**Uncluttered: Development of a Collaborative Repository and Evaluation of Student Projects.**

A Thesis

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**Chapter I**

**The Problem and its Background**

This chapter includes the Background of the study, Objective of the study, Scope limitation of the study and the Significance of the study.

# Background of the study

In Educational institutions world has a incorporated different learning technologies such as learning management systems or the LMS’s that we called in order to support the learning process in education. The use of technologies alongside the traditional campus-based learning constitutes or the blended learning. It has been adopted in higher education as compromise between in traditional blended learning such as the face to face F2F and also the web-based learning modes. Blended learning represents a possible solution to tackle the issue of learners' differences by addressing their individual needs. In UDL or the universal design learning in higher education can compromise as student experience in terms of the performance, satisfaction in academic, social presence, and also can be in learning flexibility.

In the 21st century, technologies and software are one of the most used in studies. Technologies has one of the biggest role in our lives especially in education. Technologies is an instrument used to deliver the learning in education. Technology or technologies is one of the instrument to help us to aim our goals in education. Technologies can be used in any aspects, it can also be used in good or bad habit, or it can be negative or positive. Living without technologies can affect the daily lives of every person in Earth. We, as living in planet Earth, in every place you’ll see there are technologies everywhere, may it be a machine, mobile phones, laptops, personal computer, tablets, televisions, or anything you’ll see in the world is part of technologies. Technologies in education can be good or bad, a lot of us are willingly uses the technologies in a bad habit. When we are willing to finish the task in easier and faster way, technologies can used in a bad situation in such way of plagiarism. Plagiarism is the most used technology in a bad habit in education. With the use of software or application, this can be used in accessing sources of what we need. The positive side of using technologies together with the software or application is that we maintain being on time, the work is being done faster unlike not using any technologies. In the said software, number one is Google for to use in any plagiarism. In a positive workplace in environment in education technologies, there are lot of software can use such as Github, Gdrive and Ms Teams. Due to the pandemic COVID-19, these softwares are used for e-learning method. Collaboration between each other is essential in order to understand the situation and to get along with the members. In that way, we have messenger chat box to get a good communication in each other, messenger is one of the most used in communication. But the problem is, using other software or messenger can easily distract us. In order to maintain the positivity, we have Ms team. However,t Ms team is used to monitor the student in E- learning. It is also used as a new school instead of going to school or traditional way of attending the class. Many universities are using this software to help the students work in a positive workplace. This also have file repositories that teachers facilitate. Many of us are easily distracted by the other application and software, and it can cause slow progress in terms of working activities or groupings. Developing projects such as related to these software and application can make some positive performance in student.

According to Poston, Apostol & Richardson (2020). They says that when it comes in academic Microsoft Teams was used in virtual platforms such the face to face hybrid and online learning that allow the real time of social interaction and collaboration. And according to McVcy, Edmond & Montgomery (2019). They says on their research that MS teams or the Microsoft teams are not only facilitate the communication between student and teacher but this software can improve the communication between teacher and students it also help them to enhance the collaboration in E-learning platform. It also provide feature that has chat rooms collaborative discussion.

According to Hodges et al., (2020) when the COVID-19 started, that there are significant trend in education systems to embrace remote instruction using digital technologies which invariably include virtual learning platforms. According to Dhawan (2020) It says there is a sudden need to change education and to integrate virtual learning platforms that emphasise collaborative learning, real-time interactions and discussions between educators and learners, online lectures (live and recorded) accessible via mobile devices, and immediate feedback. According to these people Allo, Coman & Dhawan (2020) In order to radically revolutionise teaching and learning, educational institutions are using the transformative power of technology and effective collaborative tools to deliver instruction, for example Google Classroom, Microsoft Teams, Zoom. Cisco Webex Meetings, Adobe Connect and Blackboard. While there are debates on efficacy of online learning in the midst of a pandemic, educators are focusing on the flexibility of the platforms in delivering content and resources, student centeredness and its suitability for complementing traditional education. According to Heggart & Yoo (2018) that when switching to remote learning virtual platforms that support formal and informal learning platforms are needed. According to Poston et al., (2020) That Microsoft Teams is said to foster synchronous and asynchronous communication which are critical for distance or remote learning. According to Hai-Jew (2020) that Microsoft Teams can be used within formal, non-formal, and informal education and that it supports remote education.

**OBJECTIVES OF THE STUDY**

# The general objective

Bring Student together and make a positive workplace also to maintain the communication in one subject and learn to work among the members of an organization such as group activities to monitor the contribution of students and to avoid plagiarism in working time and to boost the productivity of team members.

# Specific Objectives

This study has the following specific objectives:

1. The user can work with other people efficiently to be more productive,
2. Be able to do task remotely
3. Exterminate unorganized storing files habit
4. Track unresponsive members in a group project

# Scope and Limitations of the Study

This study primarily focuses on how collaboration work with other student, how to do the task remotely; to organize the unorganized files, and to track the unresponsive student particularly the student of Batchelor of technical vocational teacher education major in computer programming in Technological University of The Philippines Manila Campus. The study will be done through developing and that will be evaluated through Likert Scale. The respondents of the study were compose of the population of fourth year student of Batchelor technical vocational teacher education major in computer programming.

# Significance of the Study

The project will greatly benefit the following:

The students of Bachelor of Technical Vocational Teacher Education Major in Computer Programming will mostly benefit of the said project developing. The project may help them to collaborate with other students to work in an organized environment that monitors the contribution of the students and chat systems that makes everyone communicate in terms of group activities in school.

**Chapter II**

**REVIEW OF RELATED LITERATURE AND STUDIES**

This chapter presents the related literature and studies that support the study based on the search done by the researchers and the importance of the present study.

**Cooperative Learning**

In cooperative learning, students collaborate with their peers to achieve a common objective. Instead of one person working alone, the entire group depends on one another to achieve the goal. Each team member oversees the project's success (Dahley, 2020). Thompson (2022) claims that because of technological improvements, people from all walks of life can now access online education. In the United States, where roughly a third of the 20.6 million college students enroll in online courses, the format is particularly well-liked. Martino, et al. (2019) state that when implementing new technology in the classroom, it's critical to keep in mind that effective pedagogy cannot be replaced by web technologies. Consider them learning supplements rather than a magic wand for better teaching when you add them to your toolset.

According to Ansari and Khan (2020), despite physical boundaries, mobile devices and social media provide excellent educational e-learning opportunities to students for academic collaboration, access to course content, and tutors. As electronic communication technologies encroach on every aspect of life, educational institutions have found it difficult for decades to see the role of such devices in content sharing, usefulness, and interactivity style. For Leeuwen and Janssen (2019), opportunities for students to engage in collaborative activities that support their learning process arise during student collaboration. The degree to which teachers exert control over these moments determines whether they can be transformed into genuine learning opportunities for learners. According to Fu and Hwang (2018) The review found that the amount of research on mobile collaborative learning increased and the connection between new mobile technology and collaborative learning activities became tighter. Cognitive group awareness tools are a means to guide collaborative learning activities by providing knowledge-related information to the learners. While positive effects of such tools are firmly established, there is no consistency about the awareness information used and a wide range of target concepts exist (Schnaubert and Bodemer, 2019). According to Pavo (2020). Collaborative learning has great potential in the field of higher education because it promotes the joint construction of knowledge, as well as the development of skills related to the interaction that results in more essential learning processes.

**Collaborative Repository**

To facilitate the sharing and reuse of promising datasets, it is important to construct appropriate, high-quality public data repositories (Okuda and Watanabe, et al. 2017). Watanabe, Yoshikawa, et al. (2021) states that, to promote the sharing and reuse of promising datasets, it is important to build an appropriate, high-quality public data repository. For this purpose, several repositories have already been created.

According to the article Collaborative ORDnance Data Repository written by R. Evans and E. de Brun (n.d) data repository has existed since 2015. It is first use as a database with over 5,000 entries and is used as a means of identifying and detailing a wide range of explosive ordnance for those who are working in the field of humanitarian mine action. Collaborative ORDnance Data Repository is an online tool to enable web-based search of landmine and other unexploded data. This data repository was used to assists humanitarian demining disposal operations. The term repository came from a latin word repositorium which means a chamber where things can be placed or collected. Repository in information technology is a storage place in which data, files or documents are can be obtained in an organized way (Tech Target Contributor, n.d).

On the article Innovative Collaboration Technologies can Improve Business Outcomes (O. Vargas and M. Stevens, 2017), it is indicated that way back March 2020 many companies were forced to adapt the concept of collaboration technologies where employees are required to work from their homes to follow the health protocols provided by the state during lockdown against pandemic. Companies using this approach have some benefits, their employees can now work on their homes remotely and let themselves with their colleagues learn on how to use and develop the collaboration platforms and come up with the most optimal workflows. Collaboration repositories in this era can help organizations to reduce costs, this can enable face-to-face conversations without traveling. This collaboration platform helped organizations to cut expenses that has noticeable effects.  Also, in this kind of set up work can be done faster. Since employees will no longer need to travel, no need to wait as well for everybody to be in the office. Instead, all leaders of the company can take a quick pep talk to everybody from wherever they are working. Many organizations saw an increase on their employee’s productivity during the pandemic as workers proved their proficiency in managing their time and schedules. Workplace flexibility can result in employee retention and satisfaction (O. Vargas and M. Stevens, 2017).

**Evaluation of Students’ Projects**

Lamb (2021) stated that in evaluating student projects, rubrics, and portfolios are effective tools along with student peer and self-evaluations. In evaluating, there comes the rubric. This provides students with a tangible framework that makes them know what are the requirements to pass the project. For Torah High, the primary purpose of assessment and evaluation is to improve students' learning. It is an important tool for adapting curriculum and instructional approaches for students’ needs and to identify the overall effectiveness of programs and classroom practices. These strategies are varied in nature, administered over a period of time, and designed to provide opportunities for students to showcase their full range of their learning. (*ASSESSMENT AND EVALUATION OF STUDENT ACHIEVEMENT*, 2018). The rubrics are made to score the students’ academic skills as well as their skills in public presentation, writing, problem solving, time management, and more. Based on Gigi Doboneski at EdVisions Off Campus School, “Students must communicate why they should earn credit for their work and what level of mastery they attained." Additionally, “It’s not about scope and sequence. Instead, we ask if students reach the goals they set out for themselves. We also consider how much they grow as individuals during every project, and project-to-project,” said by Karen Locke. (*Evaluation Rubrics for Student Projects | Teacher-Powered Schools*, 2018.).

**REVIEW OF RELATED STUDIES**

According to Ghedi, Ishak, et. al (2016), the systematic process of gathering and classifying data so that it can be found and displayed when needed is known as information storage and retrieval. For use in government, business, and academia, computers and data handling systems have made it feasible to quickly and selectively retrieve vast amounts of information. The goal of a research repository is to store data and publications related to research. To maintain its high-quality output, the contents of this repository must adhere to strict guidelines and standards. According to Xie & Matusiak (2016), open access institutional repositories have a considerable positive impact on scholarly communication. In this time, open access repositories have experienced notable success. There are a lot of open access repositories now. A comprehensive list of international open access repositories can be found at The Open Directory of Open Access Repositories. They said that the major function of open access repositories is to further and promote the academic and scientific endeavors of the world community. According to Ukwoma (2017), publications from the institution and other unique materials make up local content. Due to the high quality and value of these resources, it is essential that they be adequately conserved for future generations to improve access to and use of them. According to the report, it's critical to raise awareness among universities of the institutional repository's contribution to improving worldwide visibility.

**Collaborative**

Students actively participate in a process known as "collaborative designing", wherein they communicate and collaborate to discover design limitations, produce shared designs, generate and exchange design ideas, and make deliberate collaborative decisions, and building and changing design solutions for items, as well as assessing their conclusions through dialogue (Kangas & Hakkarainen, 2021 as cited in Hennessy & Murphy, 1999). As for de Vries (2016), both design and technology are still newcomers in the field of education. In most Western countries, design and technology education has been developed only in the past 20 or 30 years. Kelly and Sung (2016) on the other hand, stated that, there is a lot of diversity between nations in how design is used in the classroom and integrated into the curriculum. Creating new knowledge is seen to be a process embedded in the practice enacted, and knowledge is being treated as something that can be shared and jointly developed (Hakkarainen, 2009). And for Bereiter & Scardamalia (2003), knowledge can be dealt through design mode where the focal concern is the usefullness, adequacy, improvability, and developmental potential of all the ideas. Collaboration is a trend in the twenty-first century and is a potential way for people to interact. The need for collaborative thinking and action on pressing issues has grown (Laal & Ghodsi, 2011, as cited in Austin, J. E., 2000; Welch, M., 1998), placing more emphasis on teamwork than on individual efforts and on community over autonomy (Laal & Ghodsi, 2011, as cited in Leonard, P. E. & Leonard, L. J., 2001). The idea of CL, which involves pairing and grouping students in order to accomplish a learning objective, has received a great deal of attention from researchers and advocates. Performance Levels cooperate in small groups to accomplish a common objective. The students are accountable for both their own and one another's education. As a result, the success of one learner contributes to the success of other students (Laal & Ghodsi, 2011, as cited in Gokhale A.A., 1995).

**CONCEPTUAL FRAMEWORK**

**OUTPUT**

**INPUT**

**PROCESS**

**1.System Development**

1. Planning, Analysis, initial Design (UI and program structure)
2. Data Analysis
3. Software Development Life Cycle
4. Testing
5. Evaluation and Survey

Development of a Collaborative Repository and Evaluation of Student project

**1.Software Requirements**

1. HTML5
2. PHP
3. JavaScript (JQuery, AJAX)
4. CSS (Bootstrap 4)
5. MySQL
6. Visual Studio Code
7. XAMPP
8. Firebase

**2.System Requirements**

1. Related literature, studies, and requirements.
2. Research Plan
3. Web Browser
4. Internet

**EVALUATION**

1. Functionality

2. Workability

3. Feedback

4. Review

5. Features Adjustment

*Figure 1. Conceptual framework*

This framework will help identify the goals and objectives of this research, and represents the system in three stages. Inputs provide all the needed resources made available to a program to meet the requirements of the objectives and goals of the system to enable its operation and it includes the profile of the participants, independent and dependent variables, codes and survey questionnaire (Psychology, n.d). Processes is where conversion of inputs into outputs takes place to achieve the objectives and goals of the study. It is composed of raw data such as website development, fully function application, data gathering, data presentation and discussion that are put into a system to obtain and reach the desired output. The outputs define the results and outcomes to which all of the inputs and processes are applied (Dallastown, 2018).

**HYPOTHESIS OF THE STUDY**

Developing a collaborative repository does not affect engaging an organized collaborative environment.

**DEFINITION OF TERMS**

Github - a platform where you can control and collaborate projects anywhere.

Plagiarism - taking someone else's work or ideas and telling them as your own.

Collaboratory - something involves collaboration.

Repository - a place where you can store things such as data.

Cooperative - involves cooperation towards one goal.

Algorithm- used for solving a problem or for computation.

Software - set of instructions or programs used for operating a computer and executing specific tasks.

**CHAPTER III**

**RESEARCH METHODOLOGY**

This chapter will presents the research methodologies used in the study. This includes the research design, together of population, sampling techniques, source of the data, the instruments will use in the project, research locale, data analysis and data analysis plan that will be discuss in planning the data of the project.

**Research Design**

The researchers of this study will use developmental research or the Universal design for learning. (UDL) this addresses the need of the students According to Rose & Meyer (2002) that these models were inspired by the Universal Design (UD) framework that was applied before in architecture. And according to Smith & Harvey (2014) that the earlier literature, or the UDL framework was attracted in significant attention by the educationalists for tackling limitations in curricula According to by Jones and Richey (2000) that developmental research was occurs in any natural work environments. This also said that this tends to enhance the credibility of the research, as well as to create methodological dilemmas for the researchers. Nonetheless, whether the research is conducted during the design and development process or retrospectively, the best research pertains to actual projects, rather than simulated or idealized projects. Such as involving the stand-up training and the other computer-based training.

**Research Locale**

The study will be conducted in College of Industrial Education particularly the students of Bachelor of Technical Vocational Teacher Education Major in Computer Programming at Technological University of the Philippines, located at Ermita, Manila

According to Orodho (2017), it refers to a group of people, objects, or items from which samples are taken for measurements. A population is a group of people who are of interest to the researcher and to whom the researcher would like to generalize the results of a study.

The target population of this study comprising roughly 50 students from Bachelor of Technical Vocational Teacher Education Major in Computer Programming. This is to back up the use of simple random sampling.

According to (Crossman, 2020) the major advantage of a simple random sample is that everyone in the population has an equal chance of being selected for the research. This ensures that the sample chosen is representative of the population and that the sample was chosen in an unbiased manner.

Simple Random Sampling will be used so that each member of the population has an equal chance of being chosen for the study.

**Research Instrument**

According to CIHAL, (2022) questionnaires or scales are the measurement tools for conducting a study and used for collecting data from the respondents of the said study.

The Researchers will use adaptive 5 point likert scale survey questionnaire through digital platform such as Google forms.

**Data Collection Procedures**

The entire enrolled students of Bachelor of Technical Vocational Teacher Education from the Department of College of industrial education is the selected participants of the said study. To get the list of the enrollees, the researchers prepared a letter for the TAD office to get the whole list of the enrollees. To successfully gather data, the researchers will use adaptive test questionnaire that has rating scale which the 5-point Likert scale in order to know the performance of the project output.

**Data Analysis Plan**

The researchers will use Statistical Analysis for analyzing the Data. Descriptive Analysis is under Statistical Analysis and will help them to show the summary of the numerical data from the data they have gathered. With the use of Average or Mean of the responses, they will be able to easily identify if the prototype really achieved its aim. They will use Charts for visualization of the analyzed data.

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