curriculum, class size, and the number of lessons to be taught as factors that serve as barriers to their effective implementation of formative assessment in their classrooms. In addition, it was revealed that grade level and gender had no significant main effects with respect to these factors. Since teachers are the most important stakeholders in bridging the gap between the theory and practice of formative assessment in the classroom, identifying the factors that impede their practice of formative assessment would necessitate developing capacity-building workshops to improve their use of formative assessment to enhance teaching and learning in the classroom.

The researchers recommend that, for policy and practice, stakeholders of education; the Ministry of Education and its agencies such as the NaCCA, and Ghana Education Service, should review the factors that deter teachers from adopting formative assessment in their classrooms. A reduction in the workload of teachers and the pressure of covering the whole curriculum will encourage teachers to practice, collaborate, and reflect on formative assessment strategies. This will in turn reduce these time and overcrowded curriculum problems. School management and headteachers should also reduce the extra workload allied with daily and weekly school activities to enable teachers to have ample time to engage their students in various formative assessment strategies to enhance teaching and learning in the classroom. This is because the successful adoption of formative assessment requires effective support from and collaboration with school leaders, such as principals, headteachers, and departmental leaders (Brink & Bartz, 2017). Moreover, the curriculum should include guidelines for effective teaching and formative assessment, which should be monitored by a quality assurance system using process and outcome indicators (Al-Wassia et al., 2015).

11 Limitations and Future Research

Interpretation of the findings should be done with caution since the current study concentrated on only resource-related factors. The authors acknowledge that other factors...
could hinder basic teachers’ practices of formative assessment in the classroom. These factors were not covered in the current study. Additionally, the current study only focused on public basic teachers excluding private basic teachers. Consequently, further studies can explore these factors at the private basic level, secondary, and tertiary levels. Moreover, a confirmatory factor analysis could be done to confirm the psychometric properties of the scale in future studies.

Acknowledgments: The authors would like to thank the headteachers at the various basic schools and the participating teachers.

Funding information: The authors received no funding for this research.

Author contributions: Eric Asare: conceptualization, methodology, data collection, data analysis, manuscript writing; Elizabeth Afriyie: data collection, manuscript review and editing. All authors contributed to the article and approved the final version of the manuscript.

Conflict of interest: The authors state no conflict of interest.

Data availability statement: Data is available upon request through the corresponding author.

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