

## **Investigating the Effect of Assessment Feedback on Students' Learning and Performance in Tanzania: Lessons from Secondary Education Mathematics**

*Alex Mlemba<sup>1</sup>, Winston Massam<sup>2</sup> and Beatitude J. Mrema<sup>3</sup>*  
Tengeru Institute of Community Development, Arusha<sup>1</sup>  
Aga Khan University<sup>2</sup>  
Reginald Mengi Secondary School, Kilimanjaro<sup>3</sup>  
*mlembaalex@gmail.com<sup>1</sup>*

### **ABSTRACT**

*This qualitative study investigated the effect of assessment feedback on students' learning and performance in Mathematics in form three secondary classes in Moshi Municipality. The study explored the nature of assessment feedback used by Mathematics teachers and the perceived effect of such feedback on students' learning and performance. The sample consisted of 24 form-three students and two (2) Mathematics teachers from two community secondary schools. Employing a case study design, the study used classroom observation, interviews, focus group discussion (FGD), and document analysis as methods of data collection. The data were then coded into patterns, categories and themes. The findings revealed that task-level feedback that is evaluative dominated Mathematics classes. This task level, evaluative feedback either verbal or written does not help learners to get a deep understanding of various concepts through making revisions and solving Mathematical problems of a similar nature which may in turn improve their learning and performance. The study recommends that professional development programmes for in-service teachers focusing on the provision of effective feedback should be conducted regularly to equip them with appropriate knowledge and skills. The programmes will enable teachers to provide effective feedback which will, in turn, enhance students learning and improve performance in Mathematics at CSEE.*

**Keywords:** Assessment feedback, effective feedback, formative assessment, Mathematics classrooms, learning and performance

## **INTRODUCTION**

Students' low performance in Basic Mathematics as depicted in the Certificate of Secondary Education Examinations (CSEE) results in Tanzania, is a great concern of many stakeholders. Despite being one of the core subjects at the ordinary level of secondary education, performance in this subject has been on a decline for many years (Mabula, 2015; Masele & Tweve, 2018; Mazana et al., 2020). For example, CSEE 2019 results show that only 20.03% of students passed the examination while 80% failed (NECTA, 2020). Such poor performance in Mathematics continue to attract concerns from assessment stakeholders, particularly on whether or not such failing graduates have the required knowledge and skills to cope with 21st-century technological advancement. This is given the fact that Mathematics is an integral part of science and technology and that it plays a great deal in developing and/or advancing various scientific and technological theories (Mazana et al., 2018).

The massive failure in Mathematics as experienced in secondary schools is attributable to several factors. These include family support, beliefs about Mathematics, teaching and learning strategies, interests in Mathematics, availability of learning materials and students' self-confidence (Masele & Tweve, 2018; Mazana et al., 2018; Mutodi & Ngirande, 2014). While some factors relate to students themselves and teachers, others have to do with schools and even parents. Among the factors which relate directly to teaching and learning is assessment feedback which is considered to play a pivotal role on students' learning and academic achievement in various subjects (Black & Wiliam, 2010; Pokorny & Pickford, 2010). However, Anderson and Palm (2017) asserts that, enhancement of learning and performance in any subject depends on the nature of feedback that learners receive from their teachers or peers.

## **Assessment Feedback Practices in Tanzania**

In 2005 Tanzania introduced a competence-based curriculum for students' learning and assessment in secondary schools due to perceived irrelevance of content-based curriculum in the 21<sup>st</sup> century (Komba & Kira, 2013). The effectiveness of competence-based curriculum depends on the efficacy of the assessment practices utilized by teachers which are also dependent on the nature of feedback provided to the learners (Kumar & Rajasekhar, 2019). Despite many years of using competence-based curriculum in the country, studies have revealed that teachers are not practising effective formative assessment in which feedback is at the centre (Komba & Mwandaji, 2015). According to Lema and Maro (2018), Mathematics teachers are not able to provide constructive feedback as a result of little knowledge they have in the area of feedback provision. Teachers have a predominant use of checkmarks such as ticks and crosses to indicate correctness of students' responses as well as general comments which are sometimes irrelevant in both exercises and examination scripts. Additionally, Kyaruzi et al. (2019), revealed that teachers do not consider feelings and emotions of the students when delivering feedback; they reprimand low achieving students. This reduces the likelihood of using the feedback given to these learners. Moreover, the nature of feedback given to students seems to be influenced by several factors such as teacher's feedback illiteracy (Lema & Maro, 2018), as well as high teacher-students ratio in classrooms (Ndalichako, 2017).

## **Feedback and Students' Learning**

Studies have also revealed that feedback has great potential in enhancing students' learning and academic achievement. Elaborative feedback from either teachers or peers helps students to review their work and improve various areas based on the suggestions given before moving on to the next lesson or assessment tasks (Kyaruzi et al., 2018; Owen, 2016). However, feedback influences students' learning only

when it is relevant and of high quality and when students recognize it as such (Crichton and McDaid, 2016). Therefore, students' perception of assessment feedback from their teachers is crucial in their learning. When students perceive that teachers' feedback is useful, they opt for feedback use in improving their academic performance. Students expect and get satisfied when feedback from their teachers specifies the errors and provide strategies on how to improve their future assessment tasks (Kyaruzi et al., 2019). This seems to suggest that not all feedback provided to students enhance learning (Brown et al., 2016; Harris et al., 2014); but it is only the feedback that students consider to be useful. Therefore, concrete and constructive feedback stimulates learners to profitably engage with tasks, hence leading to better learning outcomes which can be determined by increased performance in the subsequent tasks.

### **Feedback and Performance**

In essence, the aim of feedback is to improve students' academic performance (Wang & Zhang, 2020). Studies show that feedback influence students' academic performance positively when students perceive it helpful and use it (Winstone et al., 2017). Therefore, improvement in performance can easily be achieved through effective teacher feedback delivery. However, increase in performance depends on the quality and the nature of teacher feedback practices (Kyaruzi et al., 2019). Meanwhile, some studies have also shown that there is no remarkable effect of feedback on students' performance (Wang & Zhang, 2020). Hence, a disagreement on the significance of feedback in academic performance. Nevertheless, learning engagement remains pivotal in the creation of relationship between feedback and performance (Zhang & Hyland, 2022). Thus, although feedback may not necessarily have direct effect on students' performance, indirectly, it may do so by altering students' study habits which enhance their learning and finally improve their performance.

## **The Current Study**

The inspiration to conduct this study emanated from the need to address poor performance in Mathematics, alongside presumed role of assessment feedback in enhancing students' learning and performance. As presented earlier on, the provision of effective assessment feedback has been identified among the factors that enhance learning which in turn improves students' academic performance (Wiliam, 2011). Persistent poor performance in Mathematics in certificate of secondary education examination (CSEE) (Mabula, 2015; Mazana et al., 2020), brings some questions on the nature of feedback that Mathematics learners receive from their teachers, whether or not it enhances learning and performance. Therefore, this study investigated the nature of feedback utilized by Mathematics teachers in community secondary schools in Tanzania and its influence on students' performance in Mathematics. The study was guided by three specific objectives:

1. To investigate the nature of assessment feedback presented to students as they learn Mathematics;
2. To explore the influence of assessment feedback on students learning and performance in Mathematics examinations;
3. To identify limitations hindering teachers in administering effective feedback to students in their learning of Mathematics

## **Methodology**

This qualitative study employed a case study design which enabled the exploration of the phenomenon (assessment feedback provision) in its natural settings using various sources of data for triangulation purposes (Creswell et al., 2007). The sample consisted of two Mathematics teachers teaching form three classes and all form three students from two community secondary schools from Moshi Municipality. Stratified purposive sampling was used to select 12 students from each school summing up to 24 who participated in FGD. The study involved both male and female students in equal proportion;

that is, 12 girls and 12 boys. Additionally, from three terminal examination results were used to select the upper, middle, and lower achievers' representative samples. This sampling technique was considered important because the selected schools have both boys and girls, and learners have varied experiences and perceptions towards assessment feedback based on their gender and performance in examinations. The study employed four methods of data collection, namely; classroom observation, interviews, FGD and documents analysis. Classroom observation focused on what and how feedback is delivered in classroom settings. Secondly, one-on-one semi-structured interviews with teachers were conducted to obtain their opinions about the nature of feedback they use. In addition, FGD was devoted to collect data about the common feedback practices students experience from their teachers. Lastly, documents analysis was employed to investigate the nature of written feedback used by teachers as revealed in students' exercise books and marked examination scripts. Data collected from all sources were thematically analysed, whereby data from interview and FGD were transcribed and re-read together with data from classroom observation and document analysis to reveal emerging issues related to the study. Finally, data were organized (to identify patterns), coded and categorised into themes based on the study objectives.

## **Findings**

The study findings are presented along the three specific.

### **Nature of Assessment Feedback utilized by Mathematic Teachers**

Data collected from the participants and the documents revealed that, mathematic classrooms were dominated by verification feedback which was evaluative given either verbally or in a written form. Teachers used verification feedback to determine whether students' responses were correct or wrong. During the lessons, verbal verification feedback was common while document analysis of

examination marked scripts and exercise books revealed that written verification feedback was common. Teachers used check marks which are ticks (✓) for a correct response and crosses (×) for wrong answers. In addition, data from document analysis, FGD and interview revealed the dominance of evaluative feedback in the form of scores, marks, percentage and marks and grades simultaneously. During one-on-one interviews, teachers were asked to explain how they provide feedback for students' written assignment. One teacher replied that; *"In students' scripts I put scores and grades..."* (Interview T<sub>1</sub>, 8<sup>th</sup> September 2020).

The presence of evaluative feedback was also echoed when students were asked during FGD how their teachers provide feedback in their written assignments. One of the students replied by saying; *"He just puts marks and grades."* Adding to that another student claimed that, *"the teacher uses marks, grades and comments such as good and study hard."* The use of evaluative feedback was also noted during document analysis of students' exercises and homework at both schools whereby the assigning of scores, grades, percentage, and marks was observed. Evaluative feedback continues to be predominantly used despite that various studies, for instance Hattie and Timperley (2007), who revealed that the use of evaluative feedback encourages competition among learners and avoiding difficult task hence not enhancing students, learning.

### **Characteristics of Feedback Practices**

Despite that, mathematic teachers utilized verification and evaluative feedback which are ineffective in enhancing students learning of Mathematics (Noor et al., 2010); the feedback had low occurrence, delayed, and generalized.

### **Delayed Feedback**

The study found out that, students not only receive ineffective feedback but also the feedback was delayed especially for written

assignments such as weekly tests, midterm tests, terminal, and annual examinations. During interviews, when teachers were asked to state how long it takes to give feedback after a written assignment, they had the following responses.

*For weekly test which is done every Monday, I provide feedback on Friday, but for midterm test, terminal, and annual examinations it takes one to two weeks to give feedback (interview T<sub>1</sub>).*

Another teacher responding to the same question had the following to say:

*For exercise it takes only one day; for the test because you need to consider many things during marking you cannot mark within a single day because you can only mark ten to twenty scripts per day. Therefore, it takes three to four days to finish marking and giving feedback (interview T<sub>2</sub>)*

Such responses suggest that teachers do not give prompt assessment feedback. Even the possibility of giving feedback after three to four days was uncertain, because, if the teacher can only mark ten to twenty scripts per day it may take him/her at least seven days to finish marking 150 papers which is an average number of students in form three classes, which have up to three streams. Through observation, the researcher noted that a subject teacher was still marking terminal examinations that were administered three weeks before and throughout the entire marking period students did not receive any feedback. At another school it was observed that three weeks after doing the examination, students' marked scripts were still in the teacher's office and there was no feedback given to students concerning that examination as reported by students during FGD. These findings suggested that students not only received feedback which does not support their learning but also it is delayed. Therefore, students are



taught new topics/concepts without having a deep understanding of the previous topics. Failure to understand the previous topics makes difficult for the students to learn new topics because there is vertical relationship between one topic and the other, meaning the knowledge obtained in first topic helps learners to learn the next topic.

### **Low Occurrence**

Data collected through interviews and FGD revealed that there was low occurrence of feedback in Mathematics classrooms. Mathematics teachers not only provide delayed feedback but also sometimes do not provide feedback at all. Responses given by teachers during interviews as well as learners during FGD indicated such inadequacy of feedback in Mathematics classrooms. For example, when one teacher was asked about the effect of the class size on provision of feedback, he responded as follows:

*Sometimes it limits me to test many topics because if I will test many topics, I will not manage to mark all scripts. Moreover, it makes me unhappy to mark those exercises or tests while I face the pressure to give classroom instructions without fail. (Interview T<sub>1</sub>)*

The above statement from the teacher reveals that there are instances when teachers do not mark students' work, hence absence of assessment feedback provision, because feedback is a result of deep analysis of the students' work. The statement further implies that, some teachers consider the marking exercise a tedious job hence not undertaken with the right frequency. Similarly, during FGD, students had explanations on how long it takes for them to get feedback after a written assignment or test. One student from Umoja (pseudonym) secondary school stated that;

*It depends. For example, end of topic exercises takes at least one week for feedback to be received. But for the midterm and terminal or annual examinations, it may take three to four weeks to get feedback. (FGD S7)*

Their counterparts from Ushindi (pseudonym) Secondary school responding to the same question had the following to say:

*For examinations, it takes much time, for example we did a terminal examination [three weeks back] but we are yet to receive any feedback until now. (FGD S10)*

Adding to that another student said;

*For midterm tests, we did not receive any feedback since July and sometimes teachers burn our examination scripts without giving us any feedback. (FGD S1)*

On top of that, another student emphasized the low occurrence of feedback by saying: *Sometimes our teacher brings back our scripts unmarked and he does not do any correction” (FGD S3)*

These statements from students concur with what the researcher observed in the field whereby a good number of exercises and home works placed on Mathematics teachers’ desks were not marked at all. These findings suggest that feedback provision is very rare practice in Mathematics classrooms as a results students repeat similar mistakes in subsequent tasks hence low performance at CSEE.

### **Generalized Feedback**

Generalization of feedback was another characteristic of feedback utilized by Mathematics teachers in the schools that were involved in the study. Data collected through interviews, FGD and lesson observation showed that generalized feedback is the most common form of feedback used by Mathematics teachers. For example, when one teacher was asked about his preferred practices, he replied;

*“... because of overcrowded classes I provide general feedback to the whole class in order to save time; it is difficult to provide feedback to individual learners.” (interview T1).*

Similarly, during lessons observation, the researcher noted that teachers were solving mathematical problems on the chalkboard themselves as a means of giving corrective feedback when all students in the class had failed to solve the same. Generally, findings revealed the dominance of generalized feedback over individualized one. However, generalized feedback is not helpful on students' learning because each student has individual strength and weaknesses hence strategies for improvement need to be individualized.

### **Perceived Effect of Feedback on Students' Learning and Performance**

The second objective of the study to establish the influence of assessment feedback on students' learning and performance in Mathematics. The findings are presented in the next subsections.

#### **Influence of Assessment Feedback on Learning**

During interviews, teachers were requested to give their views about the role of feedback in improving students' learning. They had the following responses: *"Feedback helps student to learn, without feedback there is no learning"*

Another teacher argued that,

*Feedback plays a great role in improving students' performance. It helps them to know the areas which they are good at. This enables them to make revision on those areas which they are not good at in order to attain maximum marks in their examinations; it also makes them happy and motivated to learn (interview T2).*

Similar opinions to what was shared by T2 were given by students during FGD when they were asked to tell how they use feedback in their day-to-day learning. The responses from Ushindi secondary school students were as follows:

*I use the feedback to make revision because sometimes teachers repeat same questions in examinations.*

Another student responded by saying,

*I use the given feedback to find and solve other questions with the same concepts hence helps me to have a deep understanding about that concept.*

Similar opinions were given by participants from Umoja Secondary school (pseudonym). Most of them claimed to use feedback to find more questions of similar nature in the past papers and try to solve them using the approaches given in the feedback especially when they are close to the examination period. Such explanations from teachers and learners underscore the importance of feedback on students' learning of Mathematics. Therefore, it is crucial that teachers provide feedback to the learners who should in turn be encouraged to use feedback from both teachers and peers to improve their learning, and ultimately their performance in the subject.

### **Influence of Assessment Feedback on Performance**

This study also captured the perceptions of teachers and students on the effect of assessment feedback on learner's performance in Mathematics. When responding to the question about the role of feedback on students' learning, teachers had the following responses; *"Feedback helps to improve learning because they score better in subsequent assignment"* (interview T1)

**Likewise, while responding to the question on whether** the feedback given to learners helps to improve performance, T2 said:

*Yes, it helps them to improve their learning, for example, the first test I gave them, only ten students passed but after giving them feedback, fifty students passed the next test, so it is obvious that feedback also improve performance.* (interviewT2)

Such explanations from teachers indicate how feedback for one task helped the learners to learn more and get better scores in subsequent tasks. Likewise, students were asked to give their views about the

influence of feedback on their performance in Mathematics at Ushindi Secondary School during FGD. One of them had the following observations: It helps me to be confident when entering the examination room and sometimes when I find some questions discussed during feedback provision, I can easily remember what my friends said about that concept during discussion (FGD)

Another respondent from Umoja (pseudonym) had the following to share:

*Sometimes the same question or questions of similar concept we did in one assignment and receive feedback appears in the next assignment, in this case it is easier to attempt such a question (FGD)*

The statements from these students suggest that feedback helps students to solve mathematical questions with similar concepts or similar questions to the ones that appeared in their previous tasks. This helps to raise their performance in these tasks. Generally, it is evident that, feedback has influence on performance, though its effect depends on how learners utilize the given feedback in their day-to-day learning. Therefore, it can be argued that feedback affects students' performance indirectly through enhancing their learning which occurs only when students use the given feedback.

### **Limitations to Providing Effective Feedback**

The study further found out that there are several factors which limit teachers to provide effective feedback in Mathematics. These factors include; teacher's feedback illiteracy, class size, workload, overloaded curriculum and high-stake examinations.

### **Teacher's Feedback Illiteracy**

Data collected through interviews indicated that teachers' understanding about feedback is very low as most of them consider assessment feedback to imply getting information about learners'

strength and weaknesses in a particular topic, which is immediately followed by planning for future lessons. They do not consider feedback as informing the learners about their strength and weakness in different areas as well as strategies for improvement. Such misconception was depicted clearly when the teachers were asked to express their understanding about assessment feedback. For instance, interviewed teacher T1 said,

*Assessment feedback is the way you examine and check how students have understood the taught concept; it helps to know whether the learners have understood the lesson (Interview).*

Moreover, when he was asked, what was he taught during pre-service training about feedback, he said,

*At the college I was taught that whenever you teach make assessment which gives feedback" (Interview). Responding to the same question, teacher T2 said, "Aaah, no. We were not taught about feedback provision (Interview).*

Therefore, it can be argued that, teacher's little knowledge about feedback originates from teacher training institutions where they are not prepared properly, because assessment feedback not only inform teachers about his/her teaching but also tells learners about how they progress.

### **Large Class Size and Heavy Workload**

The findings show that class size and workload are other challenges hindering teachers to provide effective feedback. It was noted that, in both schools that were involved in the study, teachers are teaching more than 150 form three students divided in three streams. This means that, each class had more than 50 students. Therefore, in their response on how large number of students and workload affect the nature of feedback they offer to their students T1 said, *"My teaching load, leads to delayed feedback and make marking exercise very tedious hence*

teachers avoid giving test and assignment to the learners” On the side of class size, he commented that, “Large classes make the marking of exercises tedious hence teachers opt not to provide assignments, or give just a few questions for students to work on” (Interview). In addition to the teacher’s responses the researcher noted that, teacher T1 was not able to finish marking terminal examination scripts on time due to other administrative responsibilities which forced him to be away from the school compounds for some days. Moreover, responding to similar question T2 said,

*Sometimes, it becomes difficult for me to test students in many topics because when you do that you will have many questions and therefore you will not manage to mark all scripts. It sometimes makes you dislike marking those exercises or test (interview).*

These findings suggest that in the presence of large classes and heavy workload teachers cannot provide constructive feedback to their learners. Therefore, an appropriate teacher-students ratio is important for effective provision of feedback and eventual meaningful learning of Mathematics.

### **Overloaded Curriculum Content and tension of High-stake Examinations**

Overloaded curriculum and high-stake examinations are other factors hindering feedback provision. Teachers were found to be busy struggling to cover the syllabus which is overloaded in order to have time for testing their students before high-stake examinations. Through interview with one Mathematics teacher at Umoja Secondary School it was noted that, all schools in Moshi municipality sit for similar examinations for terminal and annual examinations. Therefore, there is a sense of competition between the schools. The effect of overloaded curriculum and high-stake examination was further revealed during an interview with T2 who stated that,

*... sometimes even politicians need us to complete topics early, so we forget to provide feedback, we forget to provide assessment tasks because what we care about most is to complete the topics in order to please them (Interview T2)*

When he was further asked; about the effects of not giving feedback students? He said,

*It obviously affects their learning, but sometimes in this teaching profession is not respected because even politicians interfere a lot and sometimes they come to pressurize our school management and the management cascade that pressure on us that we must cover all the topics as soon as possible. They do not understand that syllabus indicates duration of completing each topic (Interview).*

Generally, statements from participants indicate that Mathematics teachers are working under high pressure of completing to teach the overloaded curriculum in order to have ample time to test and retest their students as they prepare them for annual examinations which are conducted across the municipality. This in turn has forced teachers not to provide formative assessment which could have helped them to identify students' weaknesses and strengths for each taught concept hence providing feedback that would help learners to have deep understanding of those concepts before moving on to the next topic. Therefore, statements from the teachers revealed that, formative assessment practices are ignored for the sake of completing the curriculum content earlier than the stipulated time.

## **Discussion**

The findings of this study indicate that, assessment feedback has positive effect on students' performance in Mathematics because it is used to make revision, reading to get deep understanding of the concepts, and preparing for subsequent assignments. Moreover, feedback makes student confident as they approach next assignments. This is consistent with findings from previous studies by various



researchers such as Winstone et al. (2017) who observed that constructive feedback increases students' performance. However, feedback does not affect performance directly, but it does so by changing student's personal study habits (Wang & Zhang, 2020). This study like another previous study conducted by Yin and Wang (2016) found that, one of the important aspects of feedback is to trigger students learning motivation understanding the variance between their current performance and the expected one hence investing more efforts to reduce the gap through revising their works, solving questions of similar concepts, and repeating reading the concept which positively affect their learning and performance. Therefore, it can be summarized that, increase in performance depends on how students use feedback which also depends on the quality and kind of feedback given (Kyaruzi et al., 2019a).

However, this study revealed that, task level feedback which includes evaluative feedback in terms of comments; grades and scores as well as verification feedback were the common feedback practices in the sampled schools. This concur to other findings by Hattie and Timperley (2007) who claimed that, task level feedback is the most dominant assessment feedback used by teachers. Moreover, the use of evaluative feedback in verbal or written form is said to be dominant in classrooms as it has been found in this study. Additionally, the study found that teachers use verification feedback in form of ticks for correct responses and crosses for incorrect solutions in both students' exercises and examinations scripts similar to what was reported by Lema and Maro (2018) in their study about utilization of feedback in teaching and learning Mathematics in Tanzania secondary schools. Furthermore, the study revealed that, teachers use of verbal and written comments was another dominant form of feedback used by teachers, though, the comments were vague and sometimes irrelevant. This was also reported by Lema and Maro (2018), who observed that, comments are a

dominant form of feedback amongst secondary school teachers in Tanzania, yet the nature of comments reflect teachers' insufficient knowledge in the area of feedback provision. Since the task level feedback is said to be ineffective for enhancing deep learning (Hattie and Timperley, 2007), it can be argued that it contributes to poor performance in the national Mathematics examination. Thus, this is the case with Mathematics performance in Tanzania secondary schools, and particularly the community secondary schools which the present study explored.

Moreover, the findings of this study revealed that, assessment feedback seem to be more of a generalized. Teacher's feedback is given in groups (the whole class) while; individualized feedback was found to have no room. In addition, the feedback was delayed and sometimes not given completely hence students entirely depended on peer feedback. These findings correspond with the findings of other scholars who reported that, due to large classes teachers were unable to use effective assessment practices and to provide support to individual students (Kitta & Tilya, 2010; Marais, 2016). Therefore, it can be asserted that, generalized feedback which is also delayed and inadequate as it has discussed contribute to poor performance in Mathematics. This is due to the fact that, generalized feedback does not address the individual needs of the learner which are unique (Wiliam, 2011), while delayed and inadequate feedback make students repeat similar mistakes in subsequent assignments hence leading to poor performance.

Again, the findings of the current study revealed that sometimes teachers do not mark or provide feedback to their learners completely. These findings are similar to other scholars observed that, there is a tendency of teachers to neither mark students' work nor help with correction (Kyaruzi et al., 2019a; Ndioho & Joy.C, 2017). Generally, it can be argued that, this task level, evaluative feedback which is generalized, delayed and inadequate either verbal or written does not

help learners to get deep understanding of various concepts through making revision and solving questions of similar concepts contributes to poor performance in Mathematics at CSEE.

### **Conclusion and Recommendations**

This study attempted to assess the nature of assessment feedback utilized by mathematic teachers in selected community secondary schools in Tanzania and its influence on students learning and performance in Mathematics. Findings showed that task level feedback which was evaluative in nature dominated mathematic classrooms. Additionally, feedback was more generalized, delayed and rarely occurred. This kind of feedback might be one of the factors that contribute to poor performance of students in Mathematics at CSEE. On the one hand, the study recommends professional development programmes for in-service teachers focusing on the provision of effective feedback should be conducted regularly to equip them with appropriate knowledge and skills. These will enable teachers to provide effective feedback which will, in turn, enhance students learning and improve performance in Mathematics at CSEE. On the other hand, students should be encouraged to use feedback given by teachers and peers in order to understand various concepts which in turn will improve their performance at CSEE.

## REFERENCES

- Andersson, C., & Palm, T. (2017). The impact of formative assessment on student achievement: A study of the effects of changes to classroom practice after a comprehensive professional development programme. *Learning and Instruction, 49*, 92–102. <https://doi.org/10.1016/j.learninstruc.2016.12.006>
- Bijami, M., Kashef, S. H., & Nejad, M. S. (2013). Peer feedback in learning English writing: Advantages and disadvantages. *Journal of Studies in Education, 3*(4), 91. <https://doi.org/10.5296/jse.v3i4.4314>
- Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th ed). Pearson.
- Hattie, J., & Timperley, H. (2007). The power of feedback. *Review of Educational Research, 77*(1), 81–112. <https://doi.org/10.3102/003465430298487>
- Havnes, A., Smith, K., Dysthe, O., & Ludvigsen, K. (2012). Formative assessment and feedback: Making learning visible. *Studies in Educational Evaluation, 38*(1), 21–27. <https://doi.org/10.1016/j.stueduc.2012.04.001>
- Henderson, M., Phillips, M., Ryan, T., Boud, D., Dawson, P., Molloy, E., & Mahoney, P. (2019). Conditions that enable effective feedback. *Higher Education Research & Development, 38*(7), 1401–1416. <https://doi.org/10.1080/07294360.2019.1657807>
- Irawan, E., & Salija, K. (2017). Teachers' oral feedback in EFL classroom interaction (A Descriptive Study of Senior High School in Indonesia). *ELT Worldwide, 4*(2), 138–152.
- Kitta, S., & Tilya, F. (2010). Assessment status of learner-centred learning in Tanzania in the context of the competence-based curriculum. *Papers in Education and Development Journal, 77*–90.
- Kumar, Vd., & Rajasekhar, Ss. S. N. (2019). Emphasizing the critical role of feedback in competency-based medical education. *Indian Journal of Health Sciences and Biomedical Research (KLEU), 12*(3), 268. [https://doi.org/10.4103/kleuhsj.kleuhsj\\_157\\_19](https://doi.org/10.4103/kleuhsj.kleuhsj_157_19)
- Kyaruzi, F., Strijbos, J. -W., Ufer, S., & Brown, G. T. L. (2018). Teacher AfL perceptions and feedback practices in Mathematics education among secondary schools in Tanzania. *Studies in Educational Evaluation, 59*, 1–9. <https://doi.org/10.1016/j.stueduc.2018.01.004>

- Kyaruzi, F., Strijbos, J.-W., Ufer, S., & Brown, G. T. L. (2019). Students' formative assessment perceptions, feedback use and Mathematics performance in secondary schools in Tanzania. *Assessment in Education: Principles, Policy & Practice*, 26(3), 278–302. <https://doi.org/10.1080/0969594X.2019.1593103>
- Lema, G., & Maro, W. (2018). Secondary school teachers' utilization of feedback in the teaching and learning of Mathematics in Tanzania. *University of Dar Es Salaam Journals*, 36(1), 104–117.
- Mabula, S. (2015). Modeling student performance in Mathematics using binary logistic regression at selected secondary schools: A case study of Mtwara Municipality and Ilemela District. *Journal of Education and Practice*, 8.
- Mazana, M. Y., Montero, C. S., & Casmir, R. O. (2020). Assessing students' performance in Mathematics in Tanzania: The teacher's perspective. *International Electronic Journal of Mathematics Education*, 15(3), em0589. <https://doi.org/10.29333/iejme/7994>
- Ndalichako, J. L. (2017). Examining classroom assessment practices of secondary school teachers in Tanzania. *National Examinations Council of Tanzania*.
- Ndioho, O. F., & Joy, C. C. (2017). Biology teachers' workload and academic performance of secondary school students in Abia state. *IOSR Journal of Research & Method in Education (IOSRJRME)*, 07(01), 91–94. <https://doi.org/10.9790/7388-0701019194>
- Noor, N. Mohd., Aman, I., Mustafa, R., Seong, T. K. 2010 . Teacher's Verbal Feedback on Students' Response: A Malaysian ESL Classroom Discourse Analysis. *Procedia - Social and Behavioral Sciences*, 7, 398–405. <https://doi.org/10.1016/j.sbspro.2010.10.054>
- Suri, H. (2011). Purposeful sampling in qualitative research synthesis. *Qualitative Research Journal*, 11(2), 63–75. <https://doi.org/10.3316/QRJ1102063>
- William, D. (2011). What is assessment for learning? *Studies in Educational Evaluation*, 37(1), 3–14. <https://doi.org/10.1016/j.stueduc.2011.03.001>