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Digitalization of Learning Materials: A Study of UPOU Faculty Adoption of H5P

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***Abstract*— This research delves into the exploration of utilizing H5P (HTML5 Package), to enhance student engagement at the University of the Philippines Open University (UPOU). UPOU, recognized for its leadership in distance education, is committed to seeking strategies to enrich the learning experience for its widely dispersed student community. With digital technology continually evolving, UPOU strives to uphold its role by adopting approaches to develop and deliver curriculum content, thus fulfilling its mission to disseminate best practices among other educational institutions. Establishing the Center for Open and Digital Teaching and Learning (CODTL) signifies a step towards these objectives. Among its initiatives is the integration of H5P, enabling educators to craft learning opportunities that can be seamlessly incorporated into UPOU's Moodle-based course platforms. This study seeks to inform strategies to promote greater adoption of H5P by faculty members and contribute to the ongoing digitalization of learning materials at UPOU. While some studies on H5P suggest that it is user-friendly and beneficial due to the various content types it can support, its adoption at UPOU still needs more training so that the faculty members can fully appreciate its benefits. For the survey, faculty members who attended the Faculty Orientation with H5P were invited to answer the questions. The findings were that most faculty indicated that they have not yet adopted H5P due to either a heavy workload or insufficient available time in general. For those who adopted H5P, the participants in the survey found initial challenges during the process but quickly became comfortable with its format. It was evident that there was a strong interest in using H5P to enhance student engagement in the participants' courses, but time and a learning curve were identified as hindering wider adoption. The study's implications indicated a need for UPOU to develop specific strategies to overcome those challenges and possibly support those faculties who wish to incorporate H5P in their courses. By doing so, UPOU will be better positioned to improve the student learning experience and maintain its standing as a pioneering institution in digital distance education.**

Keywords*— *H5P, Digitalization, Distance learning

I. INTRODUCTION

The dynamic digital landscape is what has driven recent changes in the education sector. The emergence of technologies has not just reshaped how we obtain information but has also introduced teaching methods that boost student involvement and accommodate learning preferences. The University of the Philippines Open University (UPOU), a leader in open and distance education in the country, continuously explores innovative tools and technologies to enhance student learning.

As it caters to a geographically dispersed student body, UPOU has offered flexible learning opportunities that transcend traditional classroom boundaries. However, to continue the flexibility and cope with the recent trends, distance learning needs to be upgraded by adopting innovative approaches to curriculum development and delivery to ensure effective knowledge transfer and student engagement. And, as the leading university in open and distance learning, UPOU is expected to head start and share the innovations and practices not only within UP but also in other higher education institutions in the country, as stated in the UPOU Citizens Charter (2024), to wit:

"UPOU is mandated to contribute towards upgrading the quality of the educational system of the country by developing innovative instructional strategies and technologies and sharing these with other colleges and universities through cooperative programs. Republic Act (RA) 10650 (Open Distance Learning Law) has tasked UPOU to assist relevant national agencies, higher education institutions, and technical and vocational institutions in developing their distance education programs through training, technical assistance, research, and other academic programs." (UPOU, 2024)

UPOU launched the Center for Open and Digital Teaching and Learning unit under the Office of the Vice Chancellor for Academic Affairs (OVCAA) to facilitate these undertakings. This new unit has three sub-units, namely: Educational Media Production, Learning Design, and Research in Open and Digital Teaching and Learning. These three sub-units are tasked with implementing innovations and technologies in course development and delivery for UPOU and other HEIs as mandated in RA 10650 or the Distance Education Law. Since its inception last year, CODTL has conducted a series of FGDs (Focus Group Discussions), teaching and learning conversations, faculty orientation, write shop, and inclusivity training. Faculty orientation sessions with infusions of education technology workshops were conducted in coordination with the three faculty offices of UPOU. These

events introduced or promoted the faculty dashboard and the UPOU workspace. The dashboard and workspace are web-based repository where the FIC and/or course writers find the written format of the faculty orientation guidelines and presentations so they can go back to the topics discussed during the actual workshops. It also includes topics like gender-fair-inclusive-accessible mind setting and technology tools.

Several studies have reported that interactivity, fast feedback, a good combination of media, and an acceptable user interface are important for effective asynchronous learning environments. Teachers need to level up their teaching strategies to catch the students' attention during asynchronous classes. Most of the current students, both young and older adults, are used to engaging in multimedia, video games, and social media content turning them into visual learners (Selvarasu, et.al., 2020). These challenges lead universities, especially those who engage in open and distance learning, to develop technologies or techniques that may easily be adopted by their faculty (Mir, Figueroa, and Zuhairi, 2024).

UPOU has been using the Moodle LMS since 2010 when the resource-based course packages took over the printed materials. During that period, each faculty-in-charge was encouraged to use OER materials like electronic journal articles, videos, or even YouTube. FICs were also encouraged to design their course sites and upload self-made animations, games, or anything that can boost student engagement. UPOU also conducted workshops on Flash animation for faculty and staff. Over time several learning technologies came up. Thus, one of the innovations being introduced by CODTL is the use of the H5P (HTML 5 Package) tool, a free and open-source framework that empowers educators to create interactive learning experiences. (H5P.org) This tool is integrated at the course site run by Moodle and will depend on how the faculty-in-charge intends to use it like activities, quizzes, interactive texts, animated videos and others.

H5P has gained significant traction in the educational landscape due to its user-friendly interface and diverse content types. Studies by Jacob and Centofanti (2024) describe the H5P as a free and open-sourced content collaboration framework that allows educators to create interactive content that can be embedded into a variety of platforms including Moodle. H5P includes 39 open-sourced, editable content applications such as interactive presentations, quizzes, interactive timelines, audio recordings, and flashcards (H5P.org). In the same article, the authors said that "H5P applications allow learners to be in the Active and Constructive modes of engagement, enabling students to manipulate and reproduce their understanding of the learning material. H5P encompasses these principles by allowing the student to make decisions about their learning of the content, thereby actively engaging in the content in a meaningful manner." Selvarasu, et. al., (2020) also said that by integrating H5P with Moodle, the teachers, and instructional designers can enhance the student's learning experience and make teacher-student and student-student interactions more effective and seamless. Thus, it may be helpful to investigate how teachers are taking advantage of its affordances. This research will focus on the adoption of H5P by the UPOU faculty.

II. Objectives

The study aims to:

1. Understand the current state of H5P use at UPOU,
2. Identify factors that influence faculty adoption, and
3. Explore the challenges and opportunities associated with integrating H5P into UPOU's curriculum.

By examining these aspects, this research seeks to provide valuable insights that can inform strategies to promote the wider adoption of H5P within UPOU and contribute to the ongoing digitalization of learning materials. While research suggests H5P's potential, limited studies explore its specific adoption within UPOU. Examining faculty experiences with H5P can provide valuable insights into its implementation and potential roadblocks.

III. Methodology

The study was set in the context of the open university in the Philippines where students mostly learn online asynchronously because most of them study from different time zones and are limited by geographical and temporal restrictions. UP Open University's identity as a distance-learning institution has tried different kinds of learning platforms and strategies to make learning accessible without compromising the quality of education it offers. Thus, from print modules authored by subject experts with once-a-month face-to-face classes (blended learning) to conversion to fully online (asynchronous classes) with the implementation of resource-based course packages where the faculty can use open-source digital texts and videos like the YouTube, etc. Presently, the introduction of digital education by incorporating H5P and other forms of AI technologies is being incorporated to the faculty trainings to enhance the student learning process.

The study participants were faculty members of UPOU who attended the Faculty-in-Charge (FIC) Orientation workshops conducted by CODTL in early 2024. The workshops started with an introduction of the technology and how it can help them boost student engagement. The participants were trained to prepare their text-based static courses for conversion to H5P. At the end of the workshop, they were asked to show their initial prototypes. They were then asked to answer the questionnaire through email. A set of questions was sent to sixteen faculty members who have attended the workshops and ten of them responded.

The instrument used for this study is a questionnaire containing the following questions:

1. Have you tried adopting H5P in your classes?
2. If yes, did you find it easy or difficult to prepare your course materials or activities?
3. If not, what is the reason why you did not adopt H5P in your classes?
4. If you adopted H5P, do you think it enhanced your students' engagement?
5. Do you have some feedback from your students?

The answers were analyzed using a simplified version of Clark and Braun's reflexive thematic analysis (RTA). In a

study by Byrne (2021), he described Braun and Clarke's RTA as a readily accessible and conceptually adaptable method for qualitative data analysis that aids in identifying and examining patterns or themes within a data set. He also said that eventually, Braun and Clarke redefined it as plain qualitative analysis.

IV. FINDINGS

The study is expected to provide a picture of H5P adoption among UPOU faculty members. It will identify the extent to which faculty are familiar with and utilize H5P, their perceptions of its benefits in enriching course materials, and the challenges they face in its implementation. By identifying these factors, the study aims to contribute to the development of targeted strategies to promote and support H5P adoption within UPOU. Below is the summary of their answers based on the survey questions:

On adoption of H5P, while all of them experienced hands-on training during the workshop, most of the participants had not tried adopting H5P in their courses due to time constraints. Another factor was their overwhelming workload because as full-time university professors, they are expected to teach, do research, and to handle committee and administrative work as needed.

For the second question, those who attempted have found H5P difficult at first but manageable eventually. Some also said that it is quite easy but very time-consuming.

Those who did not try at all said they need more time to learn how to navigate H5P was a common reason for not using it. However, they are willing to learn how it works and try it in their future classes.

Although most of them had not tried adopting it, they perceived that H5P could enhance student engagement by encouraging interaction and giving the students immediate feedback on their answers. One participant even said he cannot say that using H5P is a factor but he observed that during the semester when he used it, dropping was lessened and students submitted all their tasks and assignments.

For those who tried adopting H5P, they observed mixed feedback from the students. Some appreciated H5P activities while others did not react at all.

Overall, while there was interest in using H5P to enhance student engagement, time constraints, and the learning curve were significant barriers to its widespread adoption.

With these results, UPOU needs to encourage faculty members to try and integrate H5P into their courses so that UPOU can gauge the effectiveness of H5P in supporting student learning. While almost all of those who answered the survey said they think it can enhance student engagement or learning, it needs to be proven by adopting it in their courses and having first-hand observations on their students.

V. IMPLICATIONS AND RECOMMENDATIONS

The findings of this study will be valuable for understanding the current landscape of H5P adoption within UPOU. Based on the identified benefits and challenges, the study can help the CODTL to identify the training needs and support mechanisms that will equip the faculty with the necessary skills and encourage them to adopt H5P and other digital technologies that are openly available and accessible.

Additionally, the findings can contribute to discussions on best practices for incorporating technology into distance learning classes, potentially benefiting not only UPOU but other institutions adopting this educational development

With this, it is concluded that this research on the adoption of H5P in teaching is timely and relevant in UPOU's path towards digitalization of learning materials. It can open possibilities that will strengthen students' learning process and engagement. It is highly recommended that UPOU should delve deeper into the training programs for the faculty particularly on the use of new technologies like the H5P and other digital technologies. The training programs that will be developed will not only benefit the UPOU community but also other HEIs that will be trained by UPOU in compliance with the Distance Education Law.

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