

## REFLECTING ON PEDAGOGY: LESSONS LEARNED FROM THE PANDEMIC

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### ABSTRACT

The COVID-19 pandemic has had a lasting impact on pedagogical approaches utilized in education. Pedagogical approaches typically refer to the methods, practices and strategies of an instructor used to engage students in course activities to promote student learning. The purpose of this paper is to reflect on the challenges in pedagogical approaches experienced by college and university faculty and the lessons learned while emergency remote teaching during the COVID-19 pandemic. The most overarching challenges faced by instructors included unpreparedness, difficulty in course design, delivery, and assessments, and maintaining student interaction and engagement within the course. Instructors in academia were not prepared to redesign non-traditional virtual courses that utilized the best pedagogical practices for online teaching. Faculty were unaware of the most effective pedagogical practices and technology tools for teaching online. Lack of student interaction and engagement negatively impacted teaching and students' performance. Findings indicate the continuous need for research and professional development and training for instructors on effective pedagogical approaches and educational technologies that allow students to interact with the content, activities, instructors, and other students in online learning spaces.

**Keywords:** Pedagogical approaches, COVID-19, faculty, instructor, student, online learning

### INTRODUCTION

The COVID-19 pandemic was a challenging time for both faculty and students as colleges and universities quickly transitioned from a face-to-face traditional environment to an online learning environment. Almost all faculty/instructors had to modify their pedagogy in Spring 2020, which is the quickest transition in education encountered. Pedagogical approaches are understood as teaching practices that encourage the process, and student learning results. Pedagogy consists of a wide range of components in curriculum, assessments, activities, instructions, and strategies that instructors use to orchestrate student learning. When designing or implementing pedagogical approaches, there are numerous factors that instructors need to be cognizant of regarding their learners. Some factors include student's educational goals and objectives, age range, maturity levels, topics and concepts, level of understanding, comprehensive skills and abilities, communal abilities, personal attributes, and other needs of the students. Pedagogical approaches guide learners in their acquisition of knowledge and understanding as learners interact and engage with the content and activities. The instructors' pedagogical approaches must be embedded with enriching interactive teaching strategies, engaging activities, and appropriate assessments that is relevant to students to achieve the desired goals and specific learning outcomes (Armour-Thomas, E., & Gordon, E.W., 2013; 2013; Gleason, B., 2020; Kapur, 2020; Kerzic, D., Alex, J.K., Alvarado, R.P., Bezerra DdS., Cheraghi M., Dobrowolska B., et al., 2021; Nambiar, 2020; Sahrah, A., & Dewi, R., 2021). Close relations, high levels of engagement, and active learning techniques are valued by both faculty and students especially at undergraduate institutions (Kerzic et al, 2021; Nambiar, 2020; Sahrah, 2021).

Faculty had varying levels of experience teaching online and understanding and applying suitable pedagogical practices for online learning particular during the time of emergency remote teaching (ERT) (Colclasure, B.C., Marlier, A.M., Durham, M.F., Brooks, T.D., & Kerr, M., 2021; Chierichetti, M., & Backer, P. 2021; Johnson, N., Veletsianos, G.; & Seaman, J., 2020; Hollander, A., Vavasseur, C.B. & Robicheaux, H., 2020). The rapid transition to online learning meant that instructors had to quickly revamp their pedagogical approaches for traditional face-to-face learning environments to suit the needs of learners in an online learning environment. However, currently, this forced transition has provided an opportunity for faculty to reflect on pedagogical approaches used during this abrupt transition as well as ponder on how this will affect education going forward. The purpose of this paper is to reflect on the challenges in pedagogical approaches experienced by college and university faculty and the lessons learned while emergency remote teaching during the COVID-19 pandemic.

### UNPREPAREDNESS

Pedagogical approaches typically refer to the methods, practices and strategies of an instructor that allow students to gain a deeper understanding of course content, ability to make content relevant to students and applicable to real life situations. Instructional design and learning design processes determines how instructors approach teaching and learning using strategies to meet specific learning outcomes (Olufemi, 2008; Kapur, 2020; Muir, T., Wang, I., Trimble, A.; Mainsbridge, C., & Douglas, T., 2022; Rapanta et al, 2020). The increase in virtual learning has compelled a shift in pedagogical approaches; however, an understanding of effective online approaches must be acquired by course instructors. Historically, without appropriate professional development of best pedagogical

approaches for the online environment, instructors are apt to utilize existing traditional course design and pedagogical practices that are not as effective in online learning spaces (Muir, 2022; Patra, S.K., Sundaray, B.K., & Mahapatra, D.M., 2021).

The research study conducted by Surendran, S., Hopkins, S., Aji, A., Abubakar, S., Clayton, T., et al, 2021) investigated teaching instructors in bioscience perspectives of teaching during the pandemic lockdown. Instructors have been at the forefront of adapting and transitioning from traditional face-to face learning environments to non-traditional online learning environments. The emergency remote teaching (ERT) resulted in abrupt changes into the new learning environment can be described as rushed with little prior training (Conclasure, et. al, 2021; Chierritti et al, 2021; Damsa, C., Langford, M., Uehara, & D., Scherer, R., 2021; Egarter, S., Mutschler A., & Brass, K., 2021; Hollander, 2021; Pressley, 2021; Rapanta, C., Botturi, L., Goodyear, P., Guardia, L., & Koole, M., 2020; Surendran et al, 2021). Instructors faced the pressure of increased workload and pile ups, meeting fast approaching deadlines, in addition to the lack of appropriate online teaching training (Chierritti et al, 2021). Hollander et al (2020) research indicated that instructors felt incompetent and perturbed as they transitioned their courses due to apparent lack of preparation to teach online and utilize educational technology.

Surendran et al (2021) research methodology adopted a descriptive multiple case study based on the experience of the academic in their institution. One case study in Georgia revealed that although e-learning systems existed, they were not included in the curriculum. Research has indicated that although online learning systems were available at various institutions, many were not utilized optimally prior to the COVID-19 pandemic (Chierritti et al, 2021; Conclasure et. al, 2021; Damsa, 2021; Hollander, 2021; Patra, 2021; Pressley, 2021; Surendran et. al, 2021).

Sahu (2020) research study investigating universities' closure during COVID-19 indicated that instructors faced the perplexing task of modifying and applying traditional assessments from courses designed for face-to-face learning to the online teaching environment without proper instructions and training. Many instructors were unprepared and unfamiliar with procedures for organizing and managing outstanding assignments, projects, and other continuous assessments. Instructors had to quickly modify assessments to make them appropriate for use in the online learning mode.

The unpreparedness of instructors caused challenges for learners globally. Educators' purpose is to serve our students through teaching. Educators are to help students learn and obtain their academic goals by imparting knowledge to them and creating learning environments and situations in which students can and will learn effectively. Students enrolled in college during this devastating time of COVID-19 faced higher risks of low performance in comparison to pre-COVID-19 times. During this pandemic, even the well-prepared-for-college students struggle to maintain their level of motivation and keep up their GPAs (Grade Point Average). For already underprepared students in traditional learning environments, it is exceedingly critically to teach using the most current and best pedagogical practices while also attending to individual needs and providing individualized feedback in a timely manner. Quality of teaching significantly impacted learners and approaches to teaching, especially for students with special needs and those with learning disabilities. Online teaching is different from the traditional teaching environment and requires competence and proficiency in the use of technology (Chierrati et al, 2021).

### **COURSE DESIGN AND DELIVERY**

The teaching methods and practices have been severely impacted on how content and course information was delivered to students during the pandemic. Sahrah et al (2021) research indicated that it is much easier to deliver some teaching material and content in a face-to-face environment versus online. Visual cues that gave instructors insight on students' comprehension were eliminated in the online learning environment. Faculty contact time with students also diminished. The student-teacher interaction was limited during the COVID-19 pandemic when all courses were taught online (Kerzic et al, 2021; Nambiar, 2020; Sahrah, 2021).

Research suggest that instructors must utilize a variety of methods of online delivery and different platforms, design approaches (synchronous, asynchronous, online, offline) and e-learning systems to better present varying course content and materials to meet learners needs and specific learning outcomes (Rapanta et al, 2020; Surendran et. al, 2021). Course content and activities should be explained, communicated clearly and accurately to the students, extend students' previous knowledge, possess an adequate level of difficulty, and be purposeful and relatable to both students and course learning outcomes and expectations. Instructors must be cognizant and considerate of learners' readiness to engage in the virtual learning environment (Rapanta, et al, 2020). Online content may offer a better experience for the students since recorded sessions can be viewed multiple times if needed to increase understanding and capture information that may have been missed in live lecture classes

(Egarter et al, 2021; Nambiar, 2020; Daniel, 2020). However, online course design and delivery of content in science and laboratory-based courses have significant limitations.

Some of the challenges in pedagogical approaches in the new online environment included evaluations and assessments, establishing a personal connection with the learners, and providing support for struggling students, maintaining student engagement, and “Zoom drain” (Chierrati 2021). Public school teachers faced similar challenges as they experienced heavy distress and burnout as they quickly transitioned to 100% virtual environments. Teachers were required to learn new instruction pedagogy and platforms (Pressley, 2021). The most significant challenge to teaching during the pandemic was the speed at which the transition from face-to-face to the online learning environment occurred. (Conclasure, 2021; Johnson, N., Veletsianos, G., & Seaman, J., 2020). Despite the challenges faced by the immediately transition to the online learning environment and the learning curve for many instructors, instructors were able to acquire new teaching skills and incorporate modern technologies, and eventually were able to reflect on important relevant content that really mattered (Conclasure, 2021; Johnson, 2022). Many instructors continued to teach solely online and/or blended courses, even when campuses returned to face-to-face teaching (Muer, 2022).

Yao, L., Li, K., He, J., & Liu, L. (2021) study implemented a reformed pedagogy approach which combined interactive online resources, live online discussion courses, and an after-class WeChat study group during the pandemic. The impact of these changes in pedagogy were derived from the perspective of the students. The effectiveness of the combined pedagogy approach was evaluated by comparing it with traditional teaching approaches. The reformed teaching approach also required that student participants watch online videos and view course material prior to class attendance. The instructor posted course content and requirements through WeChat was available for questions and discussions during the study group session. Findings indicated that the reformed approach improved academic performance, promoted independent learning and more understanding of course content, provided desired timely feedback to students, and increased the interactions between students and instructors. The reformed pedagogical approach can be found useful in future online learning courses and blended learning activities.

Research indication that instructors shared the same views as students in their perception regarding instructional materials before the COVID-19 pandemic. Research shows that learners were more successful with the instructional materials in traditional learning environments. Before the COVID-19 pandemic, physical supplementary instructional materials were easier for learners to comprehend. Instructors explained learning materials and concepts more clearly in face-to-face classroom settings, especially with education tools such as LCD media and whiteboards. Students also felt they could better grasp and understand content and course material taught by instructors in face-to-face learning environments in comparison to online learning application media. Instructors also indicated that it was less difficult to teach the instructional materials to learners before the COVID-19 pandemic versus during the COVID-19 pandemic where all teaching and learning were online (Sahrah, 2021; Kerzic, 2021). Modified teaching materials were necessary for use in the new online learning platforms.

For the first time, instructors were strongly encouraged and even mandated to video record their teachings and lectures and have them conveniently posted and available for all students. Students that faced transition or were quarantined were able to stay abreast of lectures and notes. All students benefit from access to lectures and course information at any given time in addition to the live teaching sessions where questions can be asked, and clarification made. Pedagogical teaching methods that include video recordings help students retrieve information that otherwise could easily be disrupted or missed by everyday distractions. The ability to play, stop, pause, replay, forward, and resume later are precious accommodations for student learning and success. The use of video-recorded lectures and activities have aided in students' understanding and comprehension of instructional material and content. Video-recordings are valuable and should be utilized permanently in educational environments (Koenig, 2021).

Many research studies would argue that assessment could easily be the most challenging part of transitioning to the online environment from the traditional face-to-face environment. Instructors were met with a challenging task when required to transition assessments to online formats in courses design which used face-to-face oral or written exams (Rapanta, 2020; Sahu, 2020; Sarkar S., Mishra P., & Nayak A., 2021). Instructors had to reformat assessment types to adapt to the new online learning mode. Grading and assessments strategies were particularly challenging (Armour-Thomas et al., 2013; Kapur, 2020; Kerzic et al, 2021; Nambiar, 2020; Sahrah, 2021). It was also difficult for instructors to monitor and ensure that students were not cheating during online tests. Instructors may include additional or require alternative self-regulating activities and assessments such as self-reflections or portfolios as demonstrations of skill acquisition and abilities and as well as assess students' participation (Rapanta, 2020). Ogrutan, P.L. & Aciu, L.E. (2020) research on academics and ethics indicated that the students believed

anti-plagiarism software utilized by instructors during the pandemic increased the difficulty of homework assignments.

Another challenge in conducting assessments online comes in the form of lab tests, practicums, and performance tests which are difficult and many times impossible to conduct online (Rapanta, 2020; Sahu, 2020; Sarkar S., Mishra P., & Nayak A., 2021). Some materials such as lab-based, hands-on activities and internships are more difficult to teach online without simulated equipment and technologies. Modified teaching materials were necessary for use in the new online learning platforms. Transitioning lab-based face-to-face courses in science to online learning spaces was a demanding task without complementary technologies and simulation equipment. It was difficult to organize hands-on lab activities in the virtual learning environment. Some instructors improvised by video recording demonstrations of those hands-on lab activities for students. Due to the pandemic, many faculty have planned to make changes in delivering instructional material and their teaching approaches including lab-based activities after reflecting on lessons they learned in Spring 2020.

Chierichetti et al (2021) study also emphasized the difficulty faced by instructors in teaching with new tests formats, keeping student engaged, and dealing with teaching practices to prevent cheating among students. Pedagogical approaches in online learning environments typically include the use of discussion boards, audio and video submissions, text-based assessments, and live assessments to convey content and material to students, encourage critical thinking and problem solving, promote deeper learning experiences, engage students in learning content and facilitate interactions with instructor and other students. If course activities are not appropriately and effectively designed and implemented, pedagogical efforts can fail. Teacher-center lecture model practices persisted over student-centered teaching methods during the COVID-19 pandemic although student-centered are more effective for learning especially in online learning environments (Hollander, A., Vavasseur, C.B. & Robicheaux, H., 2020; Chierichetti et al, 2021). Faculty faced many challenges in organizing and administering teaching methods and practices in hands-on laboratory in a fully virtual teaching environment. In response to these challenges faced by instructors, strategies that were adopted to the remote environment included altering or removing assignments and test, decreasing the class pace, and reducing expectations about the quantity and quality of work completed by students. Overall, faculty expressed that their ability to transition to remote learning was an optimistic experience at the end of the Spring 2020 semester.

Pressley, 2021 research findings indicated that K-12 teachers also endured elevated levels of teacher burnout stress during the pandemic as they assumed the challenges and new demands of teaching using new virtual instruction pedagogy and platforms and the position of first resource for parents using digital technology. Participants in this study experienced high levels of teacher burnout. There were no differences based on ethnicity, location, teaching experience, and instruction mode. Teachers needed instructional, technological, and emotional support during this difficult pandemic time.

Colclasure et al (2021) research also indicated that the abrupt transition to the virtual learning environment during the COVID-19 pandemic was challenging as new pedagogical approaches and technologies were implemented. Researchers found the greatest challenge that faculty faced while teaching through the pandemic were related to changes in pedagogy, work-life balance, interactions in face-to-face environments, and mental and physical health. Regardless of faculty being unfamiliar with the pedagogical approaches and technologies often used in virtual teaching spaces, the urgency of emergency remote teaching required unprepared faculty to instantly design online courses by carefully selecting the most appropriate technologies, modalities, and technology tools to facilitate online learning in the new online learning environment. Although faculty successfully transitioned into the online environment, the transition was considered minimally successful.

Kumar, S., Martin, F., Budhrani, K., & Ritzhaupt, A. (2019) study investigated award-winning online teaching practices. The findings indicated that expert instructors were characterized as understanding what worked in the online format, having confidence in online teaching, not being limited by technology, and knowing how to adapt materials for an online format. Egarter et al (2021) research suggest reflecting on the motivations for formerly used teaching methods and practices in traditional face-to-face to impart knowledge and understanding, skills, and competencies to make decision regarding pedagogical approaches, design and modifications in virtual teaching courses and effective blended learning alternatives. Daniel (2020) suggests taking advantage of asynchronous learning which works best in digital formats and placing focus on reassuring students over trying to learn new pedagogical approaches and technology.

## **STUDENT INTERACTION AND ENGAGEMENT**

Student interaction and engagement with instructors and other students was hindered in the new online learning environment. Course instructors in academia quickly changed their teaching approach as they recognized the need

to keep students engaged. However, many instructors continued with all-lecture class sessions which severely limited student engagement with instructors and other students. Instructors found it difficult to incorporate active learning activities into their teachings. Faculty were also clearly dissatisfied with the lack of close interaction between faculty and learners which impacted their teaching performance and pedagogical practices (Armour-Thomas et al., 2013; Kapur, 2020; Kerzic et al, 2021; Nambiar, 2020; Sahrah, A., & Dewi, R., 2021). Instructors must keep in mind that some students will simply perform better in the traditional face-to-face environments where proximity to the instructor keeps students on tasks and immediate feedback of students learning is readily available (Rapanta, 2020; Sahrah, 2021; Sahu, 2020).

Before the COVID-19 pandemic, instructors could directly interact with learners during class lectures. Learners were able to grasp the understanding of instructional material easier because the instructional material was real, not virtual (Dang, M. Y., & Zhang, Y. G., 2021; Sahrah, 2021). In Sahrah (2021) study, according to the instructors, overall, they admitted that there has been a decrease in Academic Service Quality (ASQ) during the COVID-19 pandemic compared to before the COVID-19 pandemic, but instructors considered that in terms of tangible and empathic aspects, it was the same. Although technology and online teaching provided remedies to some of the issues from the emergency response teaching, it cannot substitute for the positive impact of face-to-face interactions between instructors and student learners (Sahrah, 2021; Kerzic, 2021; Nambiar, 2020).

Egarter et al (2021) study examined the impact of COVID-19 on digital teaching using new innovative teaching methods of digitalization. Even though transferring to the digital environment was a success after initial challenges were resolved, communication still lacked in comparison to the direct ways of communicating in traditional face-to-face environments which had an impact on pedagogical practices.

Though teaching within the virtual online environment was not fully achieved, the new innovative pedagogical practice using digital teaching has made immense progress during the COVID-19 pandemic. Damsa et al, (2021) findings show that instructors utilized new formats in their teachings; however, during the first few months of the pandemic, pre-recorded convenient lectures were often used. Traditional teaching methods and practices typically used in face-to-face learning environments were not the most effective methods for student engagement in online spaces. It is suggested that instructors reflect on challenges experienced in seeking digital support to facilitate online learning and the way the technologies can be utilized in pedagogical learning environments.

In Kerzic, et.al. (2021) research study conducted on academic student satisfaction and perceived performance in the e-learning environment, the results indicated that the influence of computer skills is less influential for online learning quality in comparison to other factors like system quality, which is the most influential factor. Higher education institutions were unprepared to develop effective online learning systems at the forced rapid pace. Course instructors play a vital role in the success of online learning based on two specific measures: instructor response timelines and instructor attitude towards online learning. The better the quality of the e-learning system, the more pleased learners were with their academic performances. Even though students at higher education institutions were mostly satisfied, they missed the lectures and personal interactions with their instructors and declared that the online learning environment could not replace traditional learning experiences (Kerzic et al, 2021; Nambiar, 2020; Sahrah, 2021). Research studies suggested that pedagogical approaches include methods which utilize tools that allow students to interact with the content, activities, instructors, and fellow students in online learning spaces (Chierichetti et al, 2021; Gleason, 2021; Kerzic, 2021; Muir, 2022; Nambiar, 2020; Sahrah, 2021). Gleason (2021) study suggests that the interaction between instructor and student is related to success performance of students and is critically important in facilitating long-term academic success. Pedagogical approaches that include meaningful, purposeful course activities that encourage learner-content interaction enhance the development of critical thinking and problem-solving skills.

Research studies indicated the need for pedagogical approaches that engaged students through various online course design activities. The activities should demonstrate or strengthen understanding and skills related to the content (Chierichetti et al, 2021; Gleason, 2021; Muir, 2022). Muir (2022) study investigated methods and strategies that instructors utilized in interactive online pedagogy to promote student engagement. Course design included weekly learning content and instructional materials that usually consisted of a PowerPoint presentation with audio narration or lecture, mandatory readings, and interactive activities. In addition, instructors designed weekly videos that provided an overview of expectations and topics. Instructors should utilize pedagogical approaches that include the use of multimedia which foster engagement between students and content. Multimedia such as videos can provide students in virtual learning environments with opportunities to view demonstrations of materials or to experience participation in online learning game-playing. Actively engaging students in content may be obtained by pedagogical approaches, including forum for discussions like discussion boards into the course design and delivery. Findings indicated that online interaction was essential for student engagement which led to

increased student satisfaction and academic performance. Instructors aware of how to make the content relevant and interactive in their pedagogical approaches can engage learners and content and maintain their engagement.

## CONCLUSION

The COVID-19 pandemic posed many challenges for faculty/instructors as they quickly transitioned their pedagogy approaches from face-to-face learning to the virtual online learning environment. Some of the pandemic's overarching challenges in pedagogical approaches in the new online environment included unpreparedness of instructions, course design, delivery, and assessments, and maintaining student interaction and engagement. The impact of teaching during the pandemic resulted in faculty experiencing less effectiveness in their teaching performance, loss of instructor-student interaction, and less satisfaction in their careers. Students were also impacted by decreases in motivation, engagement in course content, interaction with instructors and academic performance. The emergency remote teaching did not allow teaching faculty/instructors appropriate preparation time to reflect on current pedagogical approaches and research best pedagogical approaches for online teaching which led to unpreparedness among instructors. Faculty struggled in the abrupt transition to online learning. It was a daunting task for instructors to quickly adapt their pedagogical approaches to meet the needs of learners in the online learning environment. However, academic instructors could learn and implement new teaching methods and strategies and incorporate modern technologies into online learning environments.

## RECOMMENDATIONS

Faculty, now more than ever, should seek training and professional development opportunities to be updated on effective pedagogical approaches with or without online technologies. Instructors should continue to research and utilize educational tools that allow students to interact with the content, activities, instructors, and other students and adapt content and materials for online learning spaces. It is recommended that faculty reflect on the challenges experienced during emergency remote teaching, the pedagogical approaches that were effective, and previously used teaching methods and practices to make decision regarding pedagogical approaches, design and modifications in virtual learning courses and effective blended learning alternatives. More research is needed on the best pedagogical approaches and methods to meet the diverse learner needs and specific learning outcomes in online learning environments and different platforms (synchronous, asynchronous, online, offline) and e-learning systems.

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