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Post -Pandemic Approach on Learning Mixed-Mode Education (PALM) : A Process towards Flex Instructional Delivery

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Abstract

A process towards flex instructional delivery is a post-pandemic-approach for learning mixed-mode education. As the approach of the method of delivery developed into an advanced form, it swiftly adjusted to changes in the usage of mix-blended learning. This study explored the process of flex instructional delivery using the PALM approach. The design used combined the grounded theory methodology by Strauss and meta-synthesis. The Enhanced Learning to Quality Education (Causal Condition) led to the adoption of the Delivery Mode of Instruction (Phenomenon). Various strategies were implemented primarily on implementing Digitalized Educational Framework (Strategies). This approach identified several benefits and drawbacks of post-blended learning (Consequences). Implementing this post-pandemic approach of mixed-mode education utilized an emergent Digitalization Technology to carry out the process of Flex Instruction Delivery (Context). The new paradigm approach of its transition was not easy for non-digital natives as several feedbacks were exemplified by several. Several challenges in Flex Delivery of Instruction were encountered (Intervening Conditions). The transition of blended learning into face-to-face marks the transformation of new curriculum development. Theoretical Framework on the 3Rs Process of Flex Blended Mode of Instruction: Revisit, Redesign, and Reform Theory of Curriculum was developed to appropriately customize the Flex Blended Mode of Delivery of Instruction during the post-pandemic.

Keywords: flex instruction, theoretical framework of 3Rs theory, blended learning, PALM, grounded theory, meta-synthesis

Introduction

The untimely shift of the educational mode of delivery during the COVID-19 pandemic created restrictions in various platforms for face-to-face instruction. A process towards flex instructional delivery is a post-pandemic-approach for learning mixed-mode education as the approach of the method of delivery developed into an advanced form, such as online learning techniques, e-Learning tools, and the use of cutting-edge learning management systems to improve technological and pedagogical teaching and learning process, swiftly adjusted to changes in the usage of mix-blended learning.   This study explored the method of flex instructional delivery using the PALM approach.

The current provision of education teaching- learning process was an empirical approach to suit the needs of the learners while quality education is kept at pace. The mode of delivery during the pandemic was the most significant function that the Higher Education Institution (HEI) performed and delivered. Several regulations using different guidelines were carefully crafted by the Commission on Higher Education, Department of Education, and the issuances of National and Local government units through the special assignment of the Inter-Agency Task Force (IATF) for the management of infectious diseases while blended classes were conducted.

The Commission on Higher Education (CHED), through the Technical Working Group for Flexible Learning (TWG-FL), conducted an Online Public Orientation on the CHED Memorandum Order (CMO) No. 04, series 2020, known as the **"**Guidelines on the Implementation of Flexible Learning" last September 25, 2020. Flexible/blended learning is the design and delivery of programs, courses, and learning interventions that address learners' unique needs in terms of place, pace, process, and learning products (CHED, 2020). The critical component of a blended course is that digital materials are not utilized to replace in-person class time; instead, they are designed to supplement and expand on the concepts presented in class.

The pandemic has dramatically changed the higher education system in the Philippines with a distinctive shift in online instruction as an effort to limit further transmission of the virus. This sudden change to online instruction raised concern among many teachers and students because a large segment of the population has unstable internet access and limited electronic devices (Pastor, 2020; cited in Mirandilla-Santos, 2016). Since the pandemic started and presently shows little signs of declining, worries whether internet connection would not suffice to support online education persist as a challenge.

This preparedness will necessitate the allocation of resources to deal with mental health challenges as well as additional training in pedagogical methods so that teachers can build relationships and work toward improving social, teaching, and cognitive presence even in the online medium of instruction (Singh, Steele & et al., 2021). This gap is shifting to remote learning, and online classrooms uncovered conflicting preferences; despite wanting more interactive lectures, only half of the students were comfortable interacting using video cameras. Free text responses provided an insight into how some students reported an inadequate home working space/environment and lacked necessary items such as a desk, highlighting how remote working may intensify social and digital inequality - particularly for students from more deprived households. (Bashir, A., Bashir, S., Rana, K., & Lambert P., 2021) Direct interviews with the school administrators implementing a blended learning mode will help build concrete thought aside from the articles gathered by the researchers.

Although blended and hybrid learning are used interchangeably, there is a distinction since the online aspects of hybrid courses are meant to address in-person class time. Online engagements in a hybrid medium of education can be conducted synchronously with real-time meeting sessions or asynchronously with students interacting at varying periods (Singh, J., Steele, K., & Singh, L.,2021).

A study revealed that most students reported positive experiences of online open-book assessments emphasizing that they tend to welcome this format in the future. Most students faced no technical issues, predominantly stating they also had good internet connectivity. The pandemic has posed significant

challenges in the day- to-day activities of education. The immediate impact has been lockdowns over the last year and the enforced closure of schools, colleges, and universities (Watermeyer et al., 2020).

However, this has not led to a cessation of learning, teaching, and assessment; instead, online contingency plans were designed to continue teaching and evaluation via a digital interface so students can progress with their studies (Rapanta et al., 2020). The emergency response from educational institutions during crises (e.g., pandemics or conflict) to shift teaching and assessments online is known as Emergency Remote Education -ERE, (Shin and Hickey, 2020). ERE can involve adapting content traditionally taught face-to-face as blended learning or as fully distanced learning (Shin and Hickey, 2020).

In this post -pandemic blended mode of delivery, many learning institutions adapted to more innovative tools in technology education. A study on the process of Post -Pandemic Approach to Learning Mixed-Mode Education will address the gap by reviewing significant operations on how blended education will continuously be implemented. In contrast, the retention of the quality of education is observed. This theory is a venue that could provide a cutting-edge process as bases for knowledge management. It is a pedagogy that develops student understanding and appreciation beyond the levels ordinarily achievable through blended teaching. A new theory on flex learning mode will be designed to strengthen the teaching-learning process.

Domain of Inquiry

The study aims to develop a substantive theory on the process of post-pandemic approaches in learning mixed-mode education. The following subproblems will seek to answer in support of the main problem:

1. What concepts are revealed from the participants' perceptions of using the Post-Pandemic Approach to Learning Mixed-Mode Education?

2. What significant themes can be formulated based on the concepts revealed by the participants?

3. Based on the findings, what theory can be generated?

Review of Related Literature

Blended learning incorporates traditional face-to-face classroom teaching and learning using digital learning platforms and resources. Lessons, materials, and instructions will be delivered to people without access to computers or the internet via radio and television across the country. Similar to this, the many blended learning approaches will adapt to the context of the various locales where they are used. It is not only comprehensible but also admirable that the DepEd wants to continue providing high-quality education to students across the nation by using "blended learning" in spite of the evident threat posed by COVID-19.

The country's vulnerable, underprivileged, and marginalized youngsters will be disadvantaged. Another fact is the potential rise in internet subscription payment fees, which affects both students and teachers. It should be noted that, compared to other nations in the region, internet services in the Philippines are slow and expensive. The country's various socioeconomic classes have unequal and asymmetrical access to ICT amenities. There are many places in the nation without internet connectivity, and those that do either have slow speeds or insufficient bandwidth.

Teachers may over-deliver content and activities, which could cause learners to experience cognitive overload. Poorer outcomes could be caused by the absence of direct teacher supervision and the different levels of ability among students to understand and process the lessons being taught (Uy, A.2020). Additionally, it is challenging for teachers to compare, synchronize, and measure the speed and rate of progress of students taking online courses against those taking them offline. Some students faced challenges during the post-pandemic blended approach, like pre-exam support and preparation, discomfort being seen in the camera, and concerning the home working environment. Some students preferred to remain anonymous because they felt self-conscious and uncomfortable being caught on

camera. Some students yearned for more participation opportunities and requested more dynamic lectures. They did not, however, wish to activate their camera (Bashir, A.et.al 2021).

For some students, the house was not the best place to study for various reasons, including the fact that it was a gathering place for the family or because family members kept interrupting them. Their desire for a specialized study area would have boosted their motivation. These students valued their on-campus learning environment and wanted to take tests in a conventional exam room. The physical environment is critical for the students, especially those from low-income households who do not have decent quality laptops, fast internet connections, or basic amenities like a desk to study at, as some students claimed that their houses were unsuitable settings to study or take exams (Bashir, A.et.al 2021).

Hybrid and Blended Learning Approach

The key component of a blended course is that digital materials are not utilized to replace in-person class time; instead, they are designed to supplement and expand on the concepts presented in class. Although blended and hybrid learning are used interchangeably, there is a distinction since the online aspects of hybrid courses are meant to address in-person class time. Online engagements in a mixed medium of education can be conducted synchronously with real-time meeting sessions or asynchronously with students interacting at varying periods. The study presented the pros and cons of hybrid and blended learning approaches during the Covid 19. post-vaccine and post-pandemic. The Covid 19 setting identified the emergence of problems mainly with the face-to-face to completely online medium of instruction. On the other hand, during the post-vaccine to post-pandemic period, it analyzed the blended and hybrid medium of instruction (Singh, J., Steele, K., & Singh, L. 2021)

The hybrid model allows students to take part in necessary in-person activities like laboratory practicals and opportunities for online instruction. Social, fitness, and recreational resources are available to students who participate in campus activities. In a recent poll conducted at Aston University, 49% of first-year participants reported they preferred a blended learning style (incorporating both face-to-face and

online teaching for content delivery). The recent survey's finding that 44% of first-year students worked part-time suggests that these students would appreciate the flexibility offered by the hybrid delivery of their course (Bashir, A.et.al 2021). It has been found that blended learning is the most effective way to learn educational technology ideas. The undergraduate students who were taught using a mixed learning style of education performed better than their counterparts who were taught using traditional teaching methods and e-learning (Gambari A, 2017).

The successful implementation of blended learning initiatives necessitates careful planning and consideration of multiple factors. The next step in developing productive and efficient professional development initiatives is to center on evaluation and accountability in their design. Special considerations for technological issues, infrastructure, and dealing with the context of universities, where educators frequently must divide their time between teaching and other duties, demonstrate that evaluation approaches must take a comprehensive look at all levels, paying particular attention to changes that must occur at an institutional level. The study revealed guidelines and procedures for each evaluation category, emphasizing higher education contextual challenges (Garone, A., Bruggeman, B., Philipsen, B. et al.).

Methodology

The design used combined the grounded theory methodology by Strauss and meta-synthesis. Meta-synthesis is an intentional and coherent approach to analyzing data across qualitative studies. It is a process that enables researchers to identify a specific research question and search for, select, appraise, summarize and combine qualitative evidence to address the research question.

The inclusion criteria include the topics related to the post-pandemic blended mode of delivery in full text in English with publication within the last three years. The exclusion criteria were review, systematic review, meta-synthesis, double reported, non-full text, a publication not in English, and published more than four years ago.

Local/Method Search

The method search strategy includes the article searches that were conducted using PubMed, Google Scholar, and Cochrane from March 2019 to April 2022 based on the preferred reporting items for systematic reviews and meta-synthesis (PRISMA) guidelines. The keywords used include "Post-Pandemic Blended Mode of Delivery" and "Flex Instructional Delivery."

However, if the data limits the theory generation, there will be an additional informant of the selected school deans from different regions in the country.

Participants

The researchers assessed the selected articles, did abstract selection, selected studies independently, and checked the data extraction. Experts validated all the extracted data. The data removed from the report include study (type of study, year of publication, location), post-Pandemic blended mode of delivery, and other related articles. The results selection and study characteristics were searched according to inclusion and exclusion criteria. If the report would not appear in full text, if it is a review or systematic review, a meta-synthesis, or a case study, it will be excluded or eliminated.

The informants of the study were the deans from different schools in the country. They were selected further to answer the questions and gaps in the study.

Data Gathering Procedure

The articles were screened from 20 articles reducing to 5 articles that comply with the inclusion and exclusion criteria requirements. The papers were further reviewed and sorted out to develop significant themes to generate a theory. This was anchored by Strauss' Grounded Theory Approach.

The result of the study was used to extract themes from the five articles. These articles were found with similar themes. The flex instructional delivery was considered in the selection of articles. The data saturation was based on a repeated paradigm approach mentioned in the article. The concept revealed in each article was paramount to linking from one theme linking to another. Memo-writing was used to elaborate categories, specify their properties, define relationships between categories and identify gaps (Glaser & Strauss, 1967). Themes were categorized according to each core category and further reduced to streamline into significant propositions.

The initial proposition for each article was further scrutinized through open coding, axial coding, and selective coding. This means that there was an iterative process to recall the previous significant meaning of the proposition. In coding, the most significant and/or frequent earlier codes were used to sift through large amounts of data or the many initial propositions generated. Though it is not a linear process somewhat emergent and calls for a full, active involvement of the process. From a broad category of propositions, an agreement among the researchers will be considered to saturate the emergent concept in the propositions. From fifteen propositions, it will be reduced to seven (7) final propositions categorizing one proposition into another.

The second iteration was done after considering all the results from the first iteration. The researchers found some questions that can be answered by the deans of schools implementing hybrid learning instructions. Theoretical sampling was done to gather more data based on derived theories from the second iteration of data analysis.

Instrument.

The progress in Flex Instructional Delivery, which combines instruction and online learning, will benefit both instructors and students by developing their information and communications technology skills. Teachers' instructional abilities have been boosted due to the Covid-19 pandemic by regaining their digital competency. The description of the theory-building process in this work was influenced by the domain of inquiry statement, which includes: What are the concepts revealed? What are the major themes that may be extracted from the ideas of the articles delivered via the post-pandemic blended mode of delivery? And Based on the important evaluated research, what theory may be developed?

The five articles came up with five concepts: "Customized blended learning," "Customized blended needed in learning," "Rethink the higher education system," "Blended education is the post-pandemic solution," and "Flexible Online Platforms and Enhanced Blended Learning."

The following were the guide questions for analyzing the data and developing a theory.

1. What are the results of the study?

2. What propositions can be created from these results?

3. What themes can be derived from these propositions?

Ethics

The researchers submitted the manuscript to the Center of Research and Innovation, requesting the Ethical Review Committee for ethical consideration of the paper. This section presents the ethical consideration of the study, which the researcher takes into account to preserve the dignity, reputation, and protection of the participants and the credibility of the research. The ethical principles emphasizing justice, beneficence, respect, and transparency were the basis of this study's conduction.

One of the main concerns of the study is to adhere to the principle of respect. The researcher considers that the respondents' rights will be acknowledged and respected. They will be free to choose, especially in answering the survey questionnaire, at their most convenient time and availability. As for this, the researchers ask for their free time and inform them in advance of their participation in the study. Informed consent was presented to them, which protects the confidentiality of information. In the informed consent, it was stressed that the survey was voluntary and the respondents had the right to withdraw from their participation. The researcher observes the following:

A. Risk and Benefit Assessment

The researchers consider the risks they will encounter during the study. It was expected in the study the problems or risks that may be encountered in the profession of teachers, administrators and the dignity of the schools. Hence, a necessary intervention will be taken to address the potential risks of the study. The interventions to be made will be provided to address the gaps whenever they are met.

B. Content, Comprehension, and Documentation

The formal consent, which the REC approved, was given and discussed with the respondents; thus, the rights to conduct the study were protected. The respondents' participation was voluntary for their approval of being part of the study done in a consent form. Other guidelines in the protocol were comprehensively observed.

Data Analysis

Grounded theory is an analytical tool and methodological strategy that can be adapted without endorsing a prescribed theory of knowledge or view of reality. Successive levels of abstraction through comparative analysis constitute the core of grounded theory analysis. Essential parameters for evaluation are credibility, originality, resonance, and usefulness (Charmaz, K., 2006). The flow of theory development was an approach to Strauss' grounded theory. It started with research questions, a reference in data gathering, coding of data for initial and focused coding, which is coded with a line-by-line pattern, comparing incidents, axial, selective, and theoretical coding.
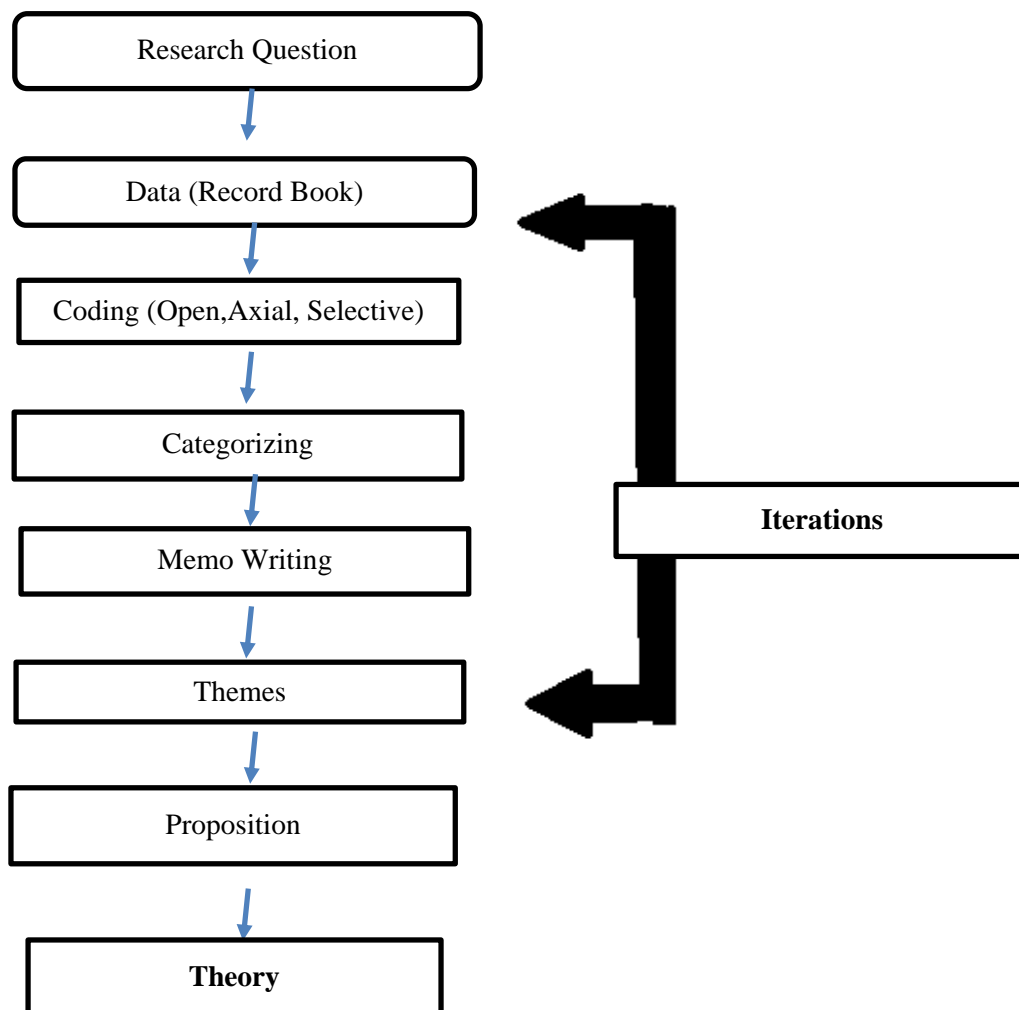
Grounded Theory

Figure 1. Flow of Theory Development: Grounded Theory Approach

Results and Discussion

Coding

Coding means categorizing segments of data with a short name that simultaneously summarizes an account for each piece of data. Codes show how to select, separate, and sort data to begin an analytical accounting of them (Charmaz, K., 2006). Categories are developed based on the properties or characteristics of the coded data.

Table 1. Coding Process of the Post-Pandemic Mode of Mixed Education on Flex Instruction of

Delivery for Sub-category 1: Phenomenon, Sub-category 2:Casual Condition,

Sub-category 3: Strategies, Sub-category 4: Consequences, Sub-category 5: Context,

Sub-category 6: Intervention

Open Coding Codes	Axial Coding Codes
Codes	**Sub -Category 1: Causal Condition**
Mixed learning style Traditional Teaching Blended Learning System On-line and off-line combination Blended Approach Remote teaching	Cause: Delivery Mode of Instruction ● Mixed Learning Style ● Traditional Teaching ● Blended Learning System ● On-line and Off-line Combination ● Blended Approach ● Remote Teaching
Codes	Sub-Category 2: Phenomenon
Educational Technology Ideas Digital fluency Addressing faculty's self efficacy	Phenomenon: Enhanced Learning Approach to Quality Education ● Educational Technology Ideas

Restrictions to travel Enhanced learnings	● Digital Fluency ● Addressing Faculty's Efficacy ● Restrictions to Travel ● Enhanced Learning
Codes On-line lecture On-line Assessment Synchronous Activity Asynchronous Activity Using Learning Management System Interactive resources Pre-installed application	Sub-Category 3: Strategies Strategy: Implementation of Digitalized Educational Framework ● On-line lecture ● On-line assessment ● Synchronous activity ● Asynchronous activity ● Using Learning Management System ● Interactive Resources ● Pre-installed digital application
Codes Greatest success of blended learning Technology Efficient Customized program Addressing Faculty's need Learning at their own pace, self -paced part leads to the students focus Effective for adult learners Learning materials can be accessed readily Improves independent learning Introduces new technology Not all students can access the internet Lacks direct communication to teachers Communication is limited More time needed for instructional materials preparation	Sub-Category 4: Consequences: Benefits and Drawbacks of Post Blended Learning Bendefits: ● Greatest success of blended learning ● Technology Efficient ● Customized program ● Addressing Faculty's need ● Learning at their own pace.self paced part leads to the students focused ● Effective for adult learners ● Learning materials can be accessed readily ● Improves independent learning ● Introduces new technology Drawbacks: ● Not all students can access the internet ● Lacks direct communication to teachers ● Communication is limited ● More time needed for instructional materials preparation ● Difficulty in attendance ● Switching from online to face to face

Difficulty in attendance Switching from online to face to face cause difficulty in learning Keep up with the post pandemic set up"	cause difficulty in learning ● keep up with the post pandemic set up"

Coding

Have a sense of autonomy over their learning experiences

Face to face delivery move back to classroom

Customized program for blended learning

Navigate to a digital environment.

University teachers are developers of technology

Rotational flipped, blended learning

Redesign, redevelop, new ways, to facilitate blend-flexible

education,

Students learn more through interactive discussion

Careful planning for its implementation

Challenging preparation both for face to face and on-line s

 set-up

Limiting technology literacy for traditional teachers

Synchronous (on-line) and Asynchronous (offline, module)

 Activity, Hyflex

 Learning Management System online platform was installed

Communication Platform: Zoom, google meet, microsoft teams

Observing Flexibility in the class

Preparation during flex delivery of instruction:

   "Mind setting"

   "Practice learning"

   "Seminars and workshops"

   "Benchmarking with other colleges

My perception of this is student directed, teacher directed and environment directed.

Sub-Category 5: Context
Flex Instructional Delivery: PALM Approach

Context:

  Digitalization Technology:
- Navigate to a digital environment.
- University teachers are developers of technology
- Limiting technology literacy for traditional teachers
- Practices include:
   "Teacher collaborated with their co teachers"
   "Teachers call the ICT as to be assisted"
   " ICT seminars were conducted for virtual classroom to hone their ICT skills"

  Flex Instruction of Delivery:
- Rotational flipped, blended learning
- Redesign, redevelop, new ways, to facilitate blend-flexible education,
- Students learn more through interactive discussion
- Careful planning for its implementation
- Challenging preparation both for face to face and on-line s set-up
- Synchronous (on-line) and Asynchronous (offline, module) Activity, Hyflex
- Learning Management System online platform was installed
- Observing flexibility in the class
- Preparation during flex delivery of instruction:
   "Mind setting"
   "Practice learning"
  "Seminars and workshops"
  "Benchmarking with other colleges
   "Printed and electronic learning materials, the internet for online and the classroom for face-to-face"

- My perception of this is student directed, teacher directed and environment directed.
- Transformational Online Training Learning every quarter,

Transformational Online Training Learning every quarter,

Practices include:

"Teacher collaborated with their co teachers"

"Teachers call the ICT as to be assisted"

" ICT seminars are conducted for virtual classroom to hone their ICT skills"

" Printed and electronic learning materials, the internet for

online and the classroom for face-to-face"

Smooth transition from the pandemic's mode of instruction, back to the face-to-face classes

- Have a sense of autonomy over their learning experiences
- Smooth transition from the pandemic's mode of instruction, back to the face-to-face classes
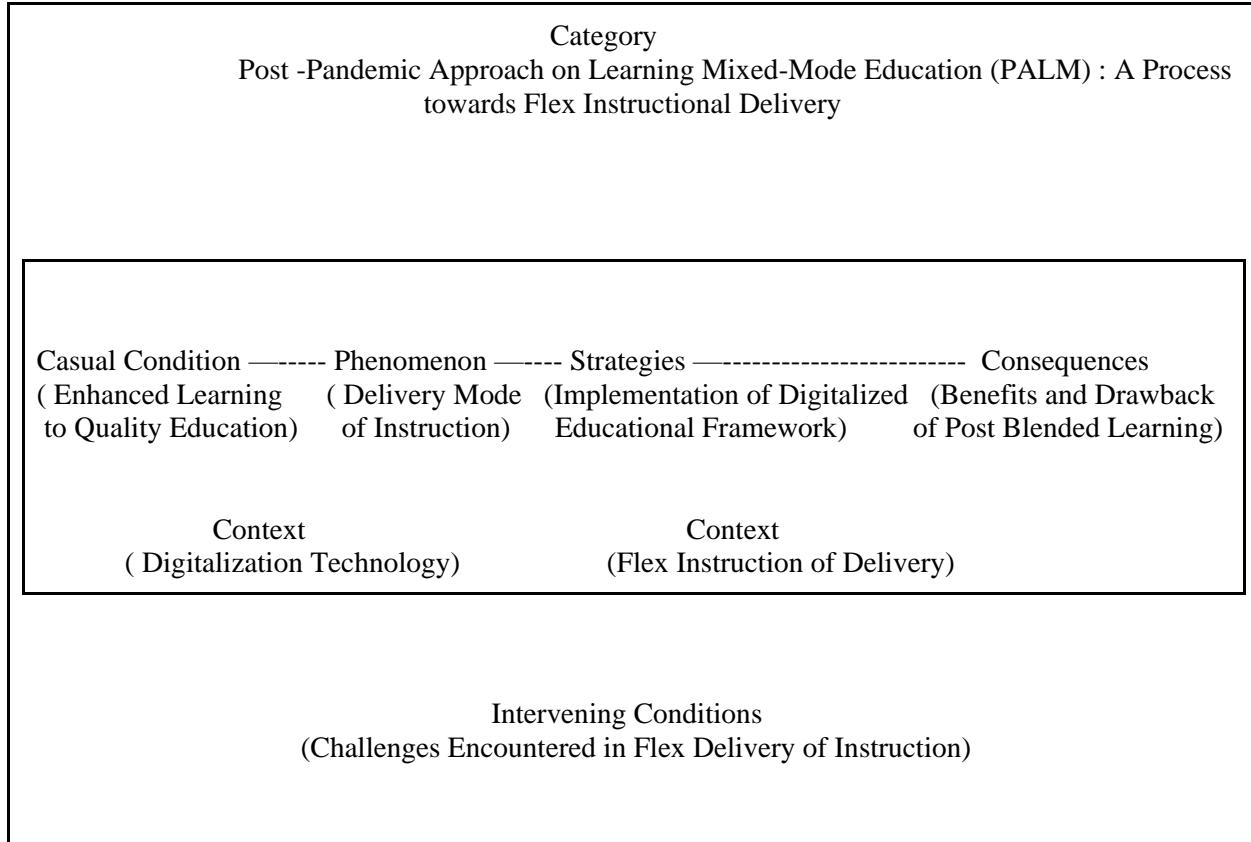- Smooth transition from the pandemic's mode of instruction, back to the face-to-face classes

Codes	Sub-Category 6: Intervention Challenges Encountered in Flex Delivery of Instruction
The lack of appropriate resources: faster net	Intervention:
Adjusting again to the new approach.	● The lack of appropriate resources: faster net
Teachers flexibility and adjusting the face to face and in-line set-up	● Adjusting again to the new approach.
Application of digital technology	● Teachers flexibility and adjusting the face to face and in-line set-up
Clarity of instructions for students' learning needs flexible set-up	● Application of digital technology
Instruction ineffectiveness of teachers	● Clarity of instructions for students' learning needs flexible set-up
Teachers who are not open for the new set-up	● Instruction ineffectiveness of teachers
Students who could not comply with the official platform	● Teachers who are not open for the new set-up
Students have no budget for internet	● Students who could not comply with the official platform
Difficulty with the scheduling	● Students have no budget for internet
Working out both for students and teachers for competency compliance	● Difficulty with the scheduling
Required teachers to meet 10 face to face meetings	● Working out both for students and teachers for competency compliance
Teachers' difficulties are the adjustment of students' preference on on-line or modular or in-person instruction.	● Required teachers to meet 10 face to face meetings
The preparation of the teacher is doubled.	● Teachers' difficulties are the adjustment of students' preference on on-line or modular or in-person instruction.
Confusion on how to equally assess the students with different modalities.	● The preparation of the teacher is doubled.
	● Confusion on how to equally assess the students with different modalities.
	.

Category

Category in table 1 is composed of 6 sub- categories namely: the phenomenon, causal condition,

strategies, consequences, context and intervening condition. A causal condition leads to a phenomenon to

occur. The research participants came up with strategies that lead to consequences which took place with some context that were influenced by intervening conditions.

Table 2. Formulation of Category on Post -Pandemic Approach on Learning Mixed-Mode Education (PALM) through a process towards Flex Instructional Delivery

Category
Post -Pandemic Approach on Learning Mixed-Mode Education (PALM) : A Process towards Flex Instructional Delivery

Casual Condition ——------ Phenomenon ——---- Strategies ——------------------------- Consequences
(Enhanced Learning   (Delivery Mode (Implementation of Digitalized (Benefits and Drawback
 to Quality Education)   of Instruction)   Educational Framework)   of Post Blended Learning)

Context   Context
(Digitalization Technology)   (Flex Instruction of Delivery)

Intervening Conditions
(Challenges Encountered in Flex Delivery of Instruction)

Post -Pandemic Approach on Learning Mixed-Mode Education (PALM) : A Process towards Flex Instructional Delivery

The Enhanced Learning to Quality Education (Causal Condition) led to our research participants adopting the Delivery Mode of Instruction (Phenomenon). "The undergraduate students who were taught using a mixed learning style of education performed better than their counterparts who were taught using traditional teaching"

> "Education instructions adopt this blended mode of education and standardize the traditional teaching pedagogy"
> "According to most, students had favorable experiences with online open-book examinations, highlighting that they would like to use this format in the future" (Shaw, 2012)

A variety of strategies were implemented, especially in implementing Digitalized Educational Framework (Strategies). "Digital fluency embraces both knowing how to use digital technology and 'knowing' how to construct ideas of significance with digital technology (Wang et al., 2012). This approach identified several benefits and drawbacks of post-blended learning (Consequences). Implementing this post-pandemic approach of mixed-mode education utilized an emergent Digitalization Technology to carry out the process of Flex Instruction Delivery (Context).

Heinonen et al. (2019) found that university teachers regarded themselves as developers of technology-enhanced learning in higher education as active, adaptive, cautious, and reluctant developers. The new paradigm approach of its transition was not easy for non-digital natives as several feedbacks were exemplified by several. Several challenges in Flex Delivery of Instruction were encountered (Intervening Conditions).

Table 2. Process of Axial and Selective Coding

Open Codes	Axial Codes (Category)	Selective Codes (Themes)
Educational Technology Ideas Digital fluency Addressing faculty's self efficacy Restrictions to travel Enhanced learnings On-line lecture On-line Assessment Synchronous Activity Asynchronous Activity Using Learning Management System Interactive resources Pre-installed application	Sub-Category 1:Causal Condition: Cause: Enhanced Learning Approach to Quality Education	Core Category: Quality Education during post-pandemic is observed through observation of learning process and digital technology.
Mixed learning style Traditional Teaching Blended Learning System On-line and off-line combination Blended Approach Remote teaching	Sub Category 2: Phenomenon Delivery Mode of Instruction	Core Category: Delivery mode of instruction provide a various type of Post-Pandemic Approach of Mixed Education applied using flex delivery of instruction

Open Codes	Axial Codes	Selective Codes

| On-line lecture

On-line assessment

Synchronous activity

Asynchronous activity

Using Learning Management

System

Interactive Resources

Pre-installed digital application | Sub-Category 3. Strategies

Strategy: Implementation of Digitalized Educational Framework | Core Category

Digital fluency advances education by implementing digitalized educational framework patterned with a hybrid mode of instruction |
| Open Codes | Axial Codes | Selective codes |

Greatest success of blended learning Technology Efficient Customized program Addressing Faculty's need Learning at their own pace.self paced part leads to the students focused Effective for adult learners Learning materials can be accessed readily Improves independent learning Introduces new technology Not all students can access the internet Lacks direct communication to teachers Communication is limited More time needed for instructional materials preparation Difficulty in attendance Switching from online to face to face cause difficulty in learning keep up with the post pandemic set up"	Sub-Category 4: Consequences: Benefits and Drawbacks of Post Blended Learning	Core Category: The adoption of flex learning is an effective, self-paced approach and smooth application of digital technology among teachers and students specifically on adult learners.
Navigate to a digital environment.	Sub-Category 5: Context Flex Instructional Delivery: PALM Approach	Core Category:

University teachers are developers of technology		The PALM Approach through the process of Flex Instructional Delivery is a digitized based mechanism coupled with advanced form of Learning Management System.
Rotational flipped, blended learning		
Redesign, redevelop, new ways, to facilitate blend-flexible education,		
Limiting technology literacy for traditional teachers	Context: Digitalization Technology	
Communication Platform: Zoom, google meet, microsoft teams		
Synchronous (on-line) and Asynchronous (offline, module) Activity, Hyflex		
Learning Management System online platform was installed		
Practices include:		
"Teacher collaborated with their co teachers"		
"Teachers call the ICT as to be assisted"		
"ICT seminars are conducted for virtual classroom to hone their ICT skills"		
" Printed and electronic learning materials, the internet for online and the classroom for face-to-face"		
Have a sense of autonomy		

over their learning experiences Face to face delivery move back to classroom Customized program for blended learning Students learn more through interactive discussion Careful planning for its implementation Challenging preparation both for face to face and on-line set-up Observing Flexibility in the class Preparation during flex delivery of instruction: "Mind setting" "Practice learning" "Seminars and workshops" "Benchmarking with other colleges My perception of this is student directed, teacher directed and environment directed. Transformational Online Training Learning every quarter, Smooth transition from the pandemic's mode of instruction, back to the face-to-face classes	Flex Instructional Delivery	

The lack of appropriate resources: faster net	Sub-Category 6: Intervention	Core Category: Customizing the program through redesigning the curriculum focuses on flexibility and Mixed-Mode Education is an intervention for the success of acquiring the outcomes of the redesigned program.
Adjusting again to the new approach.		
Teachers flexibility and adjusting the face to face and in-line set-up		
Application of digital technology	Challenges Encountered in Flex Delivery of Instruction	
Clarity of instructions for students' learning needs flexible set-up		
Instruction ineffectiveness of teachers		
Teachers who are not open for the new set-up		
Students who could not comply with the official platform		
Students have no budget for internet		
Difficulty with the scheduling		
Working out both for students and teachers for competency compliance		
Required teachers to meet 10 face to face meetings		
Teachers' difficulties are the adjustment of students' preference on on-line or modular or in-person instruction.		
The preparation of the teacher is doubled.		
Confusion on how to equally		

assess the students with different modalities.		

Memoing

Memo writing was used to extract significant themes to develop a proposition as the foundation of theory generation. While the flow of grounded theory (figure 1) is described, other pertinent approaches were observed as guidelines in theory development.

Three general methods were used to explain why and how to assess the quality of a study: evaluation of study reporting, evaluation of study conduct, and an implicit assessment of the substance and applicability of the findings to theory development (Tong, 2012). We will select the Critical Appraisal Skills Program (CASP), the most popular tool (Hannes, 2012), because it addresses all the principles and presuppositions of qualitative research (Tong, 2012). It is one of the tools the Cochrane Collaboration (Noyes, 2015) recommends and has been utilized in numerous significant theme assessments of medical topics. The data will be gathered and presented so readers can generate their own opinions about the included studies. These facts will be presented in a table with the following headings: articles, concepts revealed, study results, themes, propositions, and theories. The data analysis started with carefully reading and rereading each research (Harden, 2008).

It is an active reading that aims to stimulate and verify the information by evaluating, familiarizing, identifying, extracting, documenting, organizing, comparing, and linking it to other sources. The second step will be coding, the researchers will make a line-by-line coding book, and the codes will be categorized and grouped.

Table 3 presents the process of extracting themes which was a product of coding and categorizing data. Repeated reviews, coding, and categorizing of the properties of the data become the process of determining possible themes, which eventually led to the determination of propositions so that a proposed theory was generated.

Comparing

To ensure that each key theme caught related ideas from several articles, it entails comparing themes from various articles to match themes from one article with those from another. A list of descriptive themes that was extremely close to the data was obtained. The third step is the generation of propositions in which the judgment and insights of the reviewers play a big role. Propositions will be made to develop a theory. A developed theory aims to give an understanding of the post-pandemic blended learning approach.

To summarize, the theory will be developed in the following manner: sorted twenty (20) qualitative data relevant journals and publications and sorted down to five final screened articles. Coded, in the framework of finding contexts, arranged in categories, themes as to specific perceptions, improvised with matching propositions as to its precise declarative assertions, and finally, the theory construction.

Theoretical Sampling

Theoretical sampling is a well-known technique in grounded theory studies to gather more data based on theories derived from initial data analysis. The data was exhausted after several coding, comparisons of categories, and iterations were made. The sampling was conducted on the five deans and department heads of selected schools in the Philippines. Data gathering procedure through interview technique was utilized in the collection of data. A tape recorder was used throughout the interview. The sampling was made to supply the missing concepts for the theory generation. It underwent the process of collecting and analyzing the data to achieve saturation. The data analysis was interrupted when there was insufficient data to support one of the categories during the development of subcategories.

Table 3. Comparing of data through Themes and Proposition for the generation of Grounded Theory

Themes	Proposition	Proposed Theory	Generated Grounded Theory

Causal Condition: Quality Education during post-pandemic is observed through observation of learning process and digital technology.	Flex delivery of instruction is effective. Digital technology is a tool in the implementation of post-pandemic mixed method of education Quality Education is a requirement in the standardization of education during post pandemic in the process of delivery of flex instruction	TELEX Theory: The Enhanced Learning in Excellence Theory Theoretical Framework on the Process of Flex Blended Delivery Mode of Instruction	Theoretical Framework on the 3Rs Process of Flex Blended Mode of Instruction: Revisit, Redesign, and Reform Theory of Curriculum
Phenomenon: Delivery mode of instruction provide a various type of Post-Pandemic Approach on Learning Mixed Mode Education applied using flex delivery of instruction	The Post-Pandemic Approach on Learning Mixed-Mode Education (PALM) is flexible and provides various teaching and learning strategies. The types of delivery mode is an approach to implement the flex delivery of instruction The digital technology is a modern tool that aid in the adoption of flex delivery mode of instruction		

Strategies Digital fluency advances education by implementing digitalized educational framework patterned with a hybrid mode of instruction	Teachers' ICT literacy advances the post-pandemic teaching and learning process. Flex instructional processes advances education and cater national educational needs. The Learning Management System plays a great role in continuing quality education.		
Consequence: The adoption of flex learning is an effective, self-paced approach and smooth application of digital technology among teachers and students specifically on adult learners.	Flex learning caters students' holistic learning. Flex instruction delivery is student and teacher friendly. Flex learning approach suits best to older learners.	The Personalization Theory (personalization comes from students' ability to develop their unique learning pathways)	
Context The PALM Approach through the process of Flex Instructional Delivery is a digitized	PALM approach through flex instructional delivery is the best teaching approach to support education needs. Learning Management Systems were developed based on the		

based mechanism coupled with an advanced form of Learning Management System.	PALM approach. The process of flex instructional delivery was taken carefully to respond to the needs of the students, teachers, and education system.		
Intervention: Customizing the program through redesigning the curriculum focuses on flexibility and Mixed-Mode Education is an intervention for the success of acquiring the outcomes of the redesigned program.	The establishment of synchronous and asynchronous learning and teaching for students The emergence of digital genre curriculum. That will happen anywhere and anytime. Mixed Mode Education intervention sets strides learn without barriers of time, location and disposition with possible support of in-person engagement	3R (Revisit, Redesign and Reform) Theory of Curriculum	

Grounded Theory Generation

Theoretical Framework on the 3Rs Process of Flex Blended Mode of Instruction: Revisit, Redesign, and Reform Theory of Curriculum

Higher Education Institutions today increasingly recognize the importance and effect of online learning components and are now integrating them into their classroom instruction. This keeps students interested and saves teachers time by eliminating the need to assign activities in the classroom. In Flex Instructional Delivery, learning courses require students to participate in online quizzes and conversations alongside

attending class, which can help students be more interactive while wholly immersed in what they are experiencing.

The transition of blended learning into face-to-face marks the transformation of a new curriculum development where the flex mode of delivery of instruction, as one of the components of the teaching-learning strategy, requires a process on how this Flex approach shall be produced. The theory on curriculum describes this process to revisit, redesign, and reform (3Rs) to appropriately customize the Flex Blended Mode of Delivery of Instruction during this post-pandemic. However, due to the educational revolution, the process further requires digital fluency to carry out effectively the newly designed curriculum that calls for implementing this theory. The terms "literacy," "fluency," and "competency" are used interchangeably in literature to describe one's ability to navigate the digital environment to find, evaluate and accept or reject information (Belshaw, 2012)."

Digital fluency embraces knowing how to use digital technology and 'knowing' how to construct ideas of significance with digital technology (Wang et al., 2012). This is when the curriculum addresses the industry's environmental demands in acquiring knowledge, attitudes, and skills while engaging with this new norm of education. The digital competency embedded in the program for its outcomes clearly emphasizes the role of digital fluency to the learners before they exit and become a graduate from a certain learning institution.

The theory generated refers to the Theoretical Framework of the 3Rs Process of Flex Blended Mode of Instruction on Revisit, Redesign, and Reform of Curriculum. The curriculum content and pedagogy concern the teachers' professional practice in terms of program design and delivery. Revisiting the curriculum is a form of evaluation of how usable the curriculum is to the current educational reform. While many higher education institutions still maintain the traditional contents of the curriculum and teaching practice, it is still necessary to explore iterations of the landscape of the existing theoretical framework of education. Indeed, access to the most current research-based and experience-informed content is significant in this dynamic education.

References

Bashir, A., Bashir, S., Rana, K., Lambert, P., & Vernallis, A. (2021, August). Post-COVID-19 adaptations; the shifts towards online learning, hybrid course delivery and the implications for biosciences courses in the higher education setting. In *Frontiers in Education* (Vol. 6, p. 711619). Frontiers Media SA.

Casp, U. K. (2017). Critical appraisal skills programme (CASP). *Qualitative research checklist*, *31*(13), 449.

Gajardo, L. (2021). Education and Post-pandemic Reconstruction; Reshaping the Future of Schools in Latin America,
        h[ttps://revista.drclas.harvard.edu/education-and-post-pandemic-reconstruction/](https://revista.drclas.harvard.edu/education-and-post-pandemic-reconstruction/).

Garone, A., Bruggeman, B., Philipsen, B., Pynoo, B., Tondeur, J., & Struyven, K. (2022). Evaluating professional development for blended learning in higher education: a synthesis of qualitative evidence. *Education and Information Technologies*, 1-30.

Hannes, K., & Macaitis, K. (2012). A move to more systematic and transparent approaches in qualitative evidence synthesis: update on a review of published papers. *Qualitative research*, *12*(4), 402-442.

Jimenez, J. (2022). RETHINKING HIGHER EDUCATION IN THE PHILIPPINES IN THE POST-PANDEMIC WORLD.

Lachal, J., Revah-Levy, A., Orri, M., & Moro, M. R. (2017). Metasynthesis: an original method to synthesize qualitative literature in psychiatry. *Frontiers in psychiatry*, *8*, 269.

Nahar, J. 2020, Blended Education: A Post-pandemic Solution. True and Impartial Daily Sun. https://www.daily-sun.com/printversion/details/507919/Blended-Education:-A-Postpandemic-Solution

Noyes, J., Popay, J., Pearson, A., & Hannes, K. (2008). 20 qualitative research and Cochrane reviews. In *Cochrane handbook for systematic reviews of interventions* (p. 571).

Sharma, A. (2021). *Blended Mode of Learning is the Way Forward in the Post Pandemic Era* (No. 61). ICT India Working Paper.

Singh, J., Steele, K., & Singh, L. (2021). Combining the Best of Online and Face-to-Face Learning: Hybrid and Blended Learning Approach for COVID-19, Post Vaccine, & Post-Pandemic World. *Journal of Educational Technology Systems*, *50*(2), 140–171. https://doi.org/10.1177/00472395211047865

Thilarajah, S., & Nasendran, R. (2021) From pandemic to endemic: Examining transitions in blended learning in higher education.

Thomas J, Harden A. Methods for the thematic synthesis of qualitative research in systematic reviews. *BMC Med Res Methodol* (2008) 8:45. 10.1186/1471-2288-8-45

Topping, K. J., Douglas, W., Robertson, D., & Ferguson, N. (2022). Effectiveness of online and blended learning from schools: A systematic review. *Review of Education*, *10*(2), e3353.

Tong, A., Flemming, K., McInnes, E., Oliver, S., & Craig, J. (2012). Enhancing transparency in reporting the synthesis of qualitative research: ENTREQ. *BMC medical research methodology*, *12*(1), 1-8.

Uy, A.2020 "Blended Learning" In Virus-Hit Philippines, https://theaseanpost.com.