

Theory of Adaptation of Educators Teaching Technology-Based Courses

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Abstract

The need for resilience among educators has become a critical demand during the COVID-19 pandemic when in-person classes were restricted and were converted into distance learning and eventually shifted to blended learning as governments opened borders and health safety protocols eased down. Hence, this study focuses on understanding how educators of technology-based courses in public higher education across academic landscapes have navigated for continuous instructional delivery. This study utilizes the Straussian approach of Grounded Theory. This design uses a three-stage coding methodology: open, axial, and selective coding. The study generates the Theory of Educators Teaching Technology-Based Courses across academic landscapes, which postulates that educators in technology-based courses undergo phases of metamorphosis that include visioning, learning, rationalizing and doing, and modernizing, ultimately allowing them to become resilient and adaptive to the shifting landscapes of the academe caused by the COVID-19 pandemic.

Keywords: adaptation, higher education, technology-based, grounded theory

1.0 Introduction

Quality instruction always demands resilience in instructional delivery. Resilience calls for adaptation, though, and in the situation of the academic community, where more than a billion learners were affected by the closing of schools and public spaces around the world (Cluver et al., 2020; Roos et al., 2021). This has prompted many countries to adopt distance learning through online and offline modalities as part of the new normal. Hence, it is clear that practical-knowledge gap exists. This fact shows disparity between the ideal knowledge concerning quality instruction and the actual practice affected by the pandemic.

Consequently, the massive duties like finding ways to navigate online technologies like preparing, reproducing, collecting, and checking modules are on top of other concerns by educators to continue delivering instruction (Andales et al.,

2022). The absence of proper training for educators in the use of technology required for learning dissemination, limited internet access, and online learning, according to Llego (2020), may not always apply to hands-on sessions, particularly for technology-based lessons like those that call for actual and experimental learning experiences. Fortunately, educators could navigate teaching and learning successfully from the start of the COVID-19 pandemic through creative ways (Ramos & Baldespiñosa, 2021).

However, after almost three years of using distance learning, there is shifting back to in-person classes as the government started implementing fewer restrictions. Hence, Reyes-Velasquez and Pacheco-Sepulveda (2022) pointed this out as something that cannot be fathomed that it would take those years before going back to in-person courses. Notably, part of shifting effects

in education is the blending of distance and in-person classes, a fact supported by Simonova, et al. (2023). Educators adopt this learning mode: limited face-to-face classes and distance learning. This implies more responsibilities to the educators for the reason that each learning modality demands distinct strategies and preparations for successful instructional delivery. The COVID-19 pandemic created a wave that changed the educational community and reshaped the landscape of instructional delivery, from in-person instruction to distance learning and blended learning. With this scenario in education, it is notable that the process of teaching and learning, especially those in technology-based disciplines, continued to exist because educators remained on top of the situation. Therefore, it is worth investigating how these technology-based educators have navigated learning from the dynamic nature of instruction caused by the wave and ebb of the COVID-19 pandemic.

In search of a theory for the phenomenon, only studies about the experiences and perspectives of educators who participated in remote learning during the pandemic existed. Example is the work of Secuya and Abadiano (2021), which established a theory on educators' experience with modular education as they move forward to face-to-face instruction. The study focused only on the educator's adjustments in modular education. Similarly, Nebrida et al. (2021) established a theory on the challenges of a school in teaching and learning during the COVID-19 pandemic. Moreover, Gecolea. C. and Gecolea. P. (2021) developed a theory on strengthening the parent's engagement in their children's studies during the pandemic. Ancho and Arrieta (2021) explored Filipino educators' professional development in the new normal. In addition, Soriano et al. (2022) explored the teacher's experience during the pandemic. Similarly, Mercado (2021) explored the students' experiences in learning physics in an online class.

These studies distinctly point to the different perspectives anchored on experiences of each role played by those involved in teaching and learning, such as the learners, educators, and parents. These studies are constrained within the boundaries of shifting changes from in-person to distance learning instructional delivery and not from in-person to distance learning to blended learning in the present context. In addition, these studies focus on something other than educators' experiences with technology-based courses. Hence, this investigation focused on explaining the phenomenon of how these technology-based educators, in particular, have navigated learning from the dynamic nature of instruction caused by the wave and ebb of the COVID-19 pandemic for quality outcomes.

2.0 Methodology

The study used the Straussian approach (1990) of Grounded Theory design. The use of grounded theory was based on the fact that little is known under the phenomenon being focused, which is about understanding how educators of technology-based courses in public higher education were able to navigate despite the dynamism of the academic landscape due to the COVID-19 pandemic. The Straussian approach of Grounded Theory uses a three-stage coding approach, including open coding, axial coding, and selective coding, all part of the reiterative pattern. The process does not come linear; instead, the investigators need to look back at these existing concepts from time to time until data saturation is reached. The Straussian technique is more structured, resulting in a coding system for analysis that is much stricter. Similarly, Strauss and Corbin (1990) also used the phrase "open coding." However, they emphasized conceptualizing and categorizing the data, which may be done in advance and may come partly from the data and partially from the researchers. Axial coding, which Strauss and Corbin created

as an addition to grounded theory, is a series of procedures that, after open coding, allow data to be reassembled in creative ways by creating linkages between categories. A coding paradigm involving conditions, context, action/interactional techniques, and outcomes are used to accomplish this (Strauss and Corbin (1990).

The research environment was generally in the island province of Cebu and particularly across campuses in its heavily populated state university. Moreover, this study's primary data source was the state university educators in technology-based courses. Purposive sampling design was used based on the formulated selection criteria. The selection criteria in this study required the participants to be an educator in a state-owned higher education institution, a teacher of technology-based courses, and a faculty member for more than three years.

The instrument used was a semi-structured interview guide for grounded theory design. Notably, the questions included in the guide did not constrain the researchers from providing relevant questions during the gathering in order to understand the phenomenon further. This means that the questions were re-stated and re-structured for purposes of clarification with the ultimate goal of capturing and understanding the focused phenomenon.

In addition, the study employed the evaluative criteria of Guba and Lincoln (1989). This means that the application of specific strategies existed across the area of credibility, transferability, dependability, and confirmability. As Foughty et al. (2023) pointed out, these provide a normative framework used to determine the merit or worth of the study. Thus, each criterion corresponded to specific strategies applied. In the case of credibility, triangulation was made to verify identified patterns. Likewise, member checking was also done wherein the final report and specific themes were shared for verification of the participants. Moreover, for the transferability criterion, the investigators

applied thick descriptions by paying attention to contextual detail while observing and interpreting the phenomenon. For the dependability criterion, the investigators tracked the precise method used for data collection, analysis, and interpretation, providing adequate contextual information about each piece. Lastly, for the confirmability criterion, the researchers provided an audit trail that detailed each step of data analysis and showed that the findings were colored by conscious or unconscious bias but only portraying accurately the responses of the participants.

The study used Kvale and Brinkmann (2015) criteria for ethical considerations. It means the study observed specific actions. Under the informed consent criterion, there was a provision of pertinent information about the study for a more intelligent decision by the participant. In addition, under the confidentiality criterion, anonymity is observed as part of respecting their identities. For the consequences criterion, the researchers made sure to maximize the benefits and minimize potential harm to the participants. Finally, for the role of the researchers' criterion, the researchers maintained moral integrity and remained committed to the phenomenon investigated.

3.0 Results and Discussion

The information acquired through interviews and observations is presented in this section. The study used theme analysis to understand the information gathered through coding after reaching data saturation. The initial phase of the grounded theory approach developed by Strauss and Corbin (1990) is called open coding. Next are selective coding and axial coding.

Open Coding

After transcribing the data from the interviews of each of the eight participants, Strauss and Corbin's three-step coding technique was used to analyze the data. Strauss and Corbin (1990)

differentiate "open, axial, and selective coding" as the three types of coding processes ultimately yield a grounded theory (2015). They added that this triadic coding process strengthens the grounded Theory when implemented.

Table 1 shows the codes identified for open coding. Table 1 presents the initial analysis using open coding. During this phase, the analysis of the interview transcripts is word-for-word, line-by-line, and phrase-by-phrase. In open coding, the researchers isolate various concepts and themes to categorize the data. To connect annotations and "concepts," the researchers used units of meaning categorizing statements (single words, short word sequences) as advised by Flick (2009). Open coding seeks to start labeling all data without limitations

and to assign conceptual and representational codes to any highlighted incidence in the data (Douglas, 2019). The researchers can use emergent axial codes during the open coding stage.

Axially encoded data are coded at the second level. Axial coding further clarifies, aligns, and organizes the concepts instead of open coding, which concentrates on identifying emerging ideas. In order to create distinct topic groups before selective coding, additional deductions were made with the initially sorted, improved, and ordered data at this stage. The axial coding, in accordance with Strauss and Corbin (1998), detects connections between open codes to create core codes. The most tightly related and well-supported open codes are combined to create major codes.

Table 1. Open Coding

applying collaborative learning	viewing teaching as a lifetime commitment; passion	adapting to the changes	learning to be satisfied with earnings
investing in gadgets and internet connection	becoming a realist	implementing outcomes-based learning	sympathizing
believing that students are responsible for the learning outcomes	applying theories learned in the actual setting	meeting teaching challenges; internet connection	considering students and family as motivations
understanding changes	believing that technology courses are all skill-based	integrating technology	advocating students

Table 2. Axial Coding

visioning	<ul style="list-style-type: none"> ▪ learning to be satisfied with earnings ▪ considering students and family as motivations ▪ understanding changes ▪ viewing teaching as a lifetime commitment; passion ▪ sympathizing
learning	<ul style="list-style-type: none"> ▪ adapting to the changes ▪ meeting teaching challenges (e.g. internet connection) ▪ investing in gadgets and internet connection
rationalizing & doing	<ul style="list-style-type: none"> ▪ applying theories learned in the actual setting ▪ becoming a realist ▪ believing that technology courses are all skill-based ▪ believing that students are responsible for the learning outcomes
modernizing	<ul style="list-style-type: none"> ▪ applying collaborative learning ▪ implementing outcomes-based learning ▪ advocating students ▪ integrating technology

The essential idea in selective coding according to Strauss and Corbin (1990) from all the draped concepts, the focus is to develop a single storyline around it. In Figure 1, a central or focal concept emerged from the sifted or funneled concepts in the axial coding stage. This central concept brings

the Theory. In addition, it enables the researchers to select and combine axial coding as ordered data categories into logical, intelligible words. In "Selected Coding," the axial coding is continued at a higher level of abstraction by forming the story of the case or explaining it (Flick, 2009).

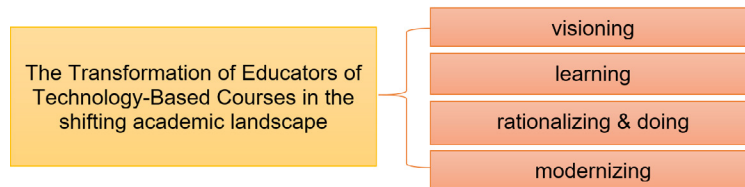


Figure 1. Selective Coding

The transformation of technology educators into the new normal emerged as the focal core code following a thorough and careful analysis of the data. This core category produced four themes: visioning, learning, rationalizing and doing, and modernizing.

Theme 1: Visioning

This theme entails how participants view teaching as a lifetime commitment and a passion. Hence, these educators are compassionate and understanding of their students’ needs.

My career as a teacher is my lifelong commitment to my students, not just about the subject matter, grade level, development of curriculum school regulations, and technological developments, but also about a genuine desire to acquire new knowledge and skills that will advance your effectiveness as a student and a person. – Participant 1

According to Beane (1990), people who care about others try to rise above their sentiments to understand them, show them that they care, and improve their well-being. A person must be entrusted with the care, welfare, or upkeep of

something or someone to be a caregiver and be involved in tasks that are beneficial to the person being cared for, which requires exerting a lot of effort and giving the person being cared for their complete attention (Noddings, 1984). It has been determined that the student's opinion of their teacher's value and support for them is a crucial element of the teacher-student connection (Muller, 2007; Noddings, 1984, 1992). Research shows that caring is crucial to creating and maintaining successful teacher-student relationships. Caring enables educators to recognize and address the needs and emotions of their students and offer them safety, stability, and support (Mayseless, 2015; Noddings, 1984, 2006; Pianta, 1992, 1999; Wentzel, 1997). This form of caring is thought to be prevalent in several caring-intensive professions, such as the healthcare business, and familial duties like parenting, according to Mayseless (2015) and Pianta (1992). Moreover, for technology educators, their students and family are their sources of motivation. They take pleasure in teaching and assisting students in mastering lessons.

I love teaching; seeing students enjoy the class and learn something from the discussion motivates me. – Participant 3

Sinclair (2008) asserts that teacher motivation influences what draws individuals to the teaching sector, how long they stay in their initial teacher education courses and later in the teaching profession, and the degree of their engagement with their courses and the teaching profession. In addition, enhancing teacher motivation is crucial for improving classroom effectiveness (Carson & Chase, 2009). Additionally, due to the pandemic, many people lost their jobs. Thus, technological educators are simply thankful to still be working and earning money.

I cannot remember being thankful despite ECQ still having a monthly salary to support family needs. – Participant 2

Overall contentment with one's financial situation is correlated directly with one's financial well-being (Hayhoe et al., 2000; & Joo, 2008). Likewise, it has been demonstrated that poor financial health or the existence of financial strain hurts mental and physical health, lowers confidence and productivity at work, and increases tardiness, absenteeism, and lack of attention (Godfrey, 2006; & Zhang et al., 2022).

Furthermore, the study also revealed that technology educators in the visioning phase demonstrate understanding and compassion for the learning needs of their students.

The students faced many difficulties; however, we need to understand and adjust to the situations. – Participant 2

The responsibilities of educators include imparting knowledge to students and fostering an environment that will and can support learning. Educators coach and direct their pupils in addition to listening to them. In order to help their students set and achieve academic goals, they are dedicated to doing

so. Educators are courteous and patient with their students when they do not understand a concept. – Participant 5

More than just a good mindset, students with highly effective educators feel that their educators genuinely care about them (Collier, 2005). Moreover, caring educators constantly convey values to their students through eye contact, attentive listening, and acknowledging concepts, activities, and experiences that give each student a sense of individuality. They establish relationships of trust with their students, which influences education and disciplinary measures. This fosters a sense of community among learners, making them feel linked to their teacher and one another. In a supportive setting, students adopt and replicate the attitudes and behaviors of their professors with their classmates (Freeman, 2008).

Theme 2: Learning

This highlights how educators face the challenges of the pandemic such as poor internet connection in consonance with instructional delivery.

Not all students have the same resources to handle online learning, so it has become difficult for educators to teach online. Sometimes, the discussion gets so engaging that the student may abruptly remark that they cannot hear me speak due to internet connection problems. Also, I cannot evaluate the student's learning because I cannot determine whether they are paying attention to the discussion. – Participant 4

Beginning to teach is quite challenging. But through the years, with the utmost devotion and sacrifice, attending college and juggling time demands, I was able to accomplish my targets and become a better educator. – Participant 7

According to Derasin et al. (2021), a slow internet connection was one of the challenges during the implementation of online learning. Similarly, Reinald et al. (2016) noted that the difficulties of online learning are related to internet problems and a lack of technological knowledge. Additionally, Mohalik and Sahoo (2020) said that the disadvantages of online distance learning include educators' need for more expertise with the technology and their widespread use of digital devices. Similarly, Ali (2020) discussed several significant challenges centered on the online distance learning epidemic. To ensure ongoing teaching and learning, focusing on factors other than digital assets, such as infrastructure preparations, student and teacher technological proficiency, motivation, confidence, interest, and a constructive outlook for adapting to unforeseen change is crucial. Also, as a result of the issues caused by the pandemic, technology educators changed and improved. They spent money on network connection and technologies.

To cope with the new normal during the ECQ, I invested in gadgets and an internet connection to continue my work even when no one is allowed to go outside the house. - Participant 4

Instructors' support and attitudes are essential to start and utilizing instructional technology. If educators believe that technology programs do not satisfy their or their pupils' needs, it is anticipated that they will not use technology in their instruction (Buabeng-Andoh, 2012). One aspect that affects how well technology is incorporated into education is the attitudes and perspectives of the instructors (Hew & Brush, 2007; Keengwe et al., 2008).

Theme 3: Rationalizing & Doing

This shows how educators understood the situation and acted appropriately upon it.

The essential goal of education is to provide students the chance to acquire the knowledge and skills they need to become successful and contribute to society. - Participant 2

The most important responsibility of a teacher is to identify and develop meaningful educational opportunities that allow students to address real-world issues, show their understanding of critical ideas, develop strong skills, and engage in character-building activities per accepted educational standards. - Participant 2

All technology courses are skill-based, so in my opinion, they should be taught in a way that ties the ideas students have learned with practical applications. - Participant 3

Over time, technology skills have grown in importance such as during the COVID-19 pandemic (Helmi, et al., 2022). In addition, it became challenging to integrate into society and advance personally without access to information and communication technologies. According to Kivunja (2014), the foundation of the 21st-century learning paradigm is the education of students with the abilities, know-how, and expertise required to thrive in the digital economy. Furthermore, according to Kivunja (2013), individuals with a strong foundation in technical knowledge, abilities, and creativity are in high demand in the 21st-century economy.

Theme 4: Modernizing

This emphasizes the effect of the educator's action by putting into practice both knowledge and skills to continue navigating learning.

As an educator, you must always be resourceful when materials need to be improved. Other mediums, such as gadgets like cellular phones, may be utilized to realize the activities given. - Participant 3

Communication with the students is very important, messenger or any messaging platform plays a big role. - Participant 8

According to Nessipbayeva (2012), the 21st-century teacher must understand how to give students access to technologically aided learning opportunities and how technology might aid in student learning. As Plante (2012) describes, in today's digital landscape in which Digital Natives learn, the world is becoming more technology-centered, focused, and driven. Moreover, another teaching practice utilized by technology educators is collaborative learning.

Students' responsibilities in the learning process include accepting accountability for what is learned and for the outcomes of the process. While attempting to meet the predetermined learning objectives, the students will support one another. - Participant 1

The trend of the twenty-first century is collaboration, which is a promising method of human engagement. On important matters, there is a greater need for collaboration and group thought (Austin, 2000; Gopinathan et al., 2022). Moreover, both group learning and peer-to-peer learning are examples of collaborative learning. Peer learning, often called peer instruction, is a type of cooperative learning in which students work together in pairs or small groups to discuss and resolve problems. After the instructor has given the students an overview of the course subject through lectures, pre-class readings, or videos, this usually occurs during a class session. Similar to the notion that two or three heads are preferable to one, many instructors have discovered that through peer training, students teach each other by addressing errors and dispelling misconceptions

(Chandra, 2015). Similarly, collaboration increases the visibility of thinking, learning, and problem-solving (Glaser, 1991; Gopinathan et al., 2022), enabling students to receive feedback and think critically about their learning and their cognitive and metacognitive processes.

In addition, technology educators made use of outcome-based learning for their students, where the educators paid more attention to outcomes than to the learning processes. Students are provided with specific goals, regular assessments of their progress, and customized feedback on how well they have met those objectives.

Learning takes place in students' heads, where it is hidden from view. As a result, performance standards must be used to assess students' capacity to apply what they have learned. Assessments of students' performance might be official or informal, with high or low stakes, in private or public, or as a group. Students should also be evaluated or assessed through the design of tasks, tests, classroom assessment strategies, concept maps, concept tests, group projects, and the development and use of rubrics. - Participant 1

Outcome-based learning is a wide-ranging strategy for creating and running an educational system centered on and notable by the fruitful learning displays anticipated by each student (Rao, 2020). In addition to modifying the curriculum to reflect high-order learning and mastery rather than accumulating course credits, outcomes-based learning also involves evaluating students and reporting results (Kasyadi et al., 2020).

Propositions

This section contains the study's findings. The following hypotheses are developed after data

were gathered and analyzed using open, axial, and selective coding.

Proposition Derived from the themes generated in the selective coding

Identifying the proposition is the next stage in Strauss' theory generation methodology. The researchers came up with four propositions based on the open coding themes and the outcomes of axial coding and selective coding.

Proposition 1

Technology educators became individuals who are driven, compassionate, and economically satisfied: Visioning

The first proposition described the phase of technology educators as individuals with vision. When submitting the students' actions and outputs, the attitudes of the technology educators have changed from being tough and rigid with them. Technology educators became sensitive and aware of the struggles of their students. According to Son (2021), positive attitudes toward the profession is essential for enhancing the professional abilities. Similarly, Kutay Uzun (2018) argued that educators' professional views could significantly affect how they view the situations and conditions they experience while teaching.

Likewise, technology educators became motivated to carry out their duties at the school. Educators are crucial to the educational process for students who idolize and want to emulate them as educators. As a result, the teacher's motivation is crucial because it directly impacts the students (Alam and Farid, 2011). Likewise, educators who are more internally motivated, or who have received genuine pleasure from their work are more likely to put effort into it and exhibit perseverance in the face of professional hurdles, all of which may encourage autonomous motivation in their pupils (Roth et al., 2007).

Proposition 2

Technology teachers changed into adaptive individuals to impediments of the Pandemic: Learning

The second proposition shows how technology educators adapted due to the challenges of the pandemic. Before the pandemic, educators and students were accustomed to in-person learning. Then, the new normal used online platform. Therefore, educators became compelled to use technology. Consequently, educators needed to familiarize themselves with incorporating technology with instruction. Filipino educators have demonstrated an optimistic outlook during the COVID-19 outbreak (Talidad & Toquero, 2020). However, they are still prone to anxiety since the pandemic is still present in other parts of the world. Educators are aware of how to deal with their concerns regarding their personal, social, and professional lives. According to Mohamad Nasri et al. (2020), the immediate response to the pandemic quarantine closure was for education to virtualize classes to ensure that students would continue learning. According to Pather et al. (2020), class interaction is provided in online remote learning in a variety of modalities, including asynchronous and synchronous classes in text, voice, and video communications. Mohamad Nasri, et al. (2020) added that the synchronous online learning platform was the emphasis of teacher training. Additionally, they were allowed to choose from various platforms while considering the student's accessibility to those platforms. They might choose an asynchronous platform as a result.

Proposition 3

Technology educators converted into individuals who emphasize teaching practical skills to the students: Rationalizing and Doing

This entails the conversion of technology educators who believe that real-life applications are

critical in teaching through the theories or lessons learned in technological courses. Chen (2017) said that a challenging issue for the educational systems of both emerging and established countries is the absence of practical skills among graduates of higher education programs and/or non-compliance with the needs of the labor market. Most higher education institutions in developing nations employ traditional teaching techniques, prohibiting students from learning the skills required by the labor market. The main factor is the need for more framework for integrating knowledge and skills in the developed curricula. According to Dunlap and Grabinger (2003), educators must prepare students for their future careers by fostering their capacity for lifelong learning. This will help students to continuously progress their knowledge and abilities, so they may successfully answer the changing requirements of society.

Proposition 4

Technological educators transformed into individuals who utilize innovations in teaching: Modernizing

This emphasizes that technological educators are utilizing innovations in teaching, like the use of advanced technology. According to Hrastinski (2019), application of technology in teaching and learning is common. Mirriahi et al. (2015) said that traditional lecture teaching mandates that students be present in the classroom, where instruction is restricted to textbooks and educators' notes. However, technology has created new opportunities where educators and students can access vast online learning materials despite the distance. Also, educators spend time online because they engage in virtual learning and work with coworkers in an online professional community, according to Khatser et al. (2021). Due to the suspension of all conferences and activities

relating to education nationwide, they are also determined to come up with solutions.

Theory Generation

This part presents the essence of this research undertaking, which is to create a theory that describes the adaptation of educators teaching technology-based courses. The Theory anchors on the data gathered from the participants. The components of the Theory generated are the phases experienced by these educators in the drifting sands of the academe.

The study generated the Theory of Adaptation of Educators Teaching Technology-Based Courses. The theory describes the transformation of educators of technology courses across academic landscapes through four phases. It claims that educators in technology-based courses undergo metamorphosis, including visioning, learning, rationalizing and doing, and modernizing. Ultimately, they are transformed into a resilient and adaptive educator in the shifting landscapes of the academe caused by the COVID-19 pandemic.

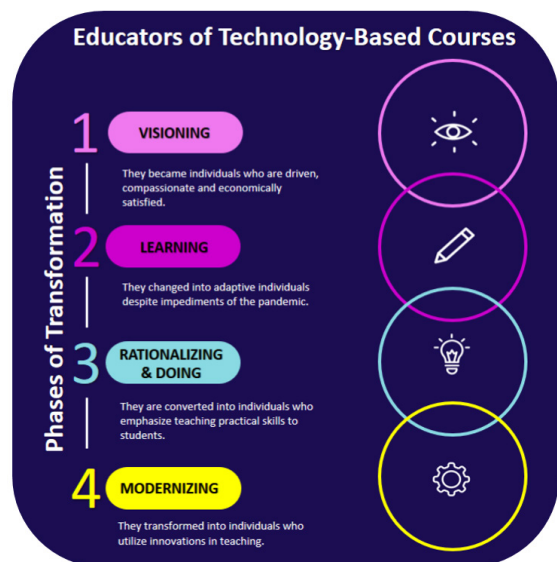


Figure 2. Theory of Adaptation of Educators Teaching Technology-Based Courses

The first phase of the theory describes the visioning phase wherein the educators of technology-based courses significantly changed from being tough and uncompromising with learners into a compassionate and aware that their learners were also struggling due to the pandemic. Thus, these educators are highly concerned about the well-being of their students. Moreover, technology-based educators responsibility-driven for the institution. Onyema et al. (2019) assert that as a result of the increased use of technology in education, educators' perspectives have shifted from the conventional ones in which they were viewed as knowledge distributors to a new and more adaptable perspective in which they are now seen as supporters and motivators who nudge and prod students to participate in and learn.

Furthermore, the second phase of the theory shows the learning transformation of technology-based educators. It shows that they became adaptive because of the challenges. Undeniably, the in-person relationship between the educator and learner was customary before the pandemic. But, with the migration to online learning, the pandemic paved the way for them to embrace technology initially by learning how to use them. As a result, educators have only one option but to learn about and become accustomed to integrating technology with their students. As advised by the Commission on Higher Education, Cervantes (2020) reported that educators in the present time can use the blended learning approach with the aid of technology to help students. CHED advocated reinforcing the platforms online and blended learning such as but not limited to google classroom, messenger, zoom, Edmodo, Facebook, and YouTube.

In addition, the third phase of the theory emphasized the rationalizing and doing phase. This is associated with the concept that educators are keen on teaching their students practical skills.

Dunlap and Grabinger (2003) noted that to help students continuously advance their knowledge and skills to address society's changing needs successfully, educators must get students ready for their future professions by utilizing teaching strategies that increase students' capacity for lifelong learning.

Finally, the fourth phase of the theory describes the modernizing stage. This is the part when they have totally embraced the transition through the adoption of knowledge and competencies for better work performance. According to Alaidi et al. (2020), to improve execution and effectively use time in the classroom, educators employ innovative education. Thus, because modern educational technology is now available, it is always possible for educators to maximize them. Likewise, modern educational technology tools can decrease a lot of management paperwork and save the workload of lecturers.

4.0 Conclusion

The study generated the Theory of Adaptation of Educators teaching technology-based across academic landscapes, which postulates that educators in technology-based courses undergo phases of metamorphosis, which include visioning, learning, rationalizing and doing, and modernizing that ultimately transform educators to become resilient and adaptive of the shifting landscapes of the academe caused by the COVID-19 pandemic.

The study reflects that metamorphosis is part of the shifting sands of the academe that may be tested by different calamities in the future like the pandemic. Successful transformation demands positive qualities like resiliency and dedication. Though technology-based courses are highly associated with an in-person instructional modality for hands-on activities, educators of these courses can still provide quality instructional delivery when they undergo the phases of transformation.

Lastly, commitment to teaching fuels educators towards transformation into becoming better, capable, and suited in the shifting sands of the academic landscape, simply keeping themselves as valuable assets of the academic institution in transforming the generation of learners into productive citizens for national development.

References

- Alaidi, A. H., Yahya, O., & Alrikabi, H. T. (2020). Using Modern Education Technique in Wasit University. *International Journal of Interactive Mobile Technologies (IJIM)*, 14(06), 82–94. <https://doi.org/10.3991/ijim.v14i06.11539>
- Alam, M. T., & Farid, S. (2011). Factors affecting teachers' motivation. *International Journal of Business and social science*, 2(1), 298-304. <http://doi.org/10.1108/IJEM-04-2014-0057>
- Ali, W. (2020). Online and remote learning in higher education institutes: A necessity in light of COVID-19 Pandemic. *Higher education studies*, 10(3), 16-25. Retrieved from <https://doi.org/10.5539/hes.v10n3p16>
- Ancho, I. V., & Arrieta, G. S. (2021). Filipino teacher professional development in the new normal. *Education & Self Development*, 16, 25-43. <https://doi.org/10.26907/esd.16.3.04>
- Andales, G., Sarile, T., Elladora, S., Kintanar, F., & Ramos, A. (2022). Navigating learning through catastrophic calamities: A phenomenological study. *Journal of Science and Education (JSE)*, 3(1), 23-99. <https://doi.org/10.56003/jse.v3i1.134>
- Austin, J. E. (2000). Principles for partnership. *Leader to Leader*, 18(2), 44-50. Retrieved from <https://www.hbs.edu/faculty/Pages/item.aspx?num=6363>
- Beane, J. A. (1990). *Affect in the curriculum: Toward democracy, dignity, and diversity*. New York, NY: Teachers College Press. Retrieved from <https://www.amazon.com/dp/080772999X>
- Buabeng-Andoh, C. (2012). Factors Influencing Teachers' Adoption and Integration of Information and Communication Technology into Teaching: A Review of the Literature. *International Journal of Education and Development using Information and Communication Technology (IJEDICT)*, 8, 136-155. Retrieved from <https://files.eric.ed.gov/fulltext/EJ1084227.pdf>
- Carson, R. L., & Chase, M. A. (2009). An examination of physical education teacher motivation from a self-determination theoretical framework. *Physical Education and Sport Pedagogy*, 14(4), 335-353. <https://doi.org/10.1080/17408980802301866>
- Cervantes, F.M. (2020). CHED Pushes for Flexible Learning for HEIs in August. *Philippine News Agency*. Retrieved from <https://www.pna.gov.ph/articles/1101519>
- Chandra, R. (2015). Collaborative learning for educational achievement. *IOSR Journal of Research & Method in Education (IOSR-JRME)*, 5(2), 4-7. <https://www.iosrjournals.org/iosr-jrme/papers/Vol-5%20Issue-3/Version-1/B05310407.pdf>
- Chen, S. (2017). Higher education development path based on practical education pattern. *Eurasia Journal of Mathematics, Science and Technology Education*, 13(12), 7921-7927. <https://doi.org/10.12973/ejmste/80764>
- Cluver, L., Lachman, J.M., Sherr, L., Wessels, I., Krug, E., Rakotomalala, S., et al. (2020). Parenting in a Time of COVID-19. *Correspondence*. 395 (10231), 64. [https://doi.org/10.1016/S0140-6736\(20\)30736-4](https://doi.org/10.1016/S0140-6736(20)30736-4)
- Collier, M. D. (2005). An ethic of caring: The fuel for high teacher efficacy. *The Urban Review*, 37(4), 351-359. <https://doi.org/10.1007/s11256-005-0012-4>
- Derasin, L. M. C., Canque, M. S., Horteza, A. D., & Jungoy, E. E. (2021). Virtual Learning In A State University In The Philippines: Perspectives From The Education Students. *Multicultural Education*, 7(10). <https://doi.org/10.5281/zenodo.5565139>
- Douglas, A.S. (2019). Learning to Teach: A Focus on the Personal Rather Than The Technical Aspects of Teacher Education. *Teacher Education Advancement Network Journal*. 11 (1) 71-83. Retrieved from <https://files.eric.ed.gov/fulltext/EJ1268223.pdf>

- Dunlap, J. C., & Grabinger, S. (2003). Preparing students for lifelong learning: A review of instructional features and teaching methodologies. *Performance Improvement Quarterly, 16*(2), 6-25. Retrieved from <https://eric.ed.gov/?id=EJ677274>
- Flick, U. (2009). *An introduction to qualitative research* (4th ed.). Sage Publications Ltd. Retrieved from <https://psycnet.apa.org/record/2009-06059-000>
- Foughty, M., Bensig, R. & Ramos, A. (2023). Paralanguage Influences in Intercultural Communication of Foreign Nationals in Cebu, Philippines. *Journal of World Englishes and Educational Practices, 5* (1), 57-64. <https://doi.org/10.32996/jweep.2023.5.1.6>
- Freeman, C. (2008). Teacher Efficacy and its Impact on Student Achievement. *All Regis University Theses. 16*. <https://epublications.regis.edu/theses/16>
- Gecolea, C. M., & Gecolea, P. G. (2021). Strengthening Parent's Engagement Amidst Pandemic: A Grounded Theory. *International Journal of Theory and Application in Elementary and Secondary School Education, 3*(2), 39-50. <https://doi.org/10.31098/ijtaese.v3i2.621>
- Glaser, R. (1991). The maturing of the relationship between the science of learning and cognition and educational practice. *Learning and instruction, 1*(2), 129-144. [https://doi.org/10.1016/0959-4752\(91\)90023-2](https://doi.org/10.1016/0959-4752(91)90023-2)
- Godfrey, N. S. (2006). Making our students smart about money. *The Education Digest, 71*(7), 21. Retrieved from <https://eric.ed.gov/?id=EJ741038>
- Gopinathan, S., Kaur, A. H., Veeraya, S., & Raman, M. (2022). The role of digital collaboration in student engagement towards enhancing student participation during COVID-19. *Sustainability, 14*(11), 6844. <https://doi.org/10.3390/su14116844>
- Guba, E. G., & Lincoln, Y. S. (1989). *Fourth generation evaluation*. Sage Publications, Inc. Retrieved from <https://psycnet.apa.org/record/1989-98594-000>
- Hayhoe, C. R., Leach, L. J., Turner, P. R., Bruin, M. J., & Lawrence, F. C. (2000). Differences in spending habits and credit use of college students. *Journal of Consumer Affairs, 34*(1), 113-133. <https://doi.org/10.1111/j.1745-6606.2000.tb00087.x>
- Helmi, N., Nor, H. A., Nordin, N., Ally, M., & Tsinakos, A. (2022). The educational digital divide for vulnerable students in the pandemic: Towards the new agenda 2030. *Sustainability, 14*(16), 10332. <https://doi.org/10.3390/su141610332>
- Hew, K. F., & Brush, T. (2007). Integrating technology into K-12 teaching and learning: Current knowledge gaps and recommendations for future research. *Educational technology research and development, 55*, 223-252. <https://doi.org/10.1007/s11423-006-9022-5>
- Hrastinski, S. (2019). What do we mean by blended learning? *TechTrends, 63*(5), 564-569. <https://doi.org/10.1007/s11528-019-00375-5>
- Joo, S. (2008). Personal financial wellness. *Handbook of consumer finance research, 21-33*. https://doi.org/10.1007/978-0-387-75734-6_2
- Kasyadi, S., Lapasau, M., & Virgana, V. (2020). Enhancing learning outcome in integral through online teaching based during COVID-19 pandemic. *Journal of Physics: Conference Series, 1663*(1). <https://doi.org/10.1088/1742-6596/1663/1/012059>
- Keengwe, J., Onchwari, G., & Wachira, P. (2008). Computer technology integration and student learning: Barriers and promise. *Journal of science education and technology, 17*, 560-565. Retrieved from <https://www.jstor.org/stable/41219452>
- Khatser, G., Khatser, M., Bukharina, L., Dybchinska, Y., & Lysenko, M. (2021). Transformation of the educational process within online technologies implementation in the period of the global crisis. *International Journal of Emerging Technologies in Learning (Online), 16*(11), 245-260. <https://doi.org/10.3991/ijet.v16i11.21265>
- Kivunja, C. (2013). Embedding digital pedagogy in pre-service higher education to better prepare teachers for the digital generation. *International Journal of Higher Education, 2*(4), 131-142. <https://doi.org/10.5430/ijhe.v2n4p131>

- Kivunja, C. (2014). Do You Want Your Students to Be Job-Ready with 21st-Century Skills? Change Pedagogies: A Pedagogical Paradigm Shift from Vygotskyian Social Constructivism to Critical Thinking, Problem Solving, and Siemens' Digital Connectivism. *International journal of higher education*, 3(3), 81-91. <http://dx.doi.org/10.5430/ijhe.v3n3p81>
- Kutay Uzun, E.Z.T. (2018). The Effect of Genre-Based Instruction on Foreign Language Writing Anxiety. *Journal of Language and Linguistic Studies*. 14(4). 243-258 Retrieved from <http://www.jlls.org/index.php/jlls/article/view/1062/433>
- Kvale, S. and Brinkmann, S. (2015) Interviews: Learning the Craft of Qualitative Research Interviewing. 3rd Edition, Sage Publications, Thousand Oaks, CA. Retrieved from <https://us.sagepub.com/en-us/nam/interviews/book239402>
- Llego, M. A. (2020). DepEd Learning Delivery Modalities for School Year 2020-2021. Retrieved from <https://www.teacherph.com/deped-learning-delivery-modalities/>
- Maysseless, O. (2015). *The caring motivation: An integrated theory*. Oxford University Press. Retrieved from <https://global.oup.com/academic/product/the-caring-motivation-9780199913619?cc=us&lang=en&>
- Mercado, J. C. (2021). A Phenomenological Study on Students' Experiences in Learning Physics in an Online Class. *Science Education Journal*. 32(4).384-389. <https://www.icaseonline.net/journal/index.php/sei/article/view/346>
- Mohalik, R. and Sahoo, S. (2020). E-Readiness and Perception of Student Teachers' Towards Online Learning in the Midst of COVID-19 Pandemic. <https://dx.doi.org/10.2139/ssrn.3666914>
- Mohamad Nasri, N., Husnin, H., Mahmud, S. N. D., & Halim, L. (2020). Mitigating the COVID-19 Pandemic: a snapshot from Malaysia into the coping strategies for pre-service teachers' education. *Journal of Education for Teaching*, 46(4), 546-553. <https://doi.org/10.1080/02607476.2020.1802582>
- Mirriahi, N., Alonzo, D., McIntyre, S., Kligyte, G., & Fox, B. (2015). Blended learning innovations: Leadership and change in one Australian institution. *International Journal of Education and Development using ICT*, 11(1).4-16.Retrieved from <https://files.eric.ed.gov/fulltext/EJ1061471.pdf>
- Muller, C. (2007). The Role of Caring in the Teacher-Student Relationship for At-Risk Students. *Sociological Inquiry*. 71 (2), 241-255. <https://doi.org/10.1111/j.1475-682X.2001.tb01110.x>
- Nebrida, J. A., Amor, G. B., Mazorca, R. G., Nacional, R. B., & Villas, J. P. (2022). Challenges of a School in Teaching and Learning: A Grounded Theory. *Journal of Scientific Research and Reports*, 28(7), 50–63. <https://doi.org/10.9734/jsrr/2022/v28i730535>
- Nessipbayeva, O. (2012). The Competencies of the Modern Teacher. *Bulgarian Comparative Education Society*. Retrieved from <https://eric.ed.gov/?id=ED567059>
- Noddings, N. (1984). *Caring: A feminine approach to ethics and moral education*. Berkeley, CA: University Press. <https://philpapers.org/rec/NODCAF>
- Noddings, N. (1992). Social studies and feminism. *Theory & Research in Social Education*, 20(3), 230-241. <https://doi.org/10.1080/00933104.1992.10505667>
- Noddings, N. (2006). Educational leaders as caring teachers. *School leadership and management*, 26(4), 339-345. <https://doi.org/10.1080/13632430600886848>
- Onyema, E. M., Ogechukwu, U., Anthonia, E. C. D., & Deborah, E. C. (2019). Potentials of mobile technologies in enhancing the effectiveness of inquiry-based learning approach. *International Journal of Education (IJE)*, 2(01), 1-22. <https://flyccs.com/journals/IJSP/paper/ijspNO2.pdf>
- Pather, N., Blyth, P., Chapman, J. A., Dayal, M. R., Flack, N. A., Fogg, Q. A., ... & Lazarus, M. D. (2020). Forced disruption of anatomy education in Australia and New Zealand: An acute response to the Covid-19 Pandemic. *Anatomical Sciences Education*, 13(3), 284-300. <https://doi.org/10.1002/ase.1968>

- Pianta, R. C. (1992). Conceptual and Methodological Issues in Research on Relationships between Children and Nonparental Adults. *New Directions for Child Development*, 57, 121-29. <https://doi.org/10.1002/cd.23219925709>
- Pianta, R. C. (1999). *Enhancing relationships between children and teachers*. Washington, DC: American Psychological Association. <https://psycnet.apa.org/doi/10.1037/10314-000>
- Plante, T. (2012, July 24). Digital Natives vs. Digital Immigrants? Which are you? Do the Right Thing. *Psychology Today*. <https://www.psychologytoday.com/us/blog/do-the-right-thing/201207/digital-native-vs-digital-immigrant-which-are-you>
- Ramos, A., & Baldespiñosa, M. (2021). Bridging between Beliefs and Needs of Language Teachers in Philippines: Personal Qualities, Strategies, and Framework during COVID-19 Pandemic. *REiLA: Journal of Research and Innovation in Language*, 3(3), 194-209. <https://doi.org/10.31849/reila.v3i3.7401>
- Rao, N. J. (2020). Outcome-based Education: An Outline. *Higher Education for the Future*, 7(1), 5–21. <https://doi.org/10.1177/2347631119886418>
- Reinald Adrian, D. P., Habito, C. D. L., & Figueroa, Roberto B., Jr. (2016). Hybrid online/offline mobile solutions for accessing open educational resources in areas with poor internet connectivity. *Asian Association of Open Universities Journal*, 11(2), 182-196. <https://doi.org/10.1108/AAOUJ-09-2016-0030>
- Reyes-Velázquez, W., & Pacheco-Sepúlveda, C. (2022). Heading for the future after COVID-19: Reflections and recommendations on teaching processes in a rapidly changing learning landscape. *Journal of Communication Pedagogy*, 6, 20-25. <https://doi.org/10.31446/JCP.2022.1.04>
- Roos, L., Salisbury, M., Penner-Goeke, L., Cameron, E.E., Protudjer, J.L., Giuliano, R., Afifi, T.O., Reynolds, K. (2021). Supporting Families to Protect Child Health: Parenting Quality and Household Needs During the COVID-19 Pandemic. *PLoS ONE*. 16(5): e0251720. <https://doi.org/10.1371/journal.pone.0251720>
- Roth, G., Assor, A., Kanat-Maymon, Y., & Kaplan, H. (2007). Autonomous motivation for teaching: how self-determined teaching may lead to self-determined learning. *Journal of Educational Psychology*, 99(4), 761. <https://doi.org/10.1037/0022-0663.99.4.761>
- Secuya, C. L., & Abadiano, M. N. (2022). Embracing the New Normal Set-Up from Modular to Face-to-Face Learning: A Grounded Theory. *Journal of Positive School Psychology*, 6(5), 8250-8264. Retrieved from <https://journalppw.com/index.php/jpsp/article/view/9345/6073>
- Simonova, I., Faltynkova, L., & Kostolanyova, K. (2023). New blended learning enriched after the COVID-19 experience? students' opinions. *Sustainability*, 15(6), 5093. <https://doi.org/10.3390/su15065093>
- Sinclair, C. (2008). Initial and changing student-teacher motivation and commitment to teaching. *Asia-Pacific Journal of Teacher Education*, 36(2), 79-104. <https://doi.org/10.1080/13598660801971658>
- Son, H. (2021). The effects of simulation problem-based learning on the empathy, attitudes toward caring for the elderly, and team efficacy of undergraduate health profession students. *International Journal of Environmental Research and Public Health*, 18(18), 9658. <https://doi.org/10.3390/ijerph18189658>
- Soriano, R., Asio, H., Almoite, A., Cruz, K. D., & Aspiras, E. (2022). Teaching in Tumultuous Times: Unraveling Teachers' Experiences amidst the COVID-19 Pandemic. *Journal of Education, Management and Development Studies*, 2(1), 128-141. <https://doi.org/10.52631/jemds.v2i1.64>
- Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (2nd ed.). Sage Publications, Inc. <https://doi.org/10.4135/9781452230153>
- Strauss, A., & Corbin, J. M. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Sage Publications, Inc. Retrieved from <https://psycnet.apa.org/record/1990-98829-000>
- Talidong, K.J.B. & Toquero, C.M.D. (2020) Philippine Teachers' Practices to Deal with Anxiety amid COVID-19. *Journal of Loss and Trauma*, 25(6-7),

573-579. <https://doi.org/10.1080/15325024.2020.1759225>

Wentzel, K. R. (1997). Student motivation in middle school: The role of perceived pedagogical caring. *Journal of Educational Psychology*, 89(3), 411–419. <https://doi.org/10.1037/0022-0663.89.3.411>

Zhang, D., Wang, Y., & Jiao, Y. (2022). The impact of social pension schemes on the mental health of the Chinese elderly: A mediating effect perspective of two-way intergenerational support. *International Journal of Environmental Research and Public Health*, 19(14), 8721. <https://doi.org/10.3390/ijerph19148721>