Students Perspectives on the Integration of Online Collaboration Tools for Learning

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Abstract--- This study was conducted to determine the students' perspectives on the integration of Online Collaborative Tool in Learning. Specifically, it aimed to determine the online tools used by the students in learning within or outside the classroom; identify the problems or challenges encountered by the students in using online tools; assess the perception on the benefits of using online collaborative tools in learning; determine the needs of the students when using an online collaborative tool in learning; and find out the difference on the perceptions of the ICT students and non-ICT students. The study made use of descriptive method of research. Student's perceptions toward the use of online tools for learning were determined through a survey questionnaire. Weighted mean, percentage, ranking and z-test were used in order to analyze the data gathered from 302 respondents (50 ICT and 252 non-ICT students) from the different colleges in the Isabela State University Cabagan, Campus which was drawn through stratified random sampling. Results showed that students generally agreed that online collaborative tools are beneficial when used in learning. The perception of Non-ICT and ICT students on the use of online collaborative tools for learning revealed significantly difference. However, the students primary problems encountered were the unavailability of internet connection, unavailability of computer to be used and lack of financial resources. Whereas, to maximize the benefits of the use of online collaborative tools for students learning, the following should be considered: free internet connectivity in the classroom, available computers, viewing of class standing, announcement notification, and viewing of announcements.

Index Terms: integration, learning collaboration, online collaboration tools, perspectives

I. INTRODUCTION

The Information and Communications Technology (ICT) has brought dramatic changes in the academe as to its structure, procedures, functions and even in the classroom settings. Today, school administrators, teachers and students used varied sets of ICT tools to communicate, disseminate, and manage information and to improve or advance the teaching and learning. The use of ICT tools is proving to offer a more dynamic learning experience with direct benefits to learners specifically students.

In these day, students want new ways to engage and collaborate where traditional classroom has been relatively isolated and learning collaboration has been limited among the students in the same classroom or building. Technology based tools are one way to address and meet these needs where distance and time is no longer a barrier to acquire or enhance knowledge and to collaborate with their teachers and peers for learning new skills. Online collaboration tools, is a web-based technology tools that enable teachers and students to perform a wide range of tasks, such as interactive discussions, online collaboration activities, sharing and accessing electronic learning resources and many others[7]. The integration of online collaborative tools for students' learning can deepen their knowledge and skills and enable students to communicate, collaborate and engage fast and easily by supporting instructional objectives and proper strategies for learning activities that needs to be formulated and implemented.

The approach of collaborating computer aided learning with more traditional forms can inspire students and empower teachers with the freedom to embrace their changing roles in the industry [2]. It is further stressed that technology tools facilitate real-time and asynchronous text, voice communication; assist in basic project management activities [6]; support co-creation by enabling groups to modify output in real-time or asynchronously; facilitate group discussions and polling [4][5]; simplify and streamline resource man-agement in terms of basic file sharing, search, tagging, version tracking, privilege management; and keeping teamwork alive, motivated, and enthused [10].

In a surveyed conducted, 74 percent of educators said that the technology based tools is key to helping them motivated and expand their classroom content; and 73 percent said that it helps teachers respond to different learning styles for the students while 69 percent said that technology has helped do more than ever before for their students [1].

All of the aforementioned benefits of ICT are just a few of the rich literature and studies on the use of ICT. However, majority of which are in the contexts of researchers and writers. Effects of ICT use were considerably being studied. Yet, the need to know the perceptions of the students themselves is lacking.

Hence, this study was conceived to determine the perspectives of the students with respect to the integration of online collaboration tools for learning. The student's perception on the online collaboration tools is very essential for it determines the need to integrate and to develop an online tool for ISUC that will help leverage the students learning and teacher's instruction to facilitate classroom management. Hence, the results of this study will provide system developer with inputs on the system development and implementation of the online collaborative tools for learning. Likewise, this study contributes to the body of literature on the use of online collaborative tools in students learning.

Revised Manuscript Received on March10, 2019.
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Statement of Objectives

The study aimed to determine the students' perspectives on the integration of Online Collaborative Tool in learning.

Specifically, it sought to:

1. Determine the online collaborative tools used by students in learning within or outside the classroom;
2. Determine the problems or challenges encountered on the use of the existing online collaborative tools by:
   a. Information Communications Technology (ICT) students, and
   b. Non-ICT students;
3. Assess the perception on the benefits of using an online collaborative tools in learning by:
   a. Information Communications Technology (ICT) students, and
   b. Non-ICT students;
4. Determine the needs of the students when using an online collaborative tool in learning; and
5. Find out the difference on the perceptions of the ICT students and non-ICT students as far as the use of the online collaborative tool in learning are concerned.

II. METHODOLOGY

Research Design

This study made use of descriptive statistics. Thus, the researcher used a survey questionnaire to determine the perspectives of students on the integration of online collaboration tools for learning.

Respondents of the Study

The respondents of the study were the students of Isabela State University at Cabagan Campus (ISUC), Philippines who were enrolled during the Academic Year 2016-2017. There were two groups of respondents in the study. The first group consisted of non-ICT students and the second group consisted of ICT students. Out of 3,323 students, 257 non-ICT and 50 ICT students served as the respondents of the study drawn from stratified random sampling.

Data Gathering Procedure

A questionnaire was prepared in gathering the data on the perception of the students on online collaborative tools. The researcher personally distributed the questionnaire to the respondents three weeks before the end of the 1st semester of the S.Y.2016-2017. A pre-test was conducted among senior faculty researchers and IT experts to ensure the reliability and validity of the items and to obtain other information on online collaborative tools. The respondents were informed regarding the objectives and purpose of the study and that their participation in the study is voluntary. They were also informed that they are free to withdraw from it at any point and for any reason. However, they were reassured that their answers will be treated with utmost confidential and used only for the purposes of the particular research.

The questionnaire was composed of six parts. Part I determines whether or not the respondents have experienced using online collaborative tools. Part II determines the online collaborative tools used in learning. Part III determines the possible challenges or problems encountered. Part IV is an open-ended question that asked other problems experienced by the respondents aside from what was mentioned or enumerated. Part V assesses the perception of the respondents on the benefits of integrating online collaborative tools. Lastly, Part VI determines the specific needs of the respondents when using online collaborative tools.

Data Analysis and Statistical Tools

All the data gathered were organized, tabulated, analyzed and interpreted using percentage, ranking and weighted mean. For in depth analysis of data, z-test was used to find out the difference on the perceptions of the ICT students and non-ICT students as far as the use of the online collaborative tool in learning are concerned.

A Likert Scale was used to determine the perception of the respondents wherein the rating of "1" was equivalent to "strongly disagree" and the rating of "5" was equivalent to "strongly agree."

III. RESULTS AND DISCUSSIONS

Table 1 presents the online collaborative tools used by students in learning within or outside the classroom. The results indicate that Google Apps were mostly used as online collaborative tool with 71.43 percent. The superlative search engine and the user friendliness may have been a factor why it is being considered as most used tool in learning among the online collaborative tools. This conforms to the findings of reference [8] that Google Apps for Education is relatively easy to use for most users, even those unfamiliar with Google Docs or other Google Apps; and through Google Apps, the students were able to establish social presence with one another through the following elements: sending and receiving instant updates on the document and constant access to the online document [9]. Yahoo ranked second with a percentage of 40.48 while Skype ranked third followed by Show Document and Edmodo. On the other hand, the bottommost online collaborative tool used by the students in learning is Scribbler with only 0.40 percent of the respondents.

Table 1. Online Collaborative Tools used by Students within or outside the classroom

ONLINE COLLABORATIVE TOOLS USED BY STUDENTS	PERCENTAGE (%)	RANK
1. GOOGLE	71.43	**1**
2. YAHOO	40.48	**2**
3. SKYPE	20.63	**3**
4. SHOW DOCUMENT	9.92	**4**
5. DROPBOX	2.78	**6**
6. BINFIRE	1.19	**7.5**
7. COLLABORIZED	1.19	**7.5**
8. SCRIBBLAR	0.40	**9**
9. EDMODO	9.52	**5**

Table 2 shows the problems or challenges encountered by the students on the use of existing online collaborative tools. Data revealed that majority of the ICT and a non-ICT student, that is 90 percent and 87.41 percent respectively, experienced the unavailability of Internet connectivity. This could be presumed on the low internet connection or weak signal, and the area or range of the connection on the internet lines in the campus.

Computers are readily available in the campus library, reading room and computer laboratories in the different colleges which can be used by students during their free time or scheduled time. However, 70 percent of the ICT students and 65.80 percent of the non-ICT students still encountered problems since the number of computers in computer laboratories, reading room and library are limited considering the number of students enrolled in a class or the population of the students in a semester. Limited capacity for uploaded files ranked third for ICT students' problems. This could be attributed to the various files shared by ICT students compared to the non-ICT students, while limited computer to be used for non-ICT students.

Among the 10 problems or challenges enumerated, the least problem that the ICT students have encountered is the lack of time to participate while insufficiency of time when taking online quizzes is for the non-ICT students.

Table 2. Problems or Challenges encountered by the Students.

Problems or Challenges	ICT Students		Non-ICT Students	
	%	Rank	%	Rank
1. Insufficiency of time when doing assignments	54.00	5	51.49	9
2. Insufficiency of time when taking online quizzes	50.00	6	51.08	10
3. Unavailability of computer to be used	70.00	2	65.80	3
4. Unavailability of Internet Connectivity	90.00	1	87.41	1
5. Need for technical support	44.00	9	64.41	4
6. Lack of financial resources	56.00	4	73.96	2
7. Lack of time to participate	22.00	10	55.45	6
8. Forgotten username or password	50.00	6	51.89	8
9. Limited capacity for uploaded files	60.00	3	53.90	7
10. Absence of real time feedback or replies	50.00	6	60.72	5

Table 3 shows the perception of the students on the online collaborative tools in learning. Data revealed that ICT students have a higher level of agreement on the benefits brought about by the use of the tools in learning than that of the non-ICT students. This result is supported by reference [3] that online collaboration enhances student learning achievement and enables smooth and fast communication. However, ICT students neither agree nor disagree that with the tools they experience more student-teacher interaction.

On the other hand, the non-ICT students generally agree on the different benefits brought about by the use of online collaborative tools. However, they neither agree nor disagree that they experience more peer-to-peer involvement and can promptly submit school requirements. This could be attributed to the unavailability of Internet connectivity as the primary problem that they have encountered. Some students may not be able to collaborate among other students and their instructors.

Table 3. Perception of the Students on the Use of Online Collaborative Tools in Learning

When using an online collaborative tool, I…	ICT Students		Non-ICT Students	
	Weighted Mean	Descriptive Equivalent	Weighted Mean	Descriptive Equivalent
1. Can better achieve learning outcomes of the course	4.40	Strongly Agree	3.62	Agree
2. Can better enhance my computer skills	4.24	Strongly Agree	3.68	Agree
3. Can better develop my communication skills	4.24	Strongly Agree	3.75	Agree
4. Can easily access learning resources	4.44	Strongly Agree	3.79	Agree
5. Can easily keep track of school requirements	4.50	Strongly Agree	3.60	Agree
6. Am trained to become more independent	4.42	Strongly Agree	3.70	Agree

When using an online collaborative tool, I…	ICT Students		Non-ICT Students	
	Weighted Mean	Descriptive Equivalent	Weighted Mean	Descriptive Equivalent
7. Can give myself more opportunity to have extensive input into my school requirements	4.12	Strongly Agree	3.67	Agree
8. Experience more student-teacher interaction	3.26	Neither Agree nor Disagree	3.48	Agree
9. Experience more peer-to-peer involvement	4.30	Strongly Agree	3.39	Neither Agree nor Disagree
10. Can promptly submit school requirements	3.68	Agree	3.37	Neither Agree nor Disagree
11. Can communicate with my teacher and peers anytime and anywhere	3.94	Agree	3.73	Agree
12. Can better enhance my learning experience and engagement	4.24	Strongly Agree	3.80	Agree
13. Can get timely feedback from group members or my teacher	4.30	Strongly Agree	3.77	Agree
14. Am motivated to apply the content and learn the course material	4.38	Strongly Agree	3.72	Agree
15. Am encouraged to reach out to the group to solve problems and share knowledge.	4.20	Strongly Agree	3.82	Agree
OVERALL WEIGHTED MEAN	**4.15**	**AGREE**	**3.67**	**AGREE**

Table 4 shows the needs of the students when using online collaborative tools. It could be gleaned from the table that the top five needs are as follows: Free internet connectivity in classroom (79.80%). According to reference [11] "Internet is a valuable resource for educators where teachers can collaborate with others professionals, access information of lessons, and allow students to conduct research and other related activities".

The availability of computer (69.21%) ranked second, viewing of class standing/grades (48.68%) ranked third, announcement notification (41.72%) ranked four, and viewing of announcements (39.40%) ranked 5. Among the 14 enumerated needs of the students in using online collaborative tools, online polls got the least percentage of 6.95%.

Table 4. Students Needs when Using Online Collaborative Tools in Learning.

Students Needs when using Online Collaborative Tools in Learning	Percentage (%)	Rank
Free Internet Connectivity in the Classroom	79.80	1
Available computers for students	69.21	2
User-friendly collaborative tool interface	33.44	8
File Sharing (uploading and downloading of files)	34.77	7
Photo Sharing	14.24	12
Creating of Online Content Collaboratively	9.60	13
Discussion Forum	30.79	9
Private Chat	15.23	11
Online Quiz	21.19	10
Online Polls	6.95	14
Viewing of Class Standing/ Grades	48.68	3
Viewing of Announcements	39.40	5
Viewing of Calendar Activities	35.10	6
Announcement Notification	41.72	4

To find out if the perceptions of ICT and non-ICT students are significantly different from each other, z-test was computed. Results on Table 6 show that since the z statistic > z critical, that is 5.75 > 1.95, therefore the null hypothesis that the means is the same is rejected. This implies that the perceptions of the ICT and non-ICT students are statistically different. This means that the ICT students have better perception than the non-ICT students with regard to online coloration tools for learning. However, the non- ICT students has a lower known variance of 0.021 than the ICT students with a 0.11. This shows that the non-ICT students' assessment on the online collaborative tools is closely related compared to the ICT students.

Table 5. z-Test: Two-Sample Assuming Equal Variances

	ICT Students	*Non-ICT Students*
Mean	4.146	3.672
Variance	0.113478	0.022101
Observations	20	20
Pooled Variance	0.067789	
Hypothesized Mean Difference	0	
Df	38	
t Stat	**5.757013**	
P(T<=t) one-tail	6.13E-07	
t Critical one-tail	1.685954	
P(T<=t) two-tail	**1.23E-06**	
t Critical two-tail	**2.024394**	

The null hypothesis H0 is that the means are the same. The alternative hypothesis Ha is that the means are not the same

IV. CONCLUSIONS

Based on the results of the study, the following conclusions were drawn:

1. Generally the students used online collaborative tools for learning within or outside classroom such as google apps, yahoo and skype.
2. The limited number of computers in computer laboratories, campus library and reading room, limited capacity for uploaded files has been perceived by ICT and non-ICT students as a problems or challenges they encountered when using online collaborative tools for learning. Likewise, the non-ICT students also encountered problem or challenge/s on lack of financial resources.
3. The ICT students generally agreed that online collaborative tools are beneficial when used in learning as they can keep track of their school requirements, can easily access learning resources, and it give more time to prepare for their school requirement. However, the non-ICT generally agreed that the integration of online collaborative tools can trained them to become more organized; it encouraged them to reach out to the group to solve problems and share knowledge; and can better enhance their learning experience and engagement.
4. Majority of the students ought to have a free access to internet and available computers when using online collaborative tools for learning.
5. The perception of ICT students and non-ICT students showed significantly different on the integration of online collaborative tools. It was expected that ICT students have better skills in manipulating computer and surfing the internet. Also, ICT students were knowledgeable and already exposed to the different online tools for learning.

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