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RESEARCH ARTICLE

Unveiling the Benefits and Challenges of Using Printed Modules during Pandemic: Examining University Teachers' Experiences in a Higher Education Institution

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ABSTRACT

Modular distance learning and printed modules played significant roles in some higher education institutions (HEIs) with their implementation of distance education during the onslaught of the coronavirus disease (COVID-19) pandemic. They served as alternatives to traditional in-person learning, particularly in areas with limited access to technological resources. Among university teachers in these HEIs, the printed modular approach functioned as the primary instruction method, providing flexibility, allowing their students to learn at their own pace, and ensuring educational continuity. In association with modular learning, this study aimed to examine the experiences of university teachers in implementing printed modular approach instruction or printed modular distance learning during the pandemic. It determined the benefits they have gained and the challenges they have encountered in crafting, preparing, and delivering printed modules for students' use. The study involved seven teachers from Ifugao State University (IFSU)–Tinoc Campus, Tinoc, Ifugao, Philippines. They were directly involved in employing modular distance learning and crafting printed modules. Phenomenological research with semi-structured interviews was used to gather qualitative data, followed by thematic analysis. Findings reveal two major themes and six sub-themes emerging from the teachers' responses. The first theme pertains to the teaching benefits of using printed modular approach, including improved curriculum development and strategic planning, academic writing skills development, and enhanced student-centered pedagogy. The second theme reveals the challenges they encountered, such as preparing and distributing the printed modules, monitoring students' learning, and students' poor academic performances. Nevertheless, the teachers acknowledged the significance of utilizing printed modules to maintain quality education amidst distance education affected by the pandemic. The study's findings signify that the printed modules provided a reliable, albeit imperfect, way to bridge the gaps caused by the pandemic, school closures, and lack of access to technological infrastructure. Additional related studies are recommended.

INTRODUCTION

The most recent pandemic dramatically disrupted global education systems. The coronavirus disease (COVID-19) triggered widespread school closures, affected academic activities, disrupted traditional learning environments, and forced educational institutions to transition to remote and online

learning rapidly. In Higher Education Institutions (HEIs), the abrupt shift of university operations had affected: (a) administrations (Benito et al., 2021; Geryk, 2023; Zafitsara & Velo, 2022), (b) non-academic staffs (Benito et al., 2021; Geryk, 2023), (c) teachers (Altwaijry et al., 2021; Benito et al., 2021; Broadbent et al., 2023; Casacchia et al., 2021; Hayashi et al., 2020; Zafitsara & Velo, 2022), (d) students (Altwaijry et al., 2021; Aristovnik et al., 2021; Benito et al., 2021; David et al., 2022; El Said, 2021; Hayashi et al., 2020; Hosen et al., 2022; Izgi Onbasili & Sezginsoy Şeker, 2021; Martirosyan et al., 2022; Mazurek, 2022; Özüdoğru, 2021; Saha et al., 2023; Stankovska et al., 2022; Velásquez-Rojas et al., 2022; Zafitsara & Velo, 2022), and, (e) other stakeholders (Benito et al., 2021; Cai et al., 2022; Geryk, 2023; Wang & Sun, 2022; Yaylak, 2022).

Amidst this, various measures were implemented to guarantee the continuity of academic learning and development. Relevant teaching and learning methods and strategies were adapted as a substitute for in-person classes. These enforced worldwide HEIs to conform with distance education (Addimando, 2022; Al-Karaki et al., 2021; Al-Mawee et al., 2021; Altwaijry et al., 2021; Elfirdoussi et al., 2020; Karadag et al., 2021; Masalimova et al., 2022; Yazgan, 2022) as vital alternative to traditional in-person learning, enabling them to continue delivering lessons despite school closures.

The adoption of distance education has become an increasingly common educational alternative and a key contributor to the newly competitive landscape in HEIs. Distance education encompasses any form of learning that takes place when students and teachers are not physically present in the same location and primarily rely on digital technologies to facilitate learning and instruction (Johnston, 2020; Saykılı, 2018). The philosophy of distance education is based on students' autonomy, with the least necessary in-person or face-to-face interaction with their teacher and the largest possible amount of individual learning materials specially produced to simplify learning without contact with the teacher (Saykılı, 2018). Online learning or e-learning and modular learning are ways to deliver distance education. Online learning in education uses digital platforms and technologies to deliver educational content and facilitate student learning outside of traditional classroom settings. It offers flexibility by allowing students to access materials, participate in discussions, complete assignments, and engage in assessments at their own pace and from anywhere in the world. This form of learning can be asynchronous, where students learn independently on their schedule, or synchronous, where they attend live sessions (Dhawan, 2020).

Meanwhile, modularization, modular approach, or modular learning in education corresponds to a teaching and learning strategy where the curriculum is divided into distinct, self-contained units or modules, each focusing on a specific topic, skill, or concept (Dejene & Chen, 2019; French, 2015). It is commonly observed that modules in academic institutions can be designed in varied formats, such as online or web-based and hard copy or print-based. Regardless of format, these modules are designed to be flexible and can be completed independently, allowing students to progress at their own pace. Each module typically includes learning materials, activities, assessments, and resources that target a particular learning outcome. Using a modular approach in universities during the COVID-19 pandemic proved to be a crucial strategy for maintaining educational continuity while adhering to health and safety guidelines, ensuring broader educational access and equity. By breaking down courses into smaller, self-contained modules, universities were able to offer more flexibility and adaptability in the delivery of education.

For most universities with good technological and internet infrastructures, their teachers have adopted online classes as the primary method of instruction (Al-Karaki et al., 2021; Altwaijry et al., 2021; Benito et al., 2021; Hayashi et al., 2020; Yaylak, 2022), rapidly modifying their curricula and teaching methods to suit online learning. However, for some HEIs, adapting to online distance

education during the pandemic was challenging for its academic staff. While most thrived with online education, other teachers faced significant challenges, including limited access to technological infrastructures (Hayashi et al., 2020; Mestry, 2023; Sari & Nayır, 2020; Yaylak, 2022), unstable internet connections (Hayashi et al., 2020; Mestry, 2023; Sari & Nayır, 2020), and inadequate distance educational technology teacher trainings (Casacchia et al., 2021; Hayashi et al., 2020; Hietanen & Svedholm-Häkkinen, 2022; Mestry, 2023; Sari & Nayır, 2020). This caused teaching struggles in supporting the sudden, large-scale shift to online education. Alongside their teachers, many students also faced significant barriers to accessing online learning, such as limited access to reliable internet connections (Altwaijry et al., 2021; Benito et al., 2021; Bustillo & Aguilos, 2022; David et al., 2022; El Said, 2021; Hayashi et al., 2020; Hosen et al., 2022; Karadag et al., 2021; Özüdoğru, 2021; Saha et al., 2023; Tugano et al., 2022; Yaylak, 2022; Zafitsara & Velo, 2022) and digital devices (Bustillo & Aguilos, 2022; Hayashi et al., 2020; Hosen et al., 2022; Karadag et al., 2021; Mestry, 2023; Özüdoğru, 2021; Saha et al., 2023; Yaylak, 2022; Zafitsara & Velo, 2022).

Due to the challenges of online learning, some universities resolved to use modular distance learning or modular approach (Celeste et al., 2024; Garingan, 2023; Kuzu et al., 2022; Mestry, 2023). The modular approach was crucial for university students to maintain their academic progress amidst uncertainty and disruptions. It allowed students to engage with course content in smaller, more manageable segments. It helped students maintain focus and pace, even with limited access to educational resources. This helped maintain academic rigor and provided more personalized learning experiences, as students could revisit modules if needed or accelerate their learning if they felt confident. It empowered students to take control of their learning experience during the pandemic (Bustillo & Aguilos, 2022; Celeste et al., 2024; Garingan, 2023; Mestry, 2023; Tugano et al., 2022).

On the part of the university teachers, the modular approach during the pandemic provided a practical and efficient way to adapt to the sudden shift and challenges of remote teaching (Kuzu et al., 2022; Mestry, 2023; Nolasco, 2022). It allowed them to design, write, and deliver lessons, making transitioning from traditional to distance education easier while maintaining coherence in the curriculum. In most cases, modular learning enabled teachers to track student progress and adjust content delivery effectively. This approach also provided flexibility in course design, allowing teachers to incorporate a variety of multimedia, interactive tools, and assessments that could be tailored to different learning styles, ensuring that students could continue to learn in a meaningful way. It facilitated a more manageable workload and lesson management.

In the Philippines, the Commission on Higher Education (CHED) supported the implementation of flexible learning models and other alternative learning models for HEIs during the onset of the pandemic (CHED, 2020a, 2020b, 2020c). With this, the majority of the Philippine HEIs saw opportunities and spurred innovations in their education delivery through online learning models. However, the transition was uneven for some HEIs due to disparities in access to technology and the internet, particularly in rural or underserved areas, which left many students struggling to keep up with their lessons. The universities that experienced constraints and challenges in online instruction relied on printed modules as key components of their shift to distance education (Bustillo & Aguilos, 2022; Nolasco, 2022; Tugano et al., 2022). With many areas facing limited or unreliable internet access, printed modules became essential to bridge the digital divide. The printed modules allowed students to participate in continuous and personalized learning.

LITERATURE REVIEW

Theoretical Framework

The use of a modular approach closely aligns with constructivism. Constructivism is a learning theory that emphasizes the active role of learners in constructing their own understanding and knowledge through experiences and interactions with the world around them (Bada, 2015; Holmes, 2019). Constructivism suggests that learners do not passively absorb information. Instead, they build new knowledge based on their prior experiences, ideas, and interactions with their environment. When teachers write modules in a constructivist framework, they essentially design learning experiences that foster students' autonomy, self-directed learning, active engagement, critical thinking, problem-solving, and reflection. They are promoting students' active engagement and facilitating personalized and student-centered experiences. This allows students to engage with lesson content actively rather than passively absorbing information. During the pandemic, teachers ensured the modules were written to encourage students' exploration, collaboration, and inquiry, focusing on real-world applications and authentic tasks. The modular approach offered flexibility, enabled students to learn at their own pace, and made connections between new knowledge and prior experiences within an environment that promotes deeper personalized learning. Constructivism helped teachers create meaningful, student-centered modules that facilitated deep, active learning despite the challenges posed by the pandemic.

One instructional model that can support modular approach is Distributed Learning or Spaced Learning. Distributed learning "refers to learning schedules in which repetitions of the information to be learned is distributed over several learning sessions instead of learning in only one session" (Greving & Richter, 2019). Another description entails that "the material to be learned is distributed over a long period of time so that the learner must integrate the various separated parts of material into a unique entity" (Kirkley, 2012). Based on these descriptions, it can be derived that distributed learning focuses on the idea that learning can occur in various environments over time, not necessarily in a single, continuous block. The teachers' use of modular approach during the pandemic supported distributed learning by breaking down the curriculum into smaller, discrete units that can be learned over time and across different contexts. This allowed their students to spread their study over time, revisit their modules, practice skills, and reinforce concepts in various settings, enhancing long-term retention. Instead of overwhelming students with long, continuous lessons, the teachers' modular units allowed learning to be spaced out, improving students' retention and understanding.

The Universal Design for Learning (UDL) is another model that relates to the use of a modular approach among teachers during the pandemic. UDL is an educational framework aimed at making learning more accessible and effective for all students, regardless of their abilities or backgrounds (Almeqdad et al., 2023; Espada-Chavarria et al., 2023). It is based on the idea that a one-size-fits-all approach to teaching does not meet the diverse needs of learners. Instead, UDL advocates for creating flexible learning environments and curricula that can be customized to accommodate a wide range of learning styles and abilities. The modular approach allowed the teachers to design lesson content that was flexible and adaptable to the diverse needs of their students. They have crafted their modules that can be structured to provide multiple means of engagement, representation, and expression, ensuring that students with different learning styles, abilities, and backgrounds can access and succeed in the learning experience. Though the teachers used printed modules, supplementary learning resources in multiple formats, such as recorded videos of teacher discussions and other audio-visual materials, were also provided, allowing students to engage with the modules in ways that suit their individual learning preferences, making learning more inclusive.

Online Modular Approach and Printed Modular Approach in Some HEIs

Nolasco (2022) discovered that college instructors from a HEI in the Philippines experienced varied difficulties in preparing printed modules. The instructors conveyed that they lack resources regarding reference materials and other relevant resources. Though there were e-books, the available books were inadequate, and some were outdated. Weak internet connection as alternative resources affected the instructors' module crafting. The instructors' lack of related training or in-depth discussions affected how they wrote their modules. Making the lessons understandable or comprehensible to students was hard due to issues in simplifying the module's lessons. No module reviews were conducted to ensure content quality. Nolasco (2022) also found that the instructors dealt with problems in module preparation, reproduction, and module distribution. They lack printing materials, equipment, and transportation resources. They could not reach out to some of their students due to the absence of an internet connection and phone signals due to their remote residences. They felt stressed due to student issues of submitting their modules in due time.

Mestry (2023) identified that academic staff from various South African HEIs experienced a lack of support in their sudden adoption of an online modular approach during the pandemic. They expressed their lack of experience implementing the approach, stress, and exhaustion. To aid the teachers, their university provided technological support and high regard for continuing professional development programs related to modular online learning. Mestry (2023) determined that the academic staff underwent several trainings and workshops on using various online platforms and innovative, user-friendly tools and technologies. Their university established support groups and were continuously provided with active academic support.

Kuzu et al. (2022) university respondents from a state university in Turkey divulged that using an online modular approach enabled their students to be cautious and prepared for their requirements. The teachers focused on the learning targets and outcomes that were brief and achievable for students. Assessments were more systematic. The approach made their instruction more reasonable. However, Kuzu et al. (2022) noted that the teachers' workload increased due to the modular approach and that they had to perform extra duties. It aggravated their academic calendar and added tasks, particularly in conducting student assessments. They also have to cover the coursebook contents for a short period. These caused their summer breaks to be shortened. Kuzu et al. (2022) determined that some students lacked a sense of academic responsibility, according to the teachers. Considering that the modular approach during the pandemic promoted autonomous learning since the students had to study at home, most were often unprepared and did not do their activities. Some students did not have access to technological equipment, and some could not read emails or messages. This caused communication issues between the teachers and their students, affecting the learning process. Nonetheless, most of the students performed well. Additionally, Kuzu et al. (2022) teacher respondents raised concerns regarding assessment and students' academic performance. Since they were using online, monitoring tests was difficult and not applicable sometimes. Some of the students submitted activities with plagiarized answers for completion purposes.

Bustillo and Aguilos (2022) determined that students from a state university in the Philippines were confronted with retrieving and submitting their printed modules. They attributed these problems to several factors. One factor was the rural location of the university, affecting immediate access. Some students lived in remote places away from the university. With the pandemic, students experienced traveling and transportation issues. Another factor was related to the students' far, remote residences affecting their access to an internet connection. Students could not access the internet and struggled to look for online resources to aid in answering their modules, contributing to their noncompliance with tasks. Students' location also affected phone signals for messaging applications. This made contacting students difficult and affected communication between teachers and their

peers. Aside from location and weak internet, Bustillo and Aguilos (2022) added that the university and students' locality frequently experienced power interruption, which contributed to students' task completion. Some students indicated that some lesson contents were difficult to understand and that instructions were unclear. Students stipulated that they were overloaded with modules and were overwhelmed and stressed, affecting their completion and submission.

Tugano et al. (2022) found out that university students expressed satisfaction regarding the modules that were provided to them, following a modular approach in a state university in the Philippines. The students were satisfied with the module's learning outcomes, expressing that it was specific and attainable. The module consisted of well-organized topics, sufficient activities, and simple language. The students were satisfied with how the lessons were presented and discussed. However, the students suggested enhancing the modules to be more comprehensive by adding other related lessons. Tugano et al. (2022) determined effective communication between the teachers and their students. Most were done through online messaging. Timely responses and feedback were provided for query and monitoring purposes. Though, communication was still hindered by weak internet connectivity.

A part of the study by Garingan (2023) found that most students in a state university in the Philippines strongly agreed that they received clear information and instructions on the modules prepared by their teachers regarding their use of the modular approach. The students considered the modules simple, interesting, intellectually exciting, and well organized, and clear assessment tasks and scoring criteria were provided. This contributed to the students' ease of learning the lessons. Garingan (2023) found that the students were generally satisfied with the quality and contents of the teacher-prepared modules.

Celeste et al. (2024) determined that university students perceived almost no difficulty in reading and understanding the modules' lesson contents prepared by their teachers in their implementation of the modular approach. These students from a state university in the Philippines had the least difficulty understanding the module's instructions. They experienced minimal difficulty answering the modules' activities aligned with the learning outcomes. Celeste et al. (2024) indicated that some students found the modules interactive and engaging.

Context of Printed Modular Distance Learning in the Local HEI

In response to the call of CHED to implement alternative learning models to ensure and maintain quality education, the local HEI, Ifugao State University (IFSU)–Tinoc Campus, adopted the usage of printed modules in their implementation of modular distance learning. Particularly in Tinoc Campus, the university and campus officials, faculty members, staff, students, and other stakeholders mutually agreed to use printed modules as the primary instructional approach to facilitate students' learning during the pandemic. The Campus and its stakeholders largely supported this approach due to several factors, including geographical location, weak internet connection in the locality, lack of internet infrastructure on the Campus, and instantaneous changes in health and safety protocols. Faculty members also expressed that printed modules were the most practical, accessible, and cost-effective, promoted learning equity and presented the most adaptability among them and their students.

The Campus assured that the modules align with the University's Vision, Mission, Goals, and Objectives (VMGO), serving as critical learning tools for maintaining academic continuity and ensuring that its core values could still be upheld despite the challenges. IFSU envisions itself to become "a globally recognized University upholding excellence amidst rich cultural heritage," with its mission to "produce employable graduates who are morally upright, socially and culturally

responsible professionals through quality, relevant, and innovative instruction, research, extension, and resource generation" (IFSU, 2024). Moreover, IFSU operates with its aims for academic excellence, strong research leadership and culture, sustainable extension and community engagement, and excellent public service and good governance.

Amidst the pandemic, the use of the modular approach of IFSU reflected its unceasing support and observance of the Sustainable Development Goals (SDGs) adopted by the United Nations (UN) in 2015. Aligning closely with several SDGs (United Nations Development Programme [UNDP], 2024), the modular approach allowed the University to provide more nimble responses to address immediate needs while maintaining long-term goals. Primarily, the modular approach was central to the University's responses in continuing to provide quality education, echoing SDG 4: Quality Education. With subject courses divided into smaller, digestible modules, it ensured that students could continue their education without interruption. The University provided continuing professional development programs among its faculty members for crafting their modules, guaranteeing standard lessons and activities, and maintaining academic integrity. For SDG 3: Good Health and Well-being and SDG 6: Clean Water and Sanitation, in cases where the local government unit (LGU) lifted community quarantines and students were allowed to visit the Campus, health, and safety protocols were strictly and consistently practiced during the distribution and submission of printed modules, safeguarding students' health and wellness. Soft copies of the modules were sent as an alternative if not allowed. Alongside the student services unit providing remote counseling, faculty members constantly monitored students' modular activities, reforming requirements and adjusting submission dates, minimizing students' academic stress.

Anent to SDG 5: Gender Equality, the contents of the modules were crafted appropriately to eliminate gender bias and stereotypes that could represent gender inequality and harmful gender dynamics. Instead, the modules actively highlighted diverse gender representations and gender roles. Likewise, for SDG 10: Reduced Inequalities, the Campus ensured that the students, regardless of their socioeconomic backgrounds, had equal access to the modules and supplementary learning resources. Printed modules eliminated the so-called digital divide and the gap between students with access to the internet and technology and those without access. This mirrored inclusive education, allowing the students the same access to learning opportunities and quality of education as their peers. Conforming to SDG 9: Industry, Innovation, and Infrastructure, the University accelerated the digital transformation of the Campus to support the modular approach. Digital and internet infrastructures were strengthened to support faculty members' module crafting and module printing reproduction. Concerning SDG 7: Affordable and Clean Energy, SDG 11: Sustainable Cities and Economies, SDG 12: Responsible Consumption and Production, and SDG 13: Climate Action, the faculty members observed energy-efficient measures and waste reduction strategies using printed modules. This included using printing equipment plugged into solar panels, recycling papers, minimal use of folders and envelopes, and eco-friendly printing inks.

Furthermore, aside from the continuing professional development provided by the University, the versatility of crafting modules provided the Campus teachers opportunities to conduct research despite abrupt shifts during the pandemic, which carries on up to date. The teachers were able to collaborate with their students and scholars from other institutions and conduct and publish several empirical studies (Bando et al., 2024; Bawingan et al., 2024; Canuto, 2023; Canuto, Choycawen, et al., 2024; Canuto & Espique, 2023; Canuto, Lumidao, et al., 2024; Canuto, Pagdawan, et al., 2024; Fabillar et al., 2024; Ildefonso & Lumidao, 2022; Libiado & Canuto, 2023; Lumidao, Bando, et al., 2024; Lumidao, Espique, et al., 2024). Their research endeavors, several paper presentations, and published papers help instill a strong research culture among their students, colleagues, institutions,

and other stakeholders. This kindles as one of the University's cornerstones for improving teaching quality, academic innovation, advancement of knowledge, societal progress, and institutional growth.

THE CURRENT STUDY

Research Gap

The distance education approach, online learning, and modular learning gained traction and significant prominence during the COVID-19 pandemic, particularly as responses to the sudden shift from traditional classroom learning to remote education. HEIs had to rapidly adapt to distance education, allowing for efficient, structured, and continuous delivery of quality education. While some HEIs used online learning, others resolved to use modular learning in their instruction. This approach allowed students to access learning materials remotely, ensuring they could continue their academic pursuits without significant disruptions. In this context, related empirical studies outpoured and became crucial for understanding the effectiveness, challenges, and broader implications of employing distance education, online learning, and modular learning among HEIs. There were numerous studies regarding online learning during the pandemic and its impact on students, teachers, and their universities.

On the other hand, there are limited studies about the context of modular learning (Bustillo & Aguilos, 2022; Celeste et al., 2024; Garingan, 2023; Kuzu et al., 2022; Mestry, 2023; Nolasco, 2022; Tugano et al., 2022), specifically the use of printed modular learning in HEIs (Bustillo & Aguilos, 2022; Nolasco, 2022). There is a notable research knowledge gap on university teachers' experiences in crafting, preparing, and delivering printed modules. This presents an insufficient understanding of how the approach affected university teachers' professional development, teaching pedagogy, and other instructional concerns.

Research Aim and Research Questions

The study aimed to examine the experiences of university teachers in implementing a printed modular learning in their instruction during the wake of the pandemic. It further aimed to determine the benefits they have gained and the challenges they have encountered in crafting, preparing, and delivering printed modules for students' use. The following questions guided the study:

1. What are the university teachers' perceptions in crafting, preparing, and delivering printed modules during the pandemic?

2. What are the benefits gained and challenges the university teachers encountered in employing printed modules?

Research Significance

Though the COVID-19 pandemic subsided and traditional, in-person classes resumed, examining the experiences of HEI teachers using printed modules at the height of the pandemic is crucial for understanding how educators adapt to and navigate the challenges of modular learning. As universities increasingly utilize modular approaches, analyzing teachers' experiences provides valuable insights into the effectiveness of these methods from their perspective. As HEIs increasingly embrace flexible and remote learning models, understanding the teachers' perspectives is essential for refining the effectiveness of this approach. Such research can uncover insights into how teachers design and implement printed modular lesson contents, manage student engagement, and assess learning outcomes, as well as the support structures they need, such as training, resources, or technological assistance. By exploring these experiences, the researchers hope this study can provide valuable glimpse and insight into improving teaching practices and curriculum designs, addressing

barriers, and enhancing the overall quality of education in modular learning environments, ensuring that teachers and students benefit from these evolving educational models among HEIs.

METHODOLOGY

Research Design

This study utilized qualitative, phenomenological research to examine the experiences of university teachers in employing a modular approach, crafting modules, and using printed modules to support students' continuous education during the wake of the COVID-19 pandemic. Phenomenological research explores and understands how individuals experience and make sense of a particular phenomenon (Alhazmi & Kaufmann, 2022; Neubauer et al., 2019). In this study, the researchers aimed to capture and describe the essence of the teachers' lived experiences, attempting to reveal the meanings and structures of adopting a printed modular approach as they perceived them. A semi-structured interview was employed to explore and collect data regarding the teachers' lived experiences. This allows for flexibility in the interview process while maintaining some structure to guide conversations, enabling rich, in-depth data collection while still allowing the researcher to focus on key areas of interest (Bearman, 2019; DeJonckheere & Vaughn, 2019). The researchers prepared a set of open-ended questions or topics in advance regarding the teachers' printed modular approach, serving as a guide for the interview. It also offered a flexible order of questions, where the researchers were free to explore the topics in more depth depending on the teachers' responses.

All of the interviews were recorded and transcribed. These transcriptions transformed the verbal data into written form, making it accessible for thematic analysis and coding. It also made data more accessible for review and editing. Since most interview conversations used the teachers' local dialect, transcriptions were translated into English language. Thematic analysis was used to analyze the results. It involves identifying, analyzing, and reporting patterns, themes, or codes within the data (Naeem et al., 2023), making it a powerful tool for extracting meaning from interview data. This allowed the researchers to organize and describe the data set in rich detail, providing insights into teachers' experiences. The researchers also applied bracketing when conducting this study, referring to the process by which a researcher sets aside their preconceptions, biases, and assumptions to more objectively understand and interpret the experiences and perspectives of participants (Alhazmi & Kaufmann, 2022; Bonyadi, 2023). With bracketing, the researchers gathered and analyzed data with an open mind, capturing the teachers' experiences without being influenced by their beliefs or previous knowledge.

Participants

Through purposive sampling, seven university teachers from IFSU–Tinoc Campus, Tinoc, Ifugao, Philippines, were involved in the study from March to June 2024. They comprised three male and four female teachers. They were selected based on their direct and first-hand experience with modular distance learning and the use of printed modules during the pandemic. For each of the three consecutive academic years, 2020–2021, 2021–2022, and 2022–2023, the university teachers were crafting at least three printed modules for students' use. The teachers prepared printed modules covering general and major subjects for Bachelor of Elementary Education (BEEd), Diploma in Agricultural Technology (DAT), and Bachelor of Agricultural Technology (BAT) programs. The small number of university teacher participants reflects the low student population and few academic staff on the Campus. The overall teachers' experience crafting, preparing, and delivering printed modules was considered. Their experiences crafting printed modules for specific course subjects were not

scrutinized since it may pose limitations on the depth and breadth of the insights gathered from the teachers' small population.

Procedures

The study began by obtaining approval from the researchers' institutional affiliation. To ensure the trustworthiness of the guide questions to be used in the study, the researchers requested feedback from their colleagues in other nearby HEIs who taught Professional Education course subjects for Teacher Education and have attended trainings and workshops related to writing modules and modular approach. Then, informed consent was solicited from the university teachers seeking voluntary participation in the study. With their approval, interview schedules and venues were set. Beforehand, the university teacher participants were assigned letters and number identifiers from P1 to P7. During the interviews, guide questions were used. Bracketing was strictly observed. The researchers used their smartphones to record the interviews, which lasted about half an hour. Aside from interview recordings, the researchers took notes, capturing key points from the responses.

Afterward, the interviews were manually transcribed and translated into the English language. Most of the translations were edited for clarity while preserving the meaning of the participants' responses. To ensure accuracy, the researchers sought help from a colleague fluent in the respondents' local language and an English language expert for review and checking. The transcriptions and their translations were then returned to the respondents for validation. Upon validation, thematic analysis of the responses followed through. Due to a lack of resources, the researchers manually coded the data into themes that emerged from the interviews. Based on the thematic analysis, the researchers interpreted the findings based on the research aims and questions. The findings were presented into main themes and sub-themes with rich descriptions and direct participant quotes to illustrate key points.

Data Analysis and Management

The study used thematic analysis and researchers' manual coding of data. To familiarize themselves, the researchers read and re-read the validated transcribed and translated responses to get a sense of the content. Codes were generated, followed by looking at and organizing themes. The themes were refined for articulation, clearly describing what each theme represents based on the research aims and questions. Modified quotes based on the university teacher participants were added to vividly convey the participants' experiences, support the themes, and illustrate the points being made. In managing the study's data, each interview recording was specifically labeled with the participants' letter and number identifiers to ensure easy retrieval and tracking. Aside from their smartphones, the researchers saved copies of the interview recordings in safe folders on their laptops. The responses were manually transcribed and translated into editable document formats and saved in a different folder, serving as a database. Once the analysis was complete, the researchers securely stored all interview recordings and relevant data in accessible locations and devices for future reference. The researchers used their personal digital data backup and sent copies to their Campus library as repository.

Ethical Consideration

The researchers sought approval from the research ethics committee of their institutional affiliation regarding the conduct of the study. Permissions were sought from the University and Campus

officials. The consent letters given to the participants explained the scope of the study, the voluntary nature of their participation, how their data will be used, any potential risks or distress they might encounter regarding the study, and their right to withdraw at any time without consequences. For transparency, the transcribed, translated, and modified responses were sent back to the participants for approval. The researchers assured the participants' confidentiality and anonymity in the study. Any participants' identifiable information was removed, and other identifiers were used to protect their privacy. All digital data were backed up and stored in secured files and folders. Also, the transcriptions were stored in locked cabinets. Digital data was backed up in several storage clouds to prevent loss.

FINDINGS

Based on the analysis, two major themes and six sub-themes emerged from the university teachers' responses regarding their use of the printed modular approach. The major themes include (a) teaching benefits of using the printed modular approach and (b) challenges experienced in implementing the printed modular approach. The teachers' overall perceptions are embedded in the sub-themes.

Teaching Benefits of Using Printed Modular Approach

The benefits the university teachers gained highlight the impact of the printed modular approach in their teaching profession. It became a powerful pedagogical strategy that offered several advantages during the pandemic. These benefits include (a) better course design and strategic planning, (b) academic writing skills development, and (c) enhanced student-centered pedagogy.

Improved Curriculum Development and Strategic Planning

Using the modular approach to teaching and learning affected the university teachers' ability to modify curriculum and course design better and strategically plan for the delivery of learning modules. The teachers shifted their focus, acknowledging the limitations of in-person instruction. P1 learned to create plans that strategically addresses the unique learning situation. P5 focused more on defining specific, measurable learning outcomes for each module, making their courses more organized and transparent to students. P6 developed a stronger ability to adapt subject courses from in-person to modular. As they shared:

P1: "I was happy because I was able to create plans based on our Campus' strategies. We identified areas where we could drop these modules, and students could also get these modules from these dropping areas and then on scheduled days."

P5: "I was forced to design curriculum and courses with a clear and logical structure, including learning outcomes and activities."

P6: "I was able to modify the lesson contents to suit the modular approach. So aside from in-person classes, my lessons were already applicable in a modular format."

Academic Writing Skills Development

The crafting of modules affected the university teachers' academic writing skills development. They could write comprehensive lesson contents, clear and concise instructions, and richer activities and assessments. P4 emphasized the importance of having a clear and focused mind as part of the commitment to writing the modules. P2 shared the need to read diversified resources for reliable and factual content. The need to use proper referencing was also practiced to show that the work is based on a solid foundation and to avoid plagiarism. They indicated:

P4: “I must have a clear and focused mind when writing my modules. It enabled me to have fewer mistakes and ensured that the contents were organized, correct, and reliable.”

P2: “I need to read a lot of resources. Aside from books, I read online articles and journals. This improved my understanding of the lesson I was writing. I also used these resources to develop varied and engaging student activities.”

Enhanced Student-centered Pedagogy

The modular approach allowed the university teachers to craft printed modules that catered more effectively to their diverse student needs. P3 and P5 became more attuned to flexibility and differentiating instruction, offering supplemental resources for students who needed extra support or enrichment. This fostered students' self-paced learning and a more personalized learning experience. They conveyed:

P3: "I was able to craft a more student-centered module. I simplified the lessons for the ease of self-paced learning of the students. Aside from that, I was able to provide other resources that they could use to help them easily understand the lessons."

P5: "I was able to adopt flexible arrangements related to the modules. I structured the arrangement of the lesson contents, activities, and timelines to help the students' pacing."

Challenges Experienced in Implementing Printed Modular Approach

While the printed modular approach was worthwhile and served as the primary learning approach during the pandemic, the university teachers encountered challenges adopting it. They struggled in (a) the preparation of printed modules, (b) the distribution and retrieval of printed modules, and (c) students’ poor performances.

Preparation of Modules

Lack of Knowledge and Unclear Guidelines in Crafting Printed Modules

The lack of knowledge and unclear guidelines were among the main factors that affected the university teachers’ crafting of modules. They were not very prepared for the sudden shift to modular distance education. P1 admitted they lacked the necessary skills to design modules that could engage students and facilitate independent learning. P4 noted a lack of guidelines from the university regarding the modules' format, module models, and packaging. The teachers affirmed:

P1: “I must admit that I was not ready to write. I did not have enough knowledge and skills to make modules. It was also hard to design activities that were engaging and congruent with the lesson contents.”

P4: “There was no defined format in writing the modules. How will we write it? Even if we were given academic freedom, having guidelines was still beneficial. It makes uniform formatting of modules.”

Scarcity of Resources

Having scarce resources impacted university teachers’ ability to craft modules. P3, P5, and P7 indicated limited books and journals in the library. The internet connection at the university was also not good. The teachers heavily relied on what was available to them. Sometimes, they need to travel to other places with solid internet connections to access online resources. They expressed:

P3: "There were limited resources in the library. Also, it was hard to access the internet in the locality. That was why I instantly download resources once I can access a strong internet connection in other places when I can travel."

P5: "There were not enough books in the library where I could source out my modules. Also, there were not enough other printed and offline resources."

P7: "There were few books in the library related to the subject course I am writing my modules of."

Work Overload

P1 and P7 shared that they have a significant amount of teaching workloads, exacerbated by the clerical work and relevant work related to the preparation of modules. These conditions, coupled with module distribution, constrained the effective implementation of the modular approach. They voiced-out:

P1: "I was not only focused on instruction. I also have designation and office to handle. Aside from teaching, I have clerical tasks to do."

P7: "I have handled six course subjects at that time. So, I struggled to prepare that number of modules for a short period."

Distribution and Retrieval of Printed Modules

Late Claiming of Modules

Despite university teachers' efforts to distribute modules efficiently, student access and retrieval challenges emerged. There were instances where students could not claim their modules and obtain them later. According to P3 and P6, even though this was a problem, it was understandable due to quarantines, travel restrictions, and the distant house addresses of the students. They commented:

P3: "Due to weak internet connection, most modules were printed and packaged for distribution. However, some of the students had a hard time claiming their modules on time. In most cases, this was due to travel restrictions and quarantines caused by the pandemic. Some of the students also lived too far from the university."

P6: "Aside from the printed copies, soft copies of the modules were also provided to the students, who could print them personally. These soft copies were uploaded in group chats. Though, some students were late accessing it due to poor internet signal."

Late Submission of Modules

P1, P2, P4, and P5 identified that some students were late submitting their completed modules. These students were not able to submit their outputs on time. When this happens, the university teachers indicated that it caused a high volume of module outputs to be checked and can be stressful and frustrating to them. Nevertheless, the teachers still accept the students' late submissions due to considerations of the pandemic. They attested:

P1: "Mostly, students were late submitting their output and returning the answered modules. However, I still accepted their outputs with no demerits considering the circumstances affected by the pandemic."

P2: "Even with constant reminders, some students did not submit their modules on time."

P4: "Most of my students were late submitting their outputs in one of the course subjects I was handling."

P5: "I gave considerations to late submissions and accepted it. Though, I asked the students to give me reasons for monitoring purposes."

Monitoring of Student's Learning

Difficulty Validating Students' Academic Progress

P1 expressed concerns about their struggle to effectively monitor student learning and validate their progress in the modular approach. They emphasized their need for varied assessment strategies and feedback mechanisms. It was tough for the university teachers to ascertain the individual academic progress of their students. As articulated:

P1: "It was really difficult to know if my students were answering their modules and doing their outputs by themselves. It was hard to validate students' answers since I have no means to monitor them directly and personally."

Lack of Effective Communication and Student Engagement

University teachers' effective communication with their students posed a significant challenge. This was due to several factors, such as limited access to technology, unreliable internet connections, and periodical student engagement. P2 described difficulties in reaching students via messaging and phone calls. P3 experienced challenges in using group chats. In both cases, students were unresponsive. They claimed:

P2: **"**They cannot be reached often, even if you call them. They may be in places where the signal was weak or no signal. So, even if I want to reach them by phone, I really can't."

P3: "Even if we had created group chats where I asked them about their progress and modules, some students did not reply."

Students' Poor Performances

Unsatisfactory Answers

P2, P4, P5, and P6 noted a disconnection between the learning objectives, the desired depth of understanding of the lesson, and the actual student responses. P2 observed shallow answers from students, especially those that needed elaboration. P4 noted unsatisfactory levels of answers even if the rubrics were provided. P5 noted students' limited analysis of the lessons. P6 expressed that some students' answers were disappointing, even if the lessons were simplified with varied examples.

P2: "I noticed that some of the student's answers were too light and did not correspond with the lesson objectives. Their discussions in essay questions did not reflect a deep understanding of lessons."

P4: "Most of the answers were not satisfactory. It was not what I would want from my students."

P5: "It seems that their level of analysis was limited to their superficial understanding of the lessons."

P6: "Some students' answers were disappointing. It did not reflect the achievement of the lesson objectives."

Unanswered Activities and Incomplete Outputs

The university teachers relied on completed module activities and outputs to track student performance and identify areas needing additional support. However, some students simply submit their activity sheets with some items without answers. Some students were also unable to do or

perform the outputs indicated in the modules. P2, P3, P4, P6, and P7 signified that scoring or marking the students' activities and outputs made it difficult for them to monitor their academic performance and evaluate their grades. They conveyed:

P2: "There were cases where some question items were left unanswered. In this case, I did not score it but mark it with "No Answer". Then, I still used the total score."

P3: "Students left items blank, especially the essay questions."

P4: "Some students have submitted their activities but could not submit their projects. How will I assess students' academic performance then?"

P6: "I have students who preferred to submit performance outputs rather than pen-and-paper tests. Objectively, I still assessed them similarly to their classmate, even if they lacked outputs."

P7: "When my students did not answer some questions and submitted their other requirements, I feel stressed. Monitoring their progress, giving them scores, and computing their grades were difficult."

Plagiarized Answers

P2, P3, P4, and P5 pointed out that some students simply copied and pasted their answers on some questions from internet resources and artificial intelligence (AI) applications. They implied that this did not reflect students' true understanding of the module. This also made it difficult to assess students' knowledge accurately. The university teacher highlighted that it was a form of plagiarism since they stole ideas from others without permission or consent. To mitigate this, the teachers directed the students to paraphrase the ideas and cite the authors. They expressed:

P2: "The students with strong internet connections mostly copied and pasted their answers using AI. It was pronounced since the answers' contents mostly exceed what was expected. I usually gave low scores to these answers even if they fully answered the questions. Sometimes, I returned it to the students so they can do it again."

P3: "I instructed the students to give the source and cite the authors. This also helped me validate the sources of the students' answers."

P4: "Sometimes, it was disappointing that the students can just copy and paste answers from the internet. I am not against the use of AI. But I hope my students attained deeper learning."

P5: "It was difficult for me to assess what my students learned from the modules based on the copied and pasted answers."

DISCUSSION

The shift to a modular approach among HEIs was more than merely a logistical change in response to the COVID-19 pandemic. It represents a more profound transformation in how university teachers think about teaching, learning, student engagement, and quality education.

Improved Curriculum Development and Strategic Planning

Implementing the printed modular approach prompted the university teacher respondents to rethink how they design and strategically plan their curriculum. Improving curriculum and course design for printed modules represents a significant shift in teachers' approach to teaching and learning during the pandemic. The shift from a traditional, in-person classroom environment to

distance education has helped teachers rethink how they engage students, deliver content, and provide feedback in the context of the modular approach.

The teachers' strategic planning illustrates a significant change in their instructional mindset. They have considered more structured and intentional planning on delivering content effectively using printed modules. Their focus on defining specific, measurable learning outcomes for each module emphasizes a move towards greater transparency and clarity in teaching. By clearly identifying what students were expected to achieve, teachers ensured that learning objectives were measurable and attainable, which also helped students understand the purpose and scope of the modules. The teacher's undertaking of using printed modules on the Campus is analogous to the local of study of Bustillo and Aguilos (2022) and Nolasco (2022), where the HEIs opted to use printed modules for continuity of education.

Academic Writing Skills Development

Crafting printed modules during the shift to modular learning was about more than just structuring content for students. It also led to significant growth in academic writing skills among the university teachers. The process of designing modules required the teachers to focus on clarity, accuracy, and coherence, ultimately improving their abilities to write comprehensive modular lesson contents, clear instructions, and richer assessments and activities. It resonates with students' satisfaction with the quality of modules, recognition of the clarity of information and instructions, and engaging and structured content disclosed by Celeste et al. (2024). In like manner, it mirrors students' ease of answering the activities and alignment of lessons and learning outcomes, as revealed by Garingan (2023).

Having a clear and focused mind when crafting modules highlights the cognitive and organizational demands of writing instructional content. In the same manner, the importance of reading various resources ensured that the modules were comprehensive, factual, and engaging. This helped improve the depth of the content being written and supported the teachers in designing diverse, engaging learning activities. The teachers backed up their lesson content and modules with credible sources. The importance of proper referencing underscores the crucial aspect of maintaining academic integrity in writing.

Enhanced Student-centered Pedagogy

The printed modular approach to teaching allowed university teachers to craft printed modules that catered more effectively to the diverse needs of their students. This approach empowered the teachers to be more flexible and adaptive in designing and delivering subject course modules. The teachers prepared printed modules taking into consideration the students' autonomy and self-learning, in cognizance of the scope of distance education characterized by Saykılı (2018) and the modular approach as described by Dejene and Chen (2019) and French (2015). The teachers' move towards creating more personalized, self-paced learning experiences through the modular system allowed them to offer differentiated instruction and incorporate supplementary resources and activities that supported various learning styles, helping students progress at their own pace.

This flexibility allowed the students who may need more time on a particular topic to work at their own pace, while those who grasp concepts quickly can continue progressing. The teachers were able to simplify lessons for ease of students' self-paced learning, implying that they actively worked on tailoring the lesson content to suit students' diverse needs. They reduced the lessons' complexity, ensuring that students could engage with the printed modules independently and without requiring constant teacher guidance. By providing additional resources, they ensured that students who might

need extra support could easily access the help they required while also offering enrichment opportunities for those who were ready to advance.

Lack of Knowledge and Unclear Guidelines in Crafting Printed Modules

The lack of knowledge and unclear guidelines were significant barriers to effective printed module design among university teachers. As they were suddenly required to design and deliver printed modules without prior training or preparation, this gap in knowledge and the absence of structured guidelines created difficulties in effectively developing engaging and pedagogically sound modules. The sudden shift to modular distance education caught the teachers off guard, as they were accustomed to in-person teaching and were not initially equipped with the tools, training, or resources needed to design practical printed modules. They experienced difficulty designing activities that were engaging and aligned with the lesson content. The teachers' module training deficiency resembles the findings of Nolasco (2022) and Mestry (2023), which affected how the teachers wrote their modules.

In traditional classroom settings, the teachers often relied on real-time interaction and face-to-face engagement to keep students motivated and involved. However, in modular distance education, where students typically learn independently, the challenge was making the activities relevant and interactive without direct teacher involvement. While the university offered academic freedom in how modules were to be crafted, this freedom did not come with a clear, unified structure, which resulted in discrepancies and inconsistency in the design and presentation of the printed modules. Without a standardized approach, the teachers struggled to ensure that their modules met university expectations and adhered to a coherent format. The lack of preparation and knowledge in module design highlights the importance of ongoing professional development and teacher support. This was evident in the findings of Mestry (2023) when teachers were provided by their university with related training programs.

Teachers need access to resources, workshops, and training that help them build the skills necessary to craft modules that align with course objectives and students' learning needs. Teachers may struggle to create effective and engaging learning materials without this foundational knowledge. Besides, having clear guidelines while allowing for academic freedom can provide a foundation that ensures consistency, clarity, and pedagogical rigor in module development. This may help create a more standardized, supportive, and effective teaching environment.

Scarcity of Resources

The scarcity of resources, particularly regarding physical materials and technological infrastructure, including internet connection, profoundly impacted the university teachers' ability to craft printed modules effectively. The resource scarcity limited the depth and integration of diverse perspectives, research, and references in the modules, which may have affected the breadth and quality of the educational content provided to students. The University library's lack of books and journals created a significant gap in the resources teachers needed to create well-rounded and academically rigorous modules. It is worth mentioning that the Campus has a modest library with limited books, journals, and digital resources. Some of the books are not updated. Some specific academic fields have limited library resources, while others have nothing at all. There are also no external libraries within the community where the Campus is located. This is comparable to the scarcity of resources hindering teachers' module writing, as Nolasco (2022) determined.

The difficulty of accessing online resources due to poor internet connectivity created a logistical challenge and added additional time and effort to the already time-consuming process of crafting the

modules among the teachers. Sadly, this is to say that the Campus is located in a rural area or local municipality where internet infrastructure is underdeveloped and internet service providers are nonexistent. In order to access the internet, most use mobile data connections. Alongside internet signals, the locality also experiences weak or void phone signals, especially those in remote areas. The internet connection is also affected by local weather, considering that the locality frequently experiences rain and thunderstorms. Additionally, the locality often experiences abrupt and unannounced power interruptions, dramatically affecting internet availability, as supported by the local study of Canuto (2023). These conditions also resemble factors recognized by Bustillo and Aguilos (2022), Kuzu et al. (2022), and Nolasco (2022).

Internet connection issues may have hindered the teachers' ability to stay current with academic research, access the latest educational tools, or download multimedia content that might be useful in developing engaging and diverse learning modules. While the teachers displayed considerable adaptability and resourcefulness, the reliance on sporadic access to resources was not a sustainable solution.

Work Overload

The added responsibilities associated with printed module preparation and distribution shed light on the significant challenges university teachers face, particularly when coupled with heavy teaching workloads. These challenges were further exacerbated by clerical and administrative tasks, which may have hindered their effective teaching and module design. The teachers' responsibilities extended beyond just teaching. In addition to designing and delivering lessons, they were tasked with clerical duties and administrative functions, adding extra layers of pressure to an already demanding teaching load.

The handling of several course subjects simultaneously compounded the challenges of module preparation. Developing and preparing many modules, each with its own set of learning materials, assessments, and activities, within a short period was an overwhelming task. The teachers might be overwhelmed and may find it challenging to focus on instructional planning and module development. This situation illustrated a significant issue of excessive workload during the pandemic, relating to Kuzu et al.'s (2022) discovery of increased teachers' workload affecting their summer breaks.

Late Claiming and Submission of Printed Modules

While the university teachers made significant efforts to provide both printed and digital formats of the modules, the challenges of internet connectivity, geographic isolation, and travel restrictions made it difficult for some students to access and submit the modules promptly. These circumstances echo those identified by Bustillo and Aguilos (2022), Kuzu et al. (2022), Nolasco (2022), and Tugano et al. (2022). Even with the physical distribution of printed modules, some students were often unable to claim their modules on time due to travel restrictions, quarantines that limited movement, and the geographic isolation of some students, especially those living in more remote areas.

The inability of students to consistently access soft copies of modules due to poor internet connectivity undermined the flexibility that the modular approach was meant to offer. The teachers mentioned the common problem of students submitting their modules late, which was particularly stressful given the high volume of module outputs that teachers had to check. As discussed earlier, the locality has insufficient internet infrastructure, weak or void phone signals for mobile data, frequent rains and thunderstorms, and power interruptions. Aside from claiming modules, these

factors may have greatly impeded students from searching for answers online, affecting their on-time submissions.

Despite the frustration of late submissions, the teachers expressed a compassionate and understanding approach toward their students. They showed a deep understanding of the difficult circumstances the students were in due to the pandemic. This showed that, although there were challenges in managing the late submissions, the teachers recognized the extraordinary nature of the pandemic and were willing to show flexibility. Teachers accepted late submissions not as an excuse for poor academic performance but as a recognition that the pandemic created unpredictable student challenges.

Difficulty Validating Students' Academic Progress

The university teachers' concerns regarding the difficulty of validating students' progress resonate with many teachers' broader challenges in the shift to modular learning. This challenge is particularly significant in a modular system where students work independently, often at their own pace, without regular opportunities for instructors to observe their learning process directly. Unlike Kuzu et al.'s (2022) recognition of systematic assessment in online modular learning, the teachers' concerns revolve around the authenticity and ownership of students' work in the printed modules.

Without direct, in-person interaction, ensuring that students were genuinely completing the work themselves became difficult. In traditional settings, teachers can observe students' participation, ask questions in class, and use interactive methods like group work to gauge understanding. With modular distance learning, the lack of teachers' oversight created uncertainty about whether the students were genuinely engaging with the modules or simply turning in completed work without actively learning.

Lack of Effective Communication and Student Engagement

The university teachers highlighted significant communication barriers due to limited access to technology, unreliable internet connections, and periodical student engagement. They pointed out that students faced issues such as poor or no internet connection and lack of devices, which hindered their ability to stay connected with them. This issue is especially prominent in rural, remote areas, where internet infrastructure may not be as developed and phone signals are nonexistent, creating digital divides between students and teachers. Even when communication channels through phone calls or group chats were set up, students were still unresponsive. Having these communication issues conveys the analysis of Bustillo and Aguilos (2022), Kuzu et al. (2022), Nolasco (2022), and Tugano et al. (2022).

Unsatisfactory Answers

The university teachers indicated a disconnection between the modules' learning objectives, desired depth of understanding, and the actual student answers. Despite their efforts to simplify lessons and provide clear rubrics, students did not meet the desired learning outcomes of in-depth analysis. This may imply a mismatch between what the students were supposed to learn and what they actually demonstrated in their responses. The students were not engaging with the material at a deeper cognitive level. It can also signal that students might provide surface-level responses without demonstrating a true grasp of the lesson content. The rubrics meant to guide students toward achieving more profound learning outcomes were not effectively influencing the quality of student responses. Students' analysis was limited to superficial understanding, suggesting that they may be able to recall basic facts, but they struggle with more complex cognitive tasks and critical thinking.

This raises the possibility that students might not adequately process or internalize the simplified content or may lack the necessary skills to apply what they learned effectively.

Unanswered Activities and Incomplete Outputs

Another challenge identified by the university teachers points to a broader issue of ensuring fair, consistent, and comprehensive assessment using printed modules during the pandemic. They struggled with incomplete or inconsistent student submissions, making it difficult to track academic progress and assign appropriate grades accurately. Students often left questions blank, suggesting a significant gap in student engagement, understanding, or time management. It can be associated with students' lack of academic responsibility, as suggested by Kuzu et al. (2022).

If students failed to complete key parts of the modular assessment, it became difficult for the teachers to gauge the full extent of their learning. The teachers acknowledged the difficulty in assessing performance outputs in the same way as written tests. This inconsistency may have created confusion about assessing and comparing student performance fairly. This issue signifies how the teachers may have used incomplete tasks to assess overall students' academic performance. It was hard for the teachers to evaluate students' grasp of the full range of learning outcomes. They were left to rely on incomplete or inconsistent data, making it hard to provide accurate evaluations.

Plagiarized Answers

There were concerns among university teachers regarding students' use of internet resources and AI to complete assignments, particularly when copying and pasting answers or plagiarizing answers. They expressed frustration that these practices undermine the true assessment of students' understanding and academic integrity. It parallels teachers' problems of students plagiarizing their answers for completion, as discerned by Kuzu et al. (2022).

The concern here was that this practice did not reflect students' true understanding of the material; instead, it showed their ability to find and replicate external content without internalizing the knowledge. The teachers observed that answers from AI or internet sources tend to exceed expectations regarding content complexity or length, making it obvious when the work has been outsourced rather than generated by the student. This made it difficult to assess what students have indeed learned, which may have affected the accuracy of grading and the ability of the teachers to provide meaningful feedback on student progress. Though, they emphasized that while they were not against using AI or internet resources per se, the students should use them responsibly, with proper paraphrasing and appropriate citation of sources and authors to avoid committing plagiarism.

CONCLUSIONS, IMPLICATIONS, AND LIMITATIONS

During the COVID-19 pandemic, the printed modular approach became a crucial tool in education in some HEIs. It was particularly relevant among university teachers, providing them with innovative tools to adapt to the sudden shift to remote and distance education. It helped to address the urgent need for adaptable and scalable solutions to support students' remote learning, striving for change toward more flexible, student-centered learning and instruction. Given this approach, this study focused on the experiences of university teachers in a local HEI regarding their crafting, preparing, and crafting, preparing, and delivering printed modules. As determined, the teachers conveyed several benefits they gained and challenges they encountered. Their acquired benefits depict professional and pedagogical development. On the other hand, the challenges they encountered detail issues in preparing and distributing the printed modules, as well as concerns regarding students' academic performances. Nonetheless, the teachers recognized the significance of using printed modules in response to sustained quality education amidst the pandemic.

Understanding the context of teachers' use of printed modules in the local HEI during the pandemic is pivotal for understanding its effectiveness in maintaining educational continuity, mainly due to limited access to technological infrastructures and resources. It provides valuable insights as to how the teachers employed distance education. The study's findings indicate that the printed modules offered a dependable, though not flawless, solution to address school closures and challenges posed by the pandemic, including limited access to technological resources. It helps pinpoint gaps and informs future educational strategies to ensure all students have equitable access to quality education, even during unprecedented disruptions. Recognizing the role of printed modules yields profound findings for long-term educational planning, particularly in emergency preparedness. It can offer outcomes on what worked well and where improvements are needed, such as supporting teachers' continuing professional development and distributing printed modules and supplementary resources. It can guide future education policy, particularly in blended learning models, where printed materials may still play a role in conjunction with online platforms.

While this study presents significant perspectives on the university teachers' use of printed modules during the pandemic, it is important to acknowledge several limitations that may influence the findings. One constraint involves the small sample size of the participants, making it difficult to generalize the findings to a wider context. This denotes that the findings are not representative of the larger population but are only applicable among the university teacher participants in the local HEI. The timing of the study's conduct may have also influenced the findings. Considering that in-person classes already resumed and the study was executed years after the height of the pandemic when modular approach and remote learning were largely employed, the participants may not have explicitly shared their experiences. Lastly, it is essential to highlight that the context of the participants' institutional arrangement and conditions during the pandemic may have also influenced the findings. The structure of printed modular learning employed by the teachers was unique in their Campus and distinguishable from other HEIs. Further related studies are suggested to be done.

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