

# Chapter 10

## Effective Feedback Strategies that Promote Critical Thinking Skills in Online Learning Environments: An Online Assessment Learning Perspective



**Sharon Ndolo**

**Abstract** This paper presents a thematic analysis of how higher education instructors can effectively provide feedback in the online learning environment, in such a way that, it promotes critical and creative thinking skills in the students. Feedback has been a great point of interest to many researchers. However, previous research has mainly focused on analyzing student perception toward the feedback they receive in the learning environment but, little focus is being put on how effective feedback should be delivered to the students, in such a way that sparks their thinking to greater heights improving the learning process. This comprehensive review of literature will explore various interactive feedback strategies such as, those recommended by prominent researchers (Narciss, 2008) that instructors can utilize. The paper will provide dominant themes within several research literature on feedback, with an aim of enhancing the quality of feedback in the online learning environment.

**Keywords** Feedback · Assessment · Higher education · Course signals · Technology · Online learning

## 10.1 Introduction

### 10.1.1 Definition of Feedback

Feedback is the most important element in the learning process. Cookson (2017) defines feedback as the “lifeblood” of learning. Carless (2002) believe that feedback is the most powerful element in learning and has the most powerful influence on student achievement. Higher educational institutions are embracing a culture of online learning where majority of the courses are now offered through online learning management systems. Thomas, West, and Borup (2017) and Wolsey (2008)

---

S. Ndolo (✉)

University of North Texas, 1155 Union Circle, Denton, TX 76203, USA

e-mail: [sharonndolo@my.unt.edu](mailto:sharonndolo@my.unt.edu)

stated that this could be as a result of the student–teacher interaction that is available in the electronic environment, that is achieved through feedback, the building block of teacher–student relationship in online learning environment. In addition, Kuo, Walker, Schroder and Belland (2014) stated that the difference between online courses and traditional face to face courses is the interactions between the students and the teachers.

Hunt and Pelligrino (2002) and Evans (2013) found that the electronic environments give a lot of opportunities to track student performance, frequent self-testing as compared to face to face meetings. In addition, Gaytan and McEwen (2007) found that, a high percentage of students now prefer online learning due to convenience of learning anywhere and is further supported by, Hast and Healy (2016) who stated that, “our students now want to learn anywhere at anyplace”.

Therefore, as recommended by Gaytan and McEwen (2007) an increased awareness about online assessment is crucial, especially in this era where majority of higher educational institutions are incorporating technology into their learning environment. Thus, this paper will focus on providing effective feedback strategies that instructors can utilize in their online courses by analyzing effective feedback strategies that have been rated the best by students in various research.

### ***10.1.2 Technology Affordances and Feedback***

Technology has improved the assessment process in online learning environments. Interaction is what makes students satisfied in the learning environment and its mostly promoted using technology. Johnson, Steelmarck, and Barthel (2018) stated that electronic feedback assists instructors in providing effective feedback which is also supported by Nagel and Kotze (2010), who stated that technology has provided more opportunities for interactions among students and the instructors with ease. Nevertheless, teaching in an online environment should not just be about books behind the glass with minimal interaction because it will not make a difference in the learning process. This is evident by, Wolsey and Hunt and Pelligrino (2002) who stated that despite the affordances of assessment offered by the advancement of technology, instructors must be able to use it well, to track student progress and give quality feedback to their students. This is also supported by Kuo et al. (2014), who stated that self-efficacy and Internet-self-efficacy are crucial in online learning. When instructors are technologically competent, chances are that they will encounter quality interactions with their students. Effective use of technology enhances interactions between students, instructors, and content.

Gaytan and McEwen (2007) conducted a qualitative study to find out the perceptions of online teachers and students about online assessment techniques. The authors found that, online instruction and assessment must balance the requirements of technology and learning outcomes. The authors, emphasized the need for using a variety of assessment techniques in providing meaningful and timely feedback which can be

achieved by coming up with good rubrics, using email messages, discussion forums, chat room conversations as venues for providing feedback.

In addition, Johnson et al. (2018), conducted a qualitative study and evaluated students' assignments for an introductory research methods class. The authors found that, the margins in the Microsoft and Google drive editing tools allowed the instructor to give more comments within the students work and the students could clearly point to where they were wrong. A similar qualitative study was conducted by Wolsey (2008) where he used interviews to determine the types and forms of feedback on assignments with 25 graduate students. Wolsey found that all 25 students agreed that feedback embedded within the students work, showed areas of improvement and at the same time gave the students justification of why they missed their points. The authors thus advocate for instructors to give feedback within students work using editing tools as opposed to giving a summary at the end of their assignments.

The use of Adaptive technology in the assessment area has been beneficial to educators. This is evident in an experimental research conducted by Matthews, He, and Patterson (2012) to understand how "auto grading" with an adaptive learning component might affect the quality, quantity, and speed of feedback. The authors found that, in the pre-implementation control set, more than 30% of students did not get any feedback and in the post-implementation set, majority of the students received feedback with only less than 1% not receiving any feedback. Matthews, He and Patterson findings show that the use of AGLS (Adaptive Grading /Learning Systems) will increase quantity of feedback, and decrease time taken for assignments to be graded but does not affect the quality.

MacWilliam and Malan (2013) sought to address the issue of the quality of feedback that was missing in Matthews et al. (2012) findings. MacWilliam and Malan (2013) study aimed at, decreasing the amount of time needed for grading assignments and improving the quality of feedback. The authors used the CS50 submit that tracks the time graders speed and length of feedback they give to the students. The CS50 was a useful assessment tool as it not only notifies the students when their assignments are graded, but also records how many students viewed the feedback allowing the instructors to know if the feedback was utilized and how useful it was to the student.

Social media has also provided platforms where instructors can provide feedback in online learning environment. For example, Mccarthy (2017) conducted a qualitative study where he/she analyzed feedback that was received online via Café, an e-learning application hosted by Facebook. Participants were 118 students of whom 19 were international students. Student experience was evaluated using online surveys using Likert-type scale statements and open-ended questions. Mccarthy found that, the feedback was more in-depth as evident by, 132 posts to the pin-board, text comments, links to external websites, videos, and images showing that all the participants visited the Café forums frequently.

One main factor to remember is that, despite the online platform giving avenues such as chat rooms, discussion forums, emails, social media platforms for interaction, it is important that instructors maintain their presence as instructor feedback in the online environment plays an important role in student individual assignments.

### ***10.1.3 Language of Feedback***

Gigante, Dell, and Sharkey (2011) stated that learners tend to associate no feedback with approval that they did the right thing. Hence feedback should be given using the right language. Depending on the tone that is used, feedback can be either referential, directive, or expressive (Adel, 2017). Duijnhouwer, Prins, and Stokking (2012) stated that the more receptive you are to the feedback, the more it will improve the learning process. Therefore, to make students receptive to feedback, instructors should ensure that they give feedback in the most appropriate language. Adel (2017) discourages instructors from using directive feedback such as, ‘you have to, “you must” as it tends to negatively influence student’s motivation to learn. Instead, Adel, encourages instructors to use facilitative instructions for facilitative instructions such as, ‘you might want to consider’ which has a positive tone hence promote learning.

Instructors can also be cautious of the language they use in providing feedback by avoiding being too critical as it may affect the student’s ability to put in more effort in the future as it makes them feel labeled as failures. Instructors are prone to offer feedback quickly and end up being judgmental (Wolsey, 2008). Instead, instructors should notice student’s effort and acknowledge good work they have done before judging the students work. Bergh, Ros, and Beijaard (2014) refers to this as “optimal feedback’.

In addition, the language used when interacting with the students affects the level of student satisfaction in the classroom. For example, in a qualitative study done by, Kuo et al. (2014), the impact of learner-instructor interaction on student satisfaction depends on how the students papers are evaluated, thus if they are evaluated with a negative language, student satisfaction will decrease leading to high dropout rates and poor academic achievement. This is evident by Nagel and Kotze (2010) who found an association of high dropout rates of students due to limited feedback from the instructor.

Gigante et al. (2011) advocated for instructors to use the “feedback sandwich model” when giving feedback by starting with a positive note, then points out the area that needs improvement and finally another positive note that ends the feedback on a good note. Gigante et al. (2011) “sandwich model” is like Adel (2017) “expressive feedback model” where instructors use praise, then criticism and finally give their opinion.

Therefore, instructors should always aim to acknowledge the student’s effort even though it does not meet their expectation. Wolsey (2008) identified one of the effective feedback strategies as the identification of the positive aspect of the students work. In addition, Bailey (2010) found that for students to improve, teachers felt that the written feedback should be worded positively. Thus, instructors need to organize their comments well in a way that reveals their presence as being supportive (Adel, 2017).

### 10.1.3.1 Feedback Specificity

Vague feedback may sometimes make the students struggle to identify their own strengths and weakness. Carless (2006) stated that sometimes instructors offer feedback that may be difficult for the students to interpret thus having a negative impact on student's self-perception and confidence. Especially in this era where our educational institutions are diverse with people from different countries, international students are prone to misunderstand feedback due to language barriers Mccarthy (2017).

Cookson (2017) stated that the gap that exists between what teachers expect and what students do, is the leading cause of student dissatisfaction and teacher frustrations. Chanock (2002) found that it is sometimes difficult for instructors to give feedback that the students will understand what they mean (difficult for someone else to read your mind). To close this gap, the authors advocates for, instructors to be more precise and ensure that the students understand feedback they give by using more information and not assuming that the student will know what you mean. However, Wolsey (2008) contradicts Chanock (2002) by stating that, too much specificity on feedback is not good as it discourages the learners from exploring their thinking in depth.

In addition, Mallonee and Breihan (1985) stated that instructors should avoid abusing editing tools where they cover the entire students work with too much corrections from the very minor issue to the major. Mallonee and Breihan (1985) referred to this as, covering students work with "blood-red rivers of ink". Too much corrections make the students feel overwhelmed making it difficult for the student to know what is really important. Instead, instructors should use the margins well to give thoughtful feedback. This is supported by Wilkinson, Couldry, Philipps, and Buck (2013) who stated that feedback should be provided in small doses. Findings from previous research show that there are differing perceptions on the amount of feedback that should be delivered.

### 10.1.3.2 Summative Vs Formative Feedback

One of the major setbacks of online learning is that student-teacher interaction is mostly limited to feedback about their assignments hence it is prone to have some degree of evaluation (Cox, Black, Heney, & Keith, 2015). Promoting teacher presence: Strategies for effective 401 and efficient feedback to student 2015). Gigante et al. (2011) and Cox et al. (2015) view evaluation as summative, the final judgement of the learner's performance for determining grades and graduation decisions. The author's stated that, instructors should refrain from giving feedback that is too general but offer formative feedback that is specific aiming at improving future performance. This is further supported by Coll et al. (2013) who stated that, feedback should have specific pointers on areas of improvement such as, providing references, making suggestions, fostering reflection, and formulating questions.

According to Wilkinson et al. (2013) feedback is an ongoing process, a formative one that helps the learner improve their learning. This goes hand in hand with Gigante

et al. (2011) who stated that, feedback should be about improving future performance and instructors should refrain from encouragements such as, “Good Job” because it is supportive, but does not do nothing to improve learner skills. In a qualitative study conducted by Chanock (2002), 232 students were asked about their perceptions of the function of feedback. All the students stated that feedback should be informative on how they could improve other than feedback that categorized their assignments as good or bad. One hundred and eighty-four students felt that the function of feedback is not to judge a student’s ability but to help them improve their learning. This is supported by, Wilkinson et al. (2013) and Cox et al. (2015) who found that, feedback conveys information and evaluation coffers judgment which makes students insecure causing them to see the instructor as harsh or dismissive. Thus, instructors should ensure they mold their presence well by creating an identity that makes students feel acknowledged, guided, and well cared for.

Therefore, as Hunt and Pelligrino (2002) stated, current assessment practices that are summative are not well aligned with improving student learning. Instructors need to come up with different approaches that stem from cognitive theories of knowledge to be implemented in the classroom.

### 10.1.3.3 Assignment Structure

Teacher presence should be laid out in the course design and organization. Instructors should come up with instructional activities that makes the students think deeply about concepts presented to them and at the same time the instructors should be able to know what to do next to advance the students to the next stage of understanding. The instructor should act as the generative guide, facilitator, reflective guide, mediator, or role play (Nagel & Kotze, 2010).

Instructors have the responsibility to ensure that they structure their assignments in a way that will allow them to give detailed feedback to their students work. Carless (2002) stated that assessment promotes learning when the assignment is structured in a way that contains many opportunities for the learners to receive detailed, positive, and timely feedback.

In an active research conducted by Carless (2002), groups of three students were given an assignment to collect a portfolio of assessment tools and write the importance of the tool. The students submitted their work using the “mini-viva” and got opportunity to justify their work and received feedback from the instructor. Carless found that, all students liked how the assignments were structured as it enabled them to get an opportunity to get feedback that improved their overall projects.

Another way to promote feedback in students writing is through the utilization of peer reviews. According to Abdullah, Hussin, and Shakir (2018), instructors can structure their assignments in a way that allows for the social interactions such as, collaborative writing projects, where students interact and write papers collaboratively might help students gain self-confidence in their writing and reduce their anxiety when they see their work corrected as a group. In addition, Gibbs and Simpson (2004) and Duijnhouwer et al. (2012) emphasized the need for instructors to design

their assignments in a way that will allow the students discuss with their peers and evaluate each other's work to see areas of improvements.

For feedback to promote learning, Hummel (2006) advocated for assignments to be structured using driving questions in a way that will have the student think and reflect when coming up with their answers. Hummel (2006) then suggested for instructors to use questions when giving feedback, as it helps understand why the student gave the response they did and thus, easy to point out the specific step that the student needs to change. This is also supported by Langer (2011) who stated that instructors should use probing questions during their assignments as it will allow the students to put in their effort, which in turn facilitates good delivery of feedback as the instructor can monitor the student work step by step.

#### 10.1.3.4 Immediate Vs. Delayed Feedback

The time at which instructors offer feedback to the student is an important area of consideration. Dating back from Behaviorist theorist such as the Skinner's operant learning theory, feedback is seen to be effective when it is provided immediately. However, Spector, Merrill, van Merriënboer, and Driscoll (2008) found that, early researchers such as, Anderson and Kulhavy (1972) came up with the concept of *delay retention effect* which meant that giving immediate feedback might hinder the acquisition of the correct response. Spector et al. (2008) stated that when feedback is delayed, the incorrect response is forgotten, thus students will embrace the feedback well. Therefore, when instructors want students to realize their mistakes and offer correction, it is best for the feedback not to be offered immediately because it will not foster the acquisition of the new skill. However, Spector et al. (2008) found that, when instructors offer feedback that is aimed at offering new knowledge of the result together with knowledge about the mistake made in a multi-try process that needs students to look into their errors and to identify error correction steps, then the feedback can be provided immediately.

#### 10.1.3.5 Single Try Vs Multiple Try Feedback

Spector et al. (2008) found out that prominent researchers in the field of feedback such as, Narciss (2008) found that, majority of online classroom environments feedback is offered in the form of single try that is, learners do what is requested by their instructor then they are provided with feedback and do not have the opportunity to respond again to the same item. Narciss (2008) conducted a review of literature on feedback and found that majority of researchers recommended for the use of Multi-try form of feedback delivery which is best achieved by a concept known as Answer Until Correct (AUC) feedback which is more effective for promoting high order thinking skills among students.

Narciss (2008) found that majority of instructors utilize the simultaneous approach of delivering feedback all at once. While other instructors use complex elaborated

feedback, which is presented step by step. However, other researchers view that, due to the cognitive load of delivering feedback all at once it is better to deliver it in a sequential step by step manner. Sequential presentation of feedback will require the instructor to have multiple tries, this might be the reason as to why most instructors offer feedback using the simultaneous approach with the single try approach.

#### **10.1.3.6 Discussion (Implications)**

According to Narciss (2008) the time taken for the learner to understand feedback given to them depends on the learner's characteristics, quality of the feedback provided, the complexity of the tasks, and the type of error that the learner had made. High skilled learners may only need first response but for low skill learners' informative feedback alone might not be enough to meet their needs. How feedback is provided, depends on how the learners process and interpret information provided which is influenced by so many factors such as prior knowledge, motivation levels, and learning goals (Narciss, 2008).

Therefore, higher education institutions should consider incorporating course signals (CS) in all the courses that are offered online. Learning analytics provides a good opportunity to identify struggling students and provide intervention early to increase their chances of being successful in their studies. Instructors can use course signals to know more about various factors that might affect the student's success in the class such as grades, effort, previous academic history, and student demographics. Majority of instructors and teacher assistants fall victim of providing feedback without putting these factors into consideration hence making the feedback process difficult for both the instructor and the student. Thus, incorporating course signals will enable instructors provide effective feedback as they will be aware of their students more. However, one main issue of concern with course signals is that, the workload for instructors and TA's will increase as evident by, Arnold and Pistilli (2012) who found that, students posted a lot of questions before due dates. However, this appears to be an issue that can be resolved if the school administration is willing to invest in more teacher assistants to help the instructor. Also, as a passionate instructor this should not be a concern because the aim of all instructors is to improve the students learning outcomes, which can be achieved by sacrificing time to ensure availability to respond to students' questions.

In addition, higher educational institutions should consider investing in training their teachers to know what good teaching means and ensure that teaching expectations are well laid out in rubrics (Lenihan, 2016). As mentioned earlier, it is the responsibility of the instructor to set the climate of the classroom. Teacher presence should be felt in all aspects of the learning, that is, online courses should be designed well, instructions should be easy to follow, and the assignments should be structured in a way that allows for the instructor to deliver feedback well.



A simple layout composed of a combination of various strategies for effective feedback is important because, if instructors have a clear way in which they can provide effective feedback, it will make the learning environment more interactive and improve student's mastery of concepts learned.

## 10.2 Conclusion

Several major themes emerged after reviewing literature on effective feedback strategies that instructors can utilize in the online learning environment. A major common theme was, the language that instructors use when giving feedback. Previous research shows that majority of instructors fall victim of giving feedback quickly before thinking how it will affect their student. Instead, instructors should always operate with the mindset that, 'what is common sense to them may not be common sense to the students.' Instructors should be cautious not to be too critical of students work as it may hinder their learning process. Previous research shows us that, students' self-confidence is important in the learning process. Hence instructors should be careful with the "tone" that they offer their feedback as it may affect the student's self-esteem which in turn affects their ability to perform well. In addition, there is an increased diversity of students in higher educational institutions today, thus, it is important that instructor also consider language barriers and cultural differences when relating with international students. That is, what might appear as polite language in the United States might not be polite in Africa.

Another major theme was the specificity of feedback. It is evident that there are differing perceptions on the amount of feedback that is enough for the students. Some authors recommend for giving more information on feedback while others view too much information overwhelming to the student. This is an area that needs more attention as students are different, others might be grateful for the corrections while others might see it as somewhat overwhelming and intimidating when the instructors cover their entire work with corrections.

Utilizing technology affordances was another major theme that was mostly discussed in previous research. Technology is the key enabler of online education in higher education today. Despite technology creating more avenues such as chat rooms, discussion forums, emails where feedback can be delivered in an online learning environment, previous research has emphasized the importance of instructors having the skills to know how to use technology for the feedback to be effective. In addition, technology has also enabled instructors to be able to provide as detailed feedback as possible using editing tools that allow the instructors to add, modify, or delete information within the students work. Nevertheless, this has brought about a lot of debate between various researchers as it is not clear, what amount of feedback is enough. Previous research has shown that feedback should be as specific as possible while other researchers found that too much specificity causes the students to be overwhelmed. This is an area that needs more research. In addition, with the advancements of technology, feedback can be presented in various forms including but not limited

to text, graphics, animations. Therefore, future research should investigate how and when to apply multimodal feedback.

The structure of assignments was something critical too. It is evident from previous research that the basis of giving effective feedback starts with how well the assignments are structured. Instructors have to ensure that they design their course work well, in a way that will allow them to offer feedback to the students. Some of the ways that have been suggested in previous research include the use of constructivist approach in teaching where students are required to explore on topics step by step which facilitates the feedback process as the instructor is able to identify the specific step that the student missed. Group work activities was also a major finding in various research, as it avoids instances when a student feels that they were the only one who did not get it right because correcting a team reduces the level of anxiety as opposed correcting one person.

Finally, formative and summative feedback was a major issue of concern to many researchers. All researchers in my study agreed that feedback should be about improving the learning process as opposed to assigning grades to students and judging them based on their grades. Previous literature shows how grades do not matter but what counts is what the students learned from the feedback. This is evident by students who utilized the “mini viva” and got an opportunity to explain their findings then revised their work based on the feedback given to them before the final grade was assigned to their projects.

**Acknowledgements** I wish to express my sincere appreciation to my major professor Dr. Tandra Tyler-Wood for sponsoring my studies and providing good academic advice and supports during my study.

I would also like to acknowledge Dr. Michael Spector who provided me with great resources that I used in this paper. Dr. Spector provided a lot of re-assurance when coming up with the paper and encouraged me to keep on working on it even when I had various concerns. Without Dr. Spector’s guidance and re-assurance, this paper would have not been as useful as it is.

## References

- Abdullah, M., Hussin, S., & Shakir, M. (2018). The effect of peers and teachers E-feedback on writing anxiety through CMC applications. *International Journal of Emerging Technologies*, 13(11), 196–207.
- Adel, A. (2017). Remember that your reader cannot read your mind: Problem/solution-oriented meta-discourse in teacher feedback on student writing. *English for Specific Purposes*, 45, 54–68.
- Anderson, C. R., & Kulhavy, W. R. (1972). Learning concepts from definitions. *American Educational Research Journal*, 9(3), 385–390. <https://doi-org.libproxy.library.unt.edu/10.2307/1161754>.
- Arnold, E. K., & Pistilli, D. M. (2012). *Course signals at Purdue: Using learning analytics to increase student success*. ACM International Conference Proceeding Series. <https://doi.org/10.1145/2330601.2330666>.
- Bailey, R. (2010). Is the feedback in higher education assessment worth the paper it is written on? *Teacher reflections on their practices*, 15(2), 187–198. Retrieved from: <https://doi.org/10.1080/13562511003620019>.

- Bergh, L., Ros, A., & Beijsaard, D. (2014). Improving teacher feedback during active learning: Effects of a professional development program. *American Educational Research Journal*, 51(4), 772–809.
- Carless, D. (2006). Differing perceptions in the feedback process. *Studies in Higher Education*, 31(2), 219–233.
- Carless, D. (2002). The Mini-viva as a tool to enhance assessment for learning. *Assessment and Evaluation in Higher Education*, 27(4). <https://doi.org/10.1080/0260293022000001364>.
- Chanock, K. (2002). Comments on essays: Do students understand what tutors write? *Teaching in Higher Education*, 5(1), 95–105. <https://doi.org/10.1080/135625100114984>.
- Coll, C., Rochera, M., Gispert, I., & Barriga, F. (2013). Distribution of feedback among teacher and students in online collaborative learning in small group. *Digital Education Review*, 23(1), 27–45.
- Cookson, C. (2017). Voices from the east and west: Congruence on the primary purpose of tutor feedback in higher education. *Assessment & Evaluation in Higher Education*, 42(7), 1168–1179.
- Cox, S., Black, J., Heney, J., & Keith, M. (2015). Promoting teacher presence: Strategies for effective and efficient feedback to student writing online. *Teaching English in the Two-Year College*, 42(4), 376–391.
- Duijnhouwer, H., Prins, J., & Stokking, M. (2012). Feedback providing improvement strategies and reflection on feedback use: Effects on students writing motivation, process and performance. *Learning and Instruction*, 22, 171–184.
- Evans, C. (2013). Making sense of assessment feedback in higher education. *American Educational Research Association*, 83(1), 70–120.
- Gaytan, J., & McEwen, B. (2007). Effective online instructional and assessment strategies. *The American Journal of Distance Education*, 21(3), 117–132.
- Gibbs, G., & Simpson, C. (2004). Conditions under which assessment supports students learning. *Learning and Teaching in Higher Education*, 1, 3–31.
- Gigante, J., Dell, M., & Sharkey, A. (2011). Getting beyond “Good Job”: How to give effective feedback. *Pediatrics Perspective*, 127(2). <https://doi.org/10.1542/peds.2010-3351>.
- Hast, M., & Healy, C. (2016). Higher education marking in the electronic age: Quantitative and qualitative student insight. *Procedia-Social and Behavioral Sciences*, 228, 11–15.
- Hummel, H. (2006). Feedback model to support designers of blended- learning courses. *International Review of Research in Open and Distance Learning*, 7(3), 1–16.
- Johnson, W., Steelmarck, M., Barthel, A. (2018). Format of instructor feedback on student writing assignments affects feedback quality and student performance. Retrieved from <https://libproxy.library.unt.edu:2147/10.1177%2F0098628318816131>.
- Hunt, E., & Pelligrino, W. (2002). Issues, examples and challenges in formative assessment. *New Directions for Teaching and Learning*, 89, 73–85.
- Kuo, Y., Walker, A., Schroder, K., & Belland, B. (2014). Interaction, Internet self-efficacy, and self-regulated learning as predictors of student satisfaction in online education courses. *The Internet and Higher Education*, 20, 35–50. <https://doi.org/10.1016/j.iheduc.2013.10.001>.
- Langer, P. (2011). The use of feedback in Education: A complex instructional strategy. *Psychological Reports*, 109(3), 775–784. <https://doi.org/10.2466/11.PR0.109.6.775-784>.
- Lenihan, E. (2016). Developing a culture of feedback through microteaching. *The International Schools Journal*, 35(2).
- Mallonee, B., & Breihan, J. (1985). Responding to student’s drafts: Interdisciplinary consensus. *National Council of Teachers*, 36(2), 213–231 <https://doi.org/10.2307/357443>.
- Mccarthy, J. (2017). Enhancing feedback in higher education: Students attitudes towards online and in-class formative assessment feedback. *Active Learning in Higher Education*, 18(2), 127–141.
- Matthews, K., He, L., & Patterson, L. (2012). Implementation of an automated grading system with an adaptive learning component to affect student feedback and response time. *Journal of Information Systems Education*, 23(1).

- MacWilliam, T., & Malan, D. (2013). *Streamlining grading toward better feedback*. Proceedings of the 18th ACM conference on innovation and technology in computer science education, 147–152. Retrieved from: <https://doi.org/10.1145/2462476.2462506>.
- Nagel, L., & Kotze, T. (2010). Supersizing e-learning: What a CoI survey reveals about teaching presence in a large online class. *Internet and Higher Education*, 13, 45–51. <https://doi.org/10.1016/j.iheduc.2009.12.001>.
- Narciss, S. (2008). Feedback strategies for interactive learning tasks. In M. J. Spector, D. M. Merrill, G. J., van Merriënboer, & M. Driscoll (Eds.), *Handbook of research on educational communications and technology* (pp. 125–140). New York: Routledge.
- Spector, J. M., Merrill, M. D., van Merriënboer, J. J. G., & Driscoll, M. (Eds.). (2008). *Handbook of research on educational communications and technology* (3rd ed.). New York, NY: Routledge.
- Thomas, R., West, R., & Borup, J. (2017). An analysis of instructor social presence in online and asynchronous video feedback comments. *The Internet and Higher Education*, 33. Retrieved from <https://doi.org/10.1016/j.iheduc.2017.01.003>.
- Wilkinson, S., Couldry, R., Philipps, H., & Buck, B. (2013). *Preceptor development: Providing effective feedback*. Retrieved from <https://doi.org/10.1310%2Fhpj4801-26>.
- Wolsey, T. (2008). Efficacy of instructor feedback on written work in an online program. *International Journal on E-Learning*, 7(2).

**Ndolo Sharon Ndinda** Highly skilled and result oriented student from East Africa, Kenya with solid academic preparation, pursuing my Doctoral Degree in Learning Technologies at the University of North Texas in United States of America. My main area of study is Learning Technologies and a minor in Special Education. My research interests are in online learning in higher education, with a focus on assessments in online learning environments, interactions and student personalities in the learning environments. My overall goal is to gain a better understanding on the incorporation of technology- based systems in online learning that improve learning. I am currently a Teacher Assistant with the Department of Learning Technologies at the University of North Texas, Denton TX, USA. I utilize my skills set in providing quality feedback to students. I strive to understand students reasoning to better comprehend on unclear answers. My aim as a TA, is to help students understand what was required of them, why they did not accomplish it and how they would have accomplished it. I also have one year experience as a Qualified Mental Health Practitioner (QMHP) with adults with mental illness. I have also worked as a Behavior Therapist with children diagnosed with Autism.