Comparing Learning Retention with the Current Online Curriculum between the 2nd Year Biology Students and 2nd Year Computer Studies Students at Silliman University SY 2020-2021

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INTRODUCTION

Background of the Study

The Current Online Curriculum has been used in today's platform. It serves as a way for students to learn online despite the threat of the pandemic. This study gathers information about online biology students and computer students so that the learning retention between the two (2) may be compared. More specifically, this study focuses on College students and their learning retention, where the proof can be seen in the results of the tests. The ability to remember and retain any relevant information that was studied can be seen in the performance of the student on tests. The scores of the tests will show how much information was retained, or at least how much retained information appeared in the test.

E-learning and traditional learning are one of the most important learning processes and being practiced by students. As of now, the curriculum of Silliman University has been updated through an online learning and teaching process. Fonolahi, Khan and Jokhan (2014) conducted a similar kind of study, wherein they contrasted the online course and the face-to-face course, taking different statistics from each course. It was said that online classes did more work to complete and turn in for a grade, so students were more exposed to engaging learning activities. The students in online courses have improved time management and organization when it comes to learning.

Another great help to online students was the opportunity to take several assessments. It helps weaker students to have more chances of success. With reference to another source, it was reported that online students were able to concentrate more on answering questions on the test rather than writing answers with pen and paper.

In another study, Wang, Fang, & Gu (2019) examined modes of teaching and how it affects learning retention and cognitive load impact in students. These multimedia styles are online meetings, video preparations, and learning from text. By grouping 131 participants into 3, 1 for each teaching style, results showed that students taught through online meetings scored the highest and exerted a moderate amount of cognitive load. Video learners scored the lowest and exerted a high amount of cognitive load. The text learners gained moderately high scores with the lowest amount of cognitive load expended. On a post-test one week later, text learners were able to retain the most knowledge. For the remaining groups, differences between the two (2) were insignificantly low and less than those from the text group.

Tambone (2012) in his paper hypothesized that numerous factors affect student retention, with most of them being psychological. These factors include student-faculty interaction, student motivation, and cognitive and academic skills. The claims were supported by data from Survey of Entering Student Engagement (SENSE), which researched the advising models used and advice needs expressed by the students, as well as results taken from the ACT, a college entrance exam taken in the US. The study highlights the students' grasp of the faculty's enthusiasm and capability to lead students

to succeed in academics. Those students who have academic advising from faculty and motivational support from fellow students had increased involvement in doing educational activities; improved skills and ability to think critically, reason and analyze critical information; as well as influenced the results of the measures (Exams and tests) that determine the student's academic abilities. It is also easier to sight whether the student requires remedial support or not. The authors' research and the use of data strongly supported the proposed hypothesis on the factors that affect student retention

For biology students in their learning style in online courses, the study of Brame and Biel (2016) reviewed thirteen (13) studies that compare the effectiveness of online and face-to-face (F2F) undergraduate biology courses. Two (2) larger-scale studies found those students in F2F sections outperformed students in online-sections, and three (3) found no significant difference. However, it should be noted that these studies reported little information about course design. Out of the eight (8) smaller-scale the study, six (6) found no significant difference in student performance between the F2F and online sections, while two (2) found that the online-sections outperformed the F2F sections. So, they inferred that it has something to do with the course design. Well-designed online biology courses can be as effective as their traditional counterparts.

In Krajewski (2015) study was based on the retention and success of students due to the influx of online courses at community colleges. The study was concerned with an online biology course and examined factors involving the student’s skills, characters and another character from Rovai’s persistence model. It had results for both univariate

analysis and multivariate analysis which explained the least variability in the outcome variables of the students' retention and success. Age, race and spell recipient were predictive of success in both regression models while academic load or meeting AFP criteria was not in the multivariate analysis.

A number of studies have also given ridicules on the idea of using online platforms for the learning process. Riggins (2014) concluded that many institutions are increasing online course offerings, although the quality of online learning is concerning. Multiple factors support the need for clarity on the quality of distance education in biology. To determine if there were differences in student perceptions on transactional distance, approaches to learning, and student learning outcomes in online versus face-to-face community college introductory biology courses. It was said that online and face-to-face course experiences, as well as outcomes, appeared to be similar. It showed that some parts of transactional distance affected the desires for deep learning approaches in participants.

Contrastingly, for computer science students, a study by Giannakos et. al. (2016) investigated on the factors that influence student retention in the said course. The study found out that a high level of degree of usefulness has a positive effect on student retention. Cognitive gains and a supportive environment positively impact a degrees adequacy, while non-cognitive gain hinders it. Negative feelings or personal values are also considered as factors reducing student retention. To be able to allow educators and policymakers to take appropriate measures to enhance students' experiences in CS

studies as well as to increase retention, the overall outcomes should be a factor to theoretical development.

This is supported by the articles of O'Malley (2017) and Riabov (2020), wherein they used various online tools in teaching computer science courses. Using state-of-the-art free-license software tools the students were updated to the modern, sophisticated techniques in several areas of computer science. However, plagiarism is one thing to take note as it is easier to cheat in an online setting. If all factors are taken into consideration, then students can be guided to fully concentrate on their studies.

All in all, online learning is not a bad thing at all but certain parameters are to be placed carefully to fully harness and utilize the full potential it can possibly offer (Durden, 2020).

Statement of the Problem

This study aims to find out the different factors between the 2nd year Biology students and 2nd year Computer Studies students in learning retention with the online curriculum. It includes the observation of potential aspects in online learning retention environments and the recommended strategies to improve the learning retention of the students in Silliman University.

Specifically, it seeks to answer the following questions:

1. What implications does online learning pose to these two (2) different fields of study?

2. Why does this platform of learning affect the students' retention span from each respective field of study?

3. Which of these factors affecting the students' retention are unique and common to both fields?

4. How are these factors unique to each field?

Significance of the Study

The study's findings will aid educators in determining the different factors of the two (2) courses affecting learning retention. With the online delivery systems being revolutionized for academics and has provided quick access to learning, ascertaining the most effective way of doing so will allow Silliman University College students to make the most use out of the online learning process. This in turn will lead students to know the different factors of learning retention from virtual lectures and that will end up boosting their academic performance. These two (2) different factors combined will also allow students to remain relevant to today's turbulence while easing the pursuit of their careers in the future.

Therefore, the students and educational instructors of 2nd Year Biology and Computer Studies of Silliman University School shall be the ones to benefit the most out of the data that is to come from this study. College educators in Silliman University will benefit by determining ideal and effective education methods related to factors of learning retention and will become aware of whether or not the kind of platform for learning affects the students' retention span from each of the two (2) courses. The 2nd Year Biology and Computer Studies students, in using the effective means of learning retention that will then be facilitated by their instructors and educators, will be aided in making the most use out of online class, virtual discussions, and lectures, which will therefore improve their education.

Scope and Limitations of the Study

This study will focus on the factors of the students' learning retention. This is valid only to the 2nd Year Biology and Computer Studies students who are enrolled in the year 2020-2021 in Silliman University. We selected these target groups in order to see the difference on learning retention between two (2) different fields of study using the online platform.

The data collection will be conducted to 80 randomly selected students (40 students in each course respectively). Each respondent will be given questionnaires to answer, prepared by the researchers, which is the main source of data. The researchers

selected these target groups in order to see the difference on learning retention between the two (2) different fields of study using the online platform. The data collected in the questionnaire shall give insight on the factors affecting learning retention and the effects of using an online platform to practice relevant skills in their respective curriculums.

Materials and Methods

For this study, the researchers will use primary data that shall be collected through online surveys. However, before collecting the primary data, the researchers shall identify the mode of data collection. In this method, the questionnaire is created via google a form which allows the researchers to collect information via a simple web form. The data can be collected through online means. The benefit of this method is to allow the respondents to have ample time and convenience to answer the following questions. The selection of the respondents will be based on random sampling. The data will be analyzed by ranking the data that has been collected.

Definition of Terms

The following terms shall be operationally defined as follows in this study:

E-learning — E-learning, or online classes, is the method of applying the uses and learnings of technology as a way to conduct classes outside of the traditional classroom. (Tamm, 2019)

Learning Retention — Learning retention is generally the transferring of information from our short-term memory to our long-term memory, and the ability to bring up such information when needed. (Bennet, 2012)

Traditional Learning — A traditional learning system is the method of teaching where the teacher moderates how knowledge is distributed towards the students, where the students develop their learning by answering take-home assignments and are introduced to topics only by face-to-face instruction from their teachers. (TopHat, n.d.)

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APPENDIX A

COVER LETTER AND QUESTIONNAIRE FOR THE RESEARCH PARTICIPANTS

SILLIMAN UNIVERSITY

Dumaguete City 6200, Philippines

01 December, 2020

Dear Respondents:

We are college-level students taking up Purposively Communication. In partial fulfillment of the requirements of the course, we are to conduct a study entitled **Comparing Learning Retention with the Current Online Curriculum Between the 2nd Year Biology Students and 2nd Year Computer Studies Students at Silliman University SY 2020-2021.** We have chosen the 2nd Year Biology Students and 2nd Year Computer Studies Students of Silliman University as participants for this study.

With this, we would like to request your time and cooperation during the conduct of this study. The survey that we created will be answered online via a google form. Your views, ideas, and opinions will greatly help with the completion of this study. We assure you that all data garnered from the participants shall be treated with utmost confidentiality following ethical standards for research while being used exclusively for this study.

We will be looking forward to your cooperation and partnership. Thank you for your time.

Sincerely Yours,

James Templeton Karl Vincent V. Habagat Kyle Angelee Estabillo

Ma. Katrina Jean J. Limson Nathalie Grace Desor Nathaniel P. Guirhem

Noted by:

Mrs. Hermiesela Duran

Participant Name: _____

Participant Course, and Year Level: _____

___ Included in the Honor Roll ___Not Included in the Honor Roll

QUESTIONNAIRE

Instructions: Please respond to the following questions by placing a check mark (√) in the answer box that corresponds to your answer.

1. How do you feel overall about online education?

❑ Poor

❑ Below Average

❑ Average

❑ Good

❑ Excellent

2. Do you have access to a device for learning online?

❑ Yes

❑ Yes, but it doesn't work well

❑ No, I share with others

3. What device do you use for distance learning?

- ❑ Laptop
- ❑ Desktop
- ❑ Tablet
- ❑ Smartphone

4. On average, how much time do you spend each day on online education?

- ❑ 1-3 hours
- ❑ 3-5 hours
- ❑ 5-7 hours
- ❑ 7-10 hours
- ❑ 10+ hours

5. How effective has remote learning been for you?

- ❑ Not at all effective
- ❑ Slightly effective
- ❑ Moderately effective

❑ Very effective

❑ Extremely effective

6. How helpful your [School or University] has been in offering you the resources to learn from home?

❑ Not at all helpful

❑ Slightly helpful

❑ Moderately helpful

❑ Very helpful

❑ Extremely helpful

7. How well could you manage time while learning remotely? (Consider 5 being extremely well and 1 being not at all)

❑5 ❑4 ❑3 ❑2 ❑1

8. Do you enjoy learning remotely?

❑ Yes, absolutely

❑ Yes, but I would like to change a few things

❑ No, there are quite a few challenges

❑ No, not at all

9. How helpful are your teachers while studying online?

- ❑ Not at all helpful
- ❑ Slightly helpful
- ❑ Moderately helpful
- ❑ Very helpful
- ❑ Extremely helpful

10. How peaceful is the environment at home while learning?

- ❑ Poor
- ❑ Below Average
- ❑ Average
- ❑ Good
- ❑ Excellent

11. Are you satisfied with the technology and software you are using for online learning?

- ❑ Not satisfied
- ❑ Slightly satisfied

- ❑ Very satisfied
- ❑ Extremely satisfied

12. How important is face-to-face communication for you while learning remotely?

- ❑ Very Important
- ❑ Important
- ❑ Not important

13. How often do you talk to your [School/University] classmates?

- ❑ Always
- ❑ Seldom
- ❑ Never

14. How often do you have a 1-1 discussion with your teachers?

- ❑ Always
- ❑ Seldom
- ❑ Never

APPENDIX B

RESEARCH MAP

Research Title:	Comparing Learning Retention with the Current Online Curriculum between the 2nd Year Biology Students and 2nd Year Computer Studies Students at Silliman University SY 2020-2021
Researchers:	James Templeton Karl Vincent V. Habagat Kyle Angelee Estabillo Ma. Katrina Jean J. Limson Nathalie Grace Desor Nathaniel P. Guirhem
Purpose of the Research:	This study aims to find out the different factors between the 2nd year Biology students and 2nd year Computer Studies students in learning retention with the online curriculum. It includes the observation of potential aspects in online learning retention environments and the

	recommended strategies to improve the learning retention of the students in Silliman University.
Month-Year:	December-2020
Participants:	2nd Year Biology Students and 2nd Year Computer Studies Students
Environment/ Setting:	Silliman University
Approach:	Qualitative Approach
Research Questions: **1.** What implications does online learning pose to these two (2) different fields of study? 2. Why does this platform of learning affect the students' retention span from each respective field of study?	**INSTRUMENT** ● Survey Questionnaires ● Evaluation

3. Which of these factors affecting the students' retention are unique and common to both fields? 4. How are these factors unique to each field?	

APPENDIX C

MEMBERS' CONTRIBUTION

All members have used their utmost knowledge to accomplish this work in compliance with the GE5 Lecture Project. The research parts were partitioned accordingly to the requests of each member. No qualms or disparity were demonstrated while doing the research paper.

Below are the contributions of each member respectively:

James Templeton -	Definition of Terms
Karl Vincent V. Habagat -	Bibliography, and Page formatting
Kyle Angelee Estabillo -	Statement, Significance, and Scope and Limitations
Ma. Katrina Jean J. Limson -	Methodology, and Appendix A
Nathalie Grace Desor -	Title Page, and Appendix B
Nathaniel P. Guirhem -	Background of the study, and Appendix C

Then it was proofread by all members to ensure its reliability and credibility.