

## RESEARCH ARTICLE

---

### Basic Teachers' Perceptions and Practices of Formative Assessment in the Cape Coast Metropolis of Ghana

Eric Asare

*Records and Aptitude Tests Department,  
The West African Examinations Council - Ghana*

Students learning outcomes are bound to improve if the practice of formative assessment is seen as a vital component of the School Based Assessment in the classroom. In the classroom, formative assessment plays a critical role as it provides information to be used as feedback to adjust the teaching and learning activities in which students and teachers are engaged. The study investigated public basic schoolteachers' perceptions and formative assessment practices in the Cape Coast Metropolis of Ghana. The study employed the descriptive survey as well as the multistage sampling procedure to select 300 teachers from the six (6) circuits in the Cape Coast Metropolis. Data were analyzed using frequencies, percentages, means, standard deviations, and Pearson product-moment correlation coefficient. The results showed that basic schoolteachers have positive perceptions of the usefulness of formative assessment in the classroom. It was also revealed that dominant practices that basic school teachers usually engaged in included ensuring effective class participation, discussing feedback with students, use of question and answer during instruction, making formative use of summative assessments, giving students home assignments, and engaging students in activities like role play. Results further indicated a statistically significant positive relationship between basic teachers' perceptions and their formative assessment practices. It is recommended that, short-term courses, workshops, seminars and, other necessary in-service training activities should be organized by the Ghana Education Service (GES) and the Cape Coast Metropolitan Directorate of Education for basic schoolteachers. In these courses, teachers could be exposed to other formative assessment curriculum and application practices, which they can then adopt to enhance students learning with exit/admit slips, four corners, individual whiteboards and kinesthetic assessments.

*Keywords:* formative assessment, school based assessment, perceptions, practices

The level of understanding or knowledge assimilated by learners can be determined using appropriate tools or mechanisms that give a representation of what the learners already know with respect to set instructional aims, goals, or objectives. The techniques, tools, methods or mechanisms employed by evaluators to measure, and document the academic readiness, learning progress, skill acquisition, or educational needs of students are termed as assessment (Oluchi, 2018). In the classroom environment, assessment provides relevant feedback on students' progress

over a period so that, errors or learning difficulties can be identified and corrected. Assessment experts (for instance, Alberta Assessment Consortium [AAC], 2010; Garrison & Ehringhaus, 2009; Stiggins, 2005) agree that educational practitioners have not used assessment for many years for its ideal purpose of ensuring that all learn to specified standards but rather, they have largely identified and ranked students using traditional assessment techniques like tests, quizzes, and essays. Stiggins (2005) therefore holds that as the mission of school's changes from ranking students to ensuring that all learn to specified standards, the purpose and form of assessments must change as well.

The new National Pre-tertiary Education Curriculum in Ghana requires that schools shift from an emphasis on summative assessment to the formative, a philosophy that espouses the need to employ multiple sources of evidence about learning, which will guide instructional decisions and support each learner's learning trajectory (MOE, 2018). To Ogbebor (2017), formative assessment is an aspect of School Based Assessment (SBA), which involves the collection of formal and informal assessment procedures carried out by teachers during the teaching and learning process in order to improve students' learning outcomes. Taylor (2017) further submits that a teacher would define formative assessment as the feedback from learners used to promote learning and that it is a method of providing a clear image of where learners need to reach their goals in learning. Studies (Assessment Reform Group [ARG], 1999; Clarke, 2005; Organization for Economic Co-operation and Development [OECD], 2005) conducted on formative assessment have established that formative assessment is highly effective in raising the level of student attainment, increasing equity of student outcomes and improving students' ability to learn. Gloria, Sudarmin, Wiyanto and Indriyanti (2018) believe that well-designed, documented and functional formative assessment has a significant and positive impact on learners' motivation and achievement, problem solving skills, independent and creative thinking, perseverance in learning, listening with understanding, and empathy.

In the quest to ensuring that teachers in Ghanaian schools adopt formative assessment in their classrooms, it is also of worth noting that perceptions that teachers have on classroom assessment are likely to influence their assessment practices (Brown, 2004; Chester & Quilter, 1998; Ndalichako, 2015; Halali, Singh, Saeed, & Making, 2017). Rahman (2018) agrees to the fact that teachers are the critical factor in the implementation of an appropriate approach so their perceptions about classroom practices are important. According to Redondo, Bueno and Figuerres (2017), the most efficient way to measure, understand, and appreciate teachers' assessment practices is to assess their perceptions about classroom assessment methods. The authors further added that, integrating teachers' perceptions will build a foundation and rationale for the assessment practices they use in their classrooms, through which one can learn to what extent and in what ways students' impacts their learning. Chester and Quilter (1998) also believe that studying teachers' perceptions of assessment is important in the sense that it provides an indication of how different forms of assessment are being used or misused and what could be done to improve the situation. More critical also is the fact that perceptions affect behavior (Ahsan & Anjum, 2012; Cillessen & Lafontana, 2002).

## Statement of the Problem

The current trends in assessment in Ghana are centered on using the School Based Assessment (which has replaced the former Continuous Assessment) in schools. The conception of formative

assessment expressed in the SBA, as used in basic schools, is absent from the actual practice of the SBA in the educational system (Oduro-Okyireh, Akyina, Ansah-Hughes, & Torkornoo (2015). It is worrisome that, at basic level, that formative assessment is most useful to the pupils, thereby laying a strong foundation and building blocks for lifelong learning, as well as in the higher levels of education. Additionally, the studies on formative assessment in Ghana, have mostly concentrated on Colleges of Education, secondary, and distance teachers' knowledge base and practices (Amoako, 2018, Amoako, Asamoah, & Bortey, 2019, Bokoe, Eshun & Bordoh, 2013, Oduro-Okyireh, et al. 2015). Hence, it is becoming increasingly important to understand whether basic level teachers at the Cape Coast Metropolis are practicing the formative aspect of the SBA and what perceptions they have toward the usefulness of formative assessment in their classrooms.

### Purpose of the Study

This study was carried out to investigate basic schoolteachers' perceptions of the usefulness of formative assessment, and their current formative assessment practices.

### Research Questions

In order to achieve the purpose of this study, the following research questions and hypothesis guided the study:

RQ 1: What are basic schoolteachers' perceptions of the usefulness of formative assessment?

RQ 2: Which dominant formative classroom assessment strategies are used by basic schoolteachers in the Cape Coast Metropolis of Ghana?

### Hypothesis

H<sub>0</sub>: There is no statistically significant relationship between basic teachers' perceptions and their formative assessment practices.

H<sub>A</sub>: There is statistically significant relationship between basic teachers' perceptions and their formative assessment practices.

## METHODOLOGY

### Research Design

The study employed descriptive survey design since the study is essentially a survey of basic schoolteachers' perceptions and their formative assessment practices.

## Population

The population for this study consisted of 1,006 public basic schoolteachers (that is Primary and Junior High School teachers) in the Cape Coast Metropolis of Ghana, with the exception of special basic schoolteachers.

## Sample and Sampling Procedure

A multistage sampling procedure was used to select 300 teachers, made up of 111 male and 189 female teachers from the six (6) circuits in the Cape Coast Metropolis. In the first instance, cluster sampling technique was used to categorize the schools into six (6) clusters namely, Cape Coast, Aboom, Bakaano, Ola, Pedu/Abura, and Efutu. In the second phase, simple random sampling technique was used to select sixty-one (61) schools from the six (6) circuits. The proportional stratified sampling technique was then used to obtain a proportionate number of respondents based on gender in each of the circuits. Lastly, the simple random sampling technique was used to select the subjects in the selected schools.

## Data Collection Instrument and Analysis

The instrument for the study was an adapted questionnaire from Sach (2011) and Oduro-Okyireh, et al. (2015). Both statements on perceptions and practices were measured on a four-point Likert type Scale. The measurements were specified as follows: Strongly Agree, Agree, Disagree, Strongly Disagree and, Always, Very Often, Sometimes, and Never respectively. A pre-test for the instrument was done to refine items using a sample of 50 teachers. The reliability coefficients for perception statements stood at 0.86 (Omega) and 0.85 (Cronbach Alpha). In addition, the reliability coefficients for formative practices statements stood at 0.87 (Omega) and 0.87 (Cronbach Alpha). The content and construct validity of the instrument was ensured through an expert review in the field of measurement and evaluation, as well as in factor analysis. Frequencies, percentages, mean, standard deviation, and Pearson's Product Moment Correlation Coefficient were used to answer the research questions and hypothesis.

## RESULTS

### Demographic Data

**TABLE 1**  
**Respondents' Teaching Experience**

Years of Teaching	<i>N</i>	%
1-5	51	17.0
6-10	84	28.0
11 and above	165	55.0
Total	300	100

It could be observed from Table 1 that majority of the teachers were with more than eleven years of teaching experience. This reveals that generally, teachers in the Cape Coast Metropolis have rich experience in the teaching field.

### Research Question 1

This question sought to find out basic schoolteachers' perceptions of the usefulness of formative assessment. In the analysis, a perception with a mean greater than 2.50 indicates a positive perception, whereas a perception with a mean lesser than 2.50 indicates a negative perception. The means and standard deviations of the respondents' responses are summarized in Table 2.

Based on the data in Table 2, it could be inferred that basic schoolteachers have positive perceptions toward the formative assessment of their students in the classroom. A look at the mean score of each of the items shows that, the means for each of the individual items was more than 2.5 (an indication of positive perceptions toward the formative assessment of their students in the classroom). For instance, items such as "Formative assessment is useful" had (mean=3.36, SD=0.59), "I feel basic school students can use feedback from formative assessment to improve their own learning" had (mean=3.36, SD=0.61), "I feel basic school students will benefit from formative assessments" had (mean=3.35, SD=0.56), "The aim of formative assessment is to promote learning" had (mean=3.32, SD=0.59), and "I would benefit from more training in the use of formative assessment techniques" also had (mean=3.30, SD=0.59).

TABLE 2  
Perceptions of the Usefulness of Formative Assessment

Statement	<i>M</i>	<i>SD</i>
The aim of formative assessment is to promote learning	3.32	0.59
Formative assessment is useful	3.36	0.59
Formative assessment promotes a conducive environment which encourages pupils to enhance their learning as they make mistakes	3.18	0.54
Formative assessment encourages interaction among pupils which boosts their self-confidence	3.23	0.62
Formative assessment should be carried out frequently	3.29	0.67
I have adequate time to use formative assessment in the classroom	2.81	0.65
I feel confident in carrying out formative assessment of my students	3.14	0.57
I feel basic school students will benefit from formative assessments	3.35	0.56
I feel basic school students can use feedback from formative assessment to improve their own learning	3.36	0.61
I use evidence from formative assessment to develop my teaching	3.25	0.62
Parents have much to contribute to the formative assessment process	3.08	0.72
I have a positive view of formative assessment	3.23	0.55
I would benefit from more training in the use of formative assessment techniques	3.30	0.59
Overall mean score	41.9	7.8

Note.  $n = 300$ .

## Research Question 2

This question sought to find out the dominant formative assessment strategies used by basic schoolteachers in the Cape Coast Metropolis of Ghana. Respondents in the study were asked to indicate the frequency to which they used thirteen (13) formative assessment strategies to facilitate learning in their classrooms. In the analysis, a strategy with a mean greater than 2.5 was a practiced strategy, while a strategy with a mean less than 2.5 was not practiced. In addition, a strategy with a mean of 3.0 and above was dominantly practiced. Table 3 below gives the means and standard deviations of respondents' responses.

From Table 3, it could be seen that respondents engage in the practice of all the thirteen (13) formative assessment strategies to facilitate learning in their classrooms. This could be attributed to teachers' positive perceptions of the usefulness of formative assessment and rich experience in the teaching field as majority (165, representing 55%) of them have taught for more than 11 years. A look at the mean score of each of the individual items shows that, the mean for each of the individual items was more than 2.5. However, the most dominant formative strategies the sample engaged in include "engaging students in effective class participation" (M=3.47, SD=0.59), "discussing feedback from assessment task with students" (M=3.36, SD=0.61), "The use of question and answer technique during instruction" (M=3.34, SD=0.60), "making formative use of summative assessments" (M=3.31, SD=0.66), "giving feedback to students promptly" (M=3.28, SD=0.65), "giving students home assignments" (M=3.22, SD=0.68), "engaging students in activities like role play" (M=3.21, SD=0.67), "engaging students in remediation" (M=3.18, SD=0.61) and "giving students group work and projects" (M=3.14, SD=0.63).

Also, from Table 3, it could be observed that, the least practiced formative assessment strategies included; "encourage students to do self-assessment", "engage students to do self-assessment", "encourage students to do peer -assessment" and "engage students to do peer assessment". All these individual items had a mean score less than 3.0.

## Hypothesis

There is no statistically significant relationship between basic teachers' perceptions and their formative assessment practices.

The relationship between teachers' perceptions and their formative assessment practices was investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. There was a statistically significant, medium positive correlation between the two variables [ $r=.49$ ,  $n=300$ ,  $p<.0005$ ], with higher levels of teachers' perceptions associated with high levels of formative assessment practices. The results further indicated 24 percent shared variance between the two variables. The researcher defined the Pearson's  $r$  score of .49 to be an estimate of a medium association using Cohen (1988) category of large, medium, and small.

TABLE 3  
Formative Assessment Strategies

Strategy	<i>M</i>	<i>SD</i>	Rank
I engage my students in effective class participation	3.47	.59	1
I discuss feedback from assessment tasks that is class exercise, homework, project work with my students	3.36	.61	2
I use the question and answer technique effectively and continuously during instruction	3.34	.60	3
I make formative use of summative assessments	3.31	.66	4
I give feedback from assessment tasks to students promptly	3.28	.66	5
I give my students home assignments after each lesson	3.22	.68	6
I engage my students in activities like role-plays, demonstrations, and presentations	3.21	.68	7
I engage my students in remediation, when necessary, based on students' feedback from assessment task	3.18	.62	8
I give my students group work and projects in the form of formative assessment	3.14	.64	9
I encourage students to do self-assessment in my classroom	2.99	.66	10
I engage students to do self-assessment in my classroom	2.93	.66	11
I encourage students to do peer assessment in my classroom	2.92	.69	12
I engage students to do peer assessment in my classroom	2.85	.70	13

Note.  $n = 300$ .

## DISCUSSION

The results from the study on basic teachers' perceptions of the usefulness of formative assessment indicated that generally, basic schoolteachers have positive perceptions of the usefulness of formative assessment of their students in the classroom. This finding is in consonance with the study conducted by Ho (2014) in Hong Kong that investigated teachers' perceptions of formative assessment, which also revealed a positive perception towards formative assessment. The findings of the current study are also in line with the findings of Buyukkarci (2014), who studied primary schools' language teachers' perceptions and practices of formative assessment in Turkey. The teachers in the study also held positive views of formative assessment use in the classroom. Moreover, a study conducted by Akom (2010) in Cameroon revealed that majority of the teachers held a positive view toward the use of formative assessment, which the sample- teachers said that they used assessment data to improve teaching. Furthermore, in a study conducted by Al-shehri (2008) in Saudi Arabia, formative assessment gained the highest level of agreement among the teachers as most of them saw it as an enhancing tool to the students' language proficiency. Their justifications for applying this assessment are centralized around the following themes: enhancing language usage, increasing motivation to learn and suitable communicative approach in teaching. In a qualitative study by Noori, Shafie, Mashwania and Tareen (2017) on classroom assessment practices, teachers maintained positive perceptions toward formative assessment and favored it over summative assessment.

Findings on basic schoolteachers' formative assessment strategies usage in the classroom revealed that, they practice all the thirteen (13) formative assessment strategies to facilitate learning in their classrooms. It can, therefore, be said that basic schoolteachers are practicing the

formative aspect of the School Based Assessment (SBA). According to the Ministry of Education [MOE] (2007), schools can use different modes of broad-based assessment including formative assessment to promote pupils' learning through participation in project work, class exercises, homework, assignment, and group work. Projects are intended to encourage pupils to apply knowledge and skills acquired in the term to write an analytic or investigative paper, write a poem (as may be required in English and Ghanaian Languages), use science and mathematics to solve a problem or produce in Creative Arts and Natural Science (Estey, 2012). Estey further added that, apart from the SBA, teachers are expected to use class exercises and homework as processes for continually evaluating pupils' class performance, as well as a means for encouraging improvements in learning performance. A look at the mean score of each of the individual items showed that, the mean for each of the individual items was more than 2.5. As earlier indicated, this could also be attributed to their positive perceptions and long years of teaching. Black et al., (2003) further added that teachers, who see their role as facilitating and promoting students' involvement in learning process, are inclined to adopt formative assessment more than other teachers who perceive their roles as lecturers. More so, teachers who have more teaching experience including "experiences of the topic, of the students as learners, and from having taught the unit of work before", tend to frequently use formative assessment strategies in their practices (Bell & Cowie, 2001, p.75).

However, the dominant formative strategies they engaged in included; "engaging students in effective class participation", "discussing feedback from assessment task with students", "the use of question and answer technique during instruction", "making formative use of summative assessments", "giving feedback to students promptly", "giving students home assignments", "engaging students in activities like role play", "engaging students in remediation" and "giving students group work and projects". The findings of the current study corroborate the outcomes of the study conducted by Volante and Beckett (2011) in Canada on elementary teachers' formative assessment strategies in the contemporary classroom. Their findings indicated that teachers are becoming more familiar with a diverse range of formative assessment strategies (e.g., questioning, feedback without grades, self and peer assessment) and they are reporting their use on a more consistent basis within their classrooms. In addition, the findings of the current study are in line with findings of Walani (2009), who reported that most of the teachers used a variety of formative strategies in their classroom. These strategies included games, quizzes, group work, pair discussions, individual conferences, assignments, teacher-made test and oral questioning. Ho (2014) further reported teachers' daily usage of formative assessment practices in their classrooms. Boston (2002) suggested that employing formative assessment techniques such as teacher observation, classroom discussions, homework and the analysis of tests, can help the classroom teacher gain an understanding of what the students know or don't know. Perry (2013) and Akom's (2010) study on formative assessment use, reported oral questioning as one of the most dominant methods frequently used in the African classrooms. To Harlen (2007), questioning is an important element of formative assessment in the teaching and learning process.

An important area that needs to be looked at is the practices that were least practiced and these include: "encouraging students to do self-assessment", "engaging students to do self-assessment", "encouraging students to do peer -assessment" and "engaging students to do peer assessment". Teachers need to be encouraged to engage students in these practices the more as Black et al. (2004) cautioned that peer and self-assessment can be used to assist students, especially low achievers, to improve their performance in the classroom.

Results further indicated a statistically significant positive relationship between basic teachers' perceptions and their formative assessment practices in the classrooms. The results of this study agree with findings of Bol, Stephenson, O'Connell, and Nunnery (1998) who reported significant positive correlations between teachers' use of alternative assessment and their perceptions. Similarly, Brown (2004) also reported a positive association between teachers' perception of teaching and learning, and their classroom practices. Brown, Kennedy, Fok, Chan and Yu (2009) also reported a clear alignment between teachers' perceptions and assessment practices. Teachers' perceptions of their roles in the classroom affect their usage of formative assessment.

## Limitations

A self-report instrument was used for the study (i.e., a Likert-type scale). In a survey, asking people about their perceptions and practices sound fine, but one cannot be sure whether what they say or write are true. They may answer questions honestly and represent the truth, as they perceive it at that instant. Moreover, the close-ended response structure of the developed questionnaire did not give opportunity for respondents to express their opinions, hence, may have limited study participants on the expression of their opinions on relevant issues.

## Conclusions

Based on research, described above, it can be concluded that basic schoolteachers in the Cape Coast Metropolis in Ghana, practice the formative aspect of the School Based Assessment (SBA). In view of the positive perceptions these teachers have toward the formative assessment of their students, they engage in practices that support learning and students' performance in the classrooms. Teachers in the Cape Coast Metropolis of Ghana participate in practices, such as engaging students in effective class participation, discussing feedback from assessment tasks with students, encouraging and further engaging students in self and peer assessments, and giving students group work and projects. Results further indicated a positive relationship between basic teachers' perceptions and their formative assessment practices in the classrooms.

## Recommendations

In view of the above research findings and the conclusions arrived at, the following recommendation is made. In order to sustain the present level of positive perceptions, and the continued and expanded practice of formative assessment strategies in the classrooms, the researcher recommends that short-term courses, workshops, seminars, and other necessary in-service training activities should be organized by the Ghana Education Service (GES) and the Cape Coast Metropolitan Directorate of Education for basic school teachers. In these courses, the teachers could be exposed to other formative assessment curriculum and application practices, which they can then adopt to enhance their students learning with exit/admit slips, four corners, individual whiteboards and kinesthetic assessments. This is because broadening teachers'

conceptions of formative assessment subject matter and other sub-concepts under it, all things being equal, will help influence their formative assessment practices in the right direction.

## REFERENCES

- Ahsan, N. M., & Anjum, T. (2012). A study of Paskistani teachers' beliefs and perceptions about teaching and learning. *Interdisciplinary Journal of Contemporary Research in Business*, 4(5), 128-143.
- Akom, G. V. (2010). *Using formative assessment despite the constraints of high stakes testing and limited resources: A case study of chemistry teachers in Anglophone Cameroon*. Unpublished doctoral dissertation, Mallinson Institute for Science Education, Western Michigan University, Michigan.
- Alberta Assessment Consortium. (2010). *About classroom assessment for learning (Questions and Answers)*. Edmonton: Alberta Assessment Consortium.
- Alonso-Tapia, J. & Garrido-Hernansaiz, H. (2017). Assessment for learning – Assessment of non-written sources understanding. Department of Biological and health psychology, Universidad Antonoma de Madrid, Madrid Spain. *Electronic Journal of Research in Educational Psychology*, 15(1), 168-188.
- Al-shehri, K. D. (2008). *Teachers' and students' attitudes toward formative assessment and feedback in teaching English for specific purpose ESP*. Unpublished master's thesis, University of Glasgow, Glasgow.
- Amoako, I., Asamoah D., Bortey, J. (2019). Knowledge of formative assessment practices among senior high school mathematics teachers in Ghana. *American Journal of Humanities and Social Sciences Research*, 3(3), 8-13.
- Amoako, I. (2018). Formative assessment practices among distance education tutors in Ghana. *African Journal of Teacher Education*, 7(3), 22-36.
- Assessment Reform Group. (1999). *Assessment for learning: Beyond the black box*. Cambridge: University of Cambridge School of Education.
- Bekoe, S. O., Eshun, I., & Bordoh, A. (2013). Formative assessment techniques tutors use to assess teacher trainees learning in social studies in colleges of education in Ghana. *Journal of Research on Humanities and Social Sciences*, 3(4), 20-30.
- Bell, B., & Cowie, B. (2001). *Formative assessment and science education*. Dordrecht: Kluwer Academic Publishers.
- Black, P., Harrison, C., Lee, C., Marshall, B., & Wiliam, D. (2003). *Assessment for learning: Putting it into practice*. Buckingham, UK: Open University Press.
- Bol, L., Stephenson, P. L., O'Connell, A. A., & Nunnery, J. A. (1998). Influence of experience, grade level, and subject area on teachers' assessment practices. *The Journal of Educational Research*, 91, 323 – 330.
- Boston, C. (2002). The concept of formative assessment. *Practical Assessment, Research, and Evaluation*, 8(9), 15-21.
- Brown, G. T. L., Kennedy, K. J., Fok, P. K., Chan, J. K. S., & Yu, W. M. (2009). Assessment for improvement: Understanding Hong Kong teachers' conceptions and practices of assessment. *Assessment in Education: Principles, Policy and Practice*, 16(3), 347-363.
- Buyukkarci, K. (2014). Assessment beliefs and practices of language teachers in primary education. *International Journal of Instruction*, 7(1), 107-120.
- Chester, C., & Quilter, S.M. (1998). Inservice teachers' perceptions of educational assessment. *Journal for Research in mathematics Education*, 33(2), 210-236.
- Cillessen, A. H. N., & Lafontana, K. M. (2002). Children's perceptions of popular and unpopular peers: A multimethod assessment. *Developmental Psychology*, 38(5), 635 – 647.
- Clarke, S. (2005). *Formative assessment in the secondary classroom*. New York, NY: Holder Murray.
- Cohen, J. W. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Etsey, Y. K. A. (2012). *Assessment in education*. Unpublished document, University of Cape Coast, Ghana.
- Garrison, C., & Ehringhaus, M. (2009). *Effective assessment: Linking assessment with instruction*. Retrieved from [www.measuredprogress.org](http://www.measuredprogress.org).
- Gloria, Y., Sudarmin, S., Wiyanto & Indriyanti, D. R. (2018). The effectiveness of formative assessment with understanding by design (UBD) stages in forming habits of mind in prospective teachers. *Journal of Physics: Conference Series*. Retrieved from <http://www.researchgate.net>.

- Halali, A. A. S., Singh, H. K. D., Saeed, I. M., & Making, Z. (2017). Teachers' perception towards the use of classroom-based assessment in English reading. *International Journal of Education and Research*, 5(11), 153-168.
- Harlen, W. (2007). Formative classroom assessment in science and mathematics. In J. H. McMillan (Ed.), *Formative classroom assessment: From theory to practice* (pp. 116-136). New York: Teachers College Press.
- Ho, C. (2014). *Teachers' perception of formative assessment practices in the English language classroom within the Hong Kong context*. Unpublished thesis, University of Hong Kong, Hong Kong. Retrieved from <http://www.pareonline.net/getvn.asp?=9>.
- Ministry of Education (2007). *Mathematics syllabus for Junior High School*. Accra, GH: Author.
- Ministry of Education. (2018). *National pre-tertiary education curriculum framework*. Accra, Ghana: Author.
- Ndalichako, J. L. (2015). Secondary school teachers' perceptions of assessment. *International Journal of Information and Educational Technology*, 5(5), 326-330.
- Noori, A., Shafie, N. H., Mashwania, H. U., & Tareen, H. (2017). Afghan EFL lecturers' assessment practices in the classroom. *Imperial Journal of Interdisciplinary Research*, 3(10), 130-143.
- Oduro-Okyireh, G., Akyina, O. K., Ansah-Hughes, W., & Torkornoo, P. (2015). Formative assessment practices of senior high school teachers in the Ashanti Mampong Municipality of Ghana. *International Journal of Academic Research and Reflection*, 3(7), 1-10.
- Ogbebor, U. C. (2017). *Construction and validation of mock Economics test using classical test and item response theories for senior secondary school students in Delta State, Nigeria*. Unpublished Doctoral Thesis, University of Ibadan, Nigeria.
- Oluchi, A. H. (2018). 21st Century assessment in Nigerian secondary schools through digital media. *Journal of Educational Assessment in Africa*, 13, 51-59.
- Organization for Economic Co-operation and Development (OECD). (2005). *Policy Brief: Formative assessment: Improving learning in secondary classrooms*. Retrieved from <http://www.oecd.org/publications/Policybriefs>.
- Palmer, M. S., Bach, D. J., & Streifer, A. C. (2014). Measuring the promise: A learning-focused syllabus rubric to improve the academy. *Journal of Educational Development*, 33(1), 14-36.
- Perry, L. (2013). *Formative assessment use and training in Africa*. Unpublished doctoral thesis, SMU.
- Rahman, M. (2018). Exploring science teachers' perception of classroom assessment in secondary schools of Bangladesh. *European Journal of Education Studies*, 4(9), 139-160.
- Redondo, S. C., Bueno, D. C., & Figuerres, N. R. (2017). Analysis of classroom assessment skills and practices across levels in a Catholic educational institution, *CC: The Journal*, 13.
- Sach, E. (2011). Teachers and testing: An investigation into teachers' perceptions of formative assessment. *Educational Studies*, 38(2), 261-276.
- Stiggins, R. J. (2005). *Student-involved assessment for learning*. New Jersey, NJ: Pearson/Merrill Prentice Hall.
- Taylor, M. A. (2017). *Formative for whom? How formative assessment is used in the English classroom of an upper secondary school in Sweden*. Degree Project, Department of Applied Educational Science, Umeå University, Umeå.
- Volante, L., & Beckett, D. (2011). Formative assessment and contemporary classroom: Synergies and tensions between research and practice. *Canadian Journal of Education*, 34(2), 239-255.
- Walani, N. D. (2009). *An investigation into classroom teachers' perception of the value of assessment for formative purposes in secondary schools in Solomon Islands*. Unpublished master's thesis, University of Waikato, New Zealand.