Information And Communications Technology Integration, Preference And Academic Performance

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Abstract

In today’s type of civilization, Information and Communications Technology became one of the foundations of general use of the society because people use it on a day to day basis. In the educational context, this medium has been used to improve the capacity of the learners; hence, it is being integrated to the learning process. Using the quantitative design and complete enumeration sampling with the grade 10 junior high school students, the study focused on the association of the two variables of the study namely the ICT integration preference and academic performance. A checklist type of instrument was utilized to gather the data indicating that more students do not prefer the use of Information Communications Technology Integration in teaching the subject English. Moreover, the scores of those who did not prefer ICT scored significantly high in their first periodic exam which means that ICT integration preference did not matter to their academic performance. To the extent of the study, ICT integration preference alone is not enough to justify the idea that it could negatively or positively affect the academic performance. Experimentation and a long-time analysis of the respondents for Information and Communications Technology integration shall be done.

Keywords: Academic Performance, Information and Communications Technology (ICT), ICT integration preference

Introduction

An information paper of UNESCO (2014) states the provision ICT for development in the classroom in cooperation with private sectors. Aduwa-Ogiegbaen and Iyamu (2005) stated that through the years, it has been said that when something was wrong with education it cannot be fixed with technological use, but the contemporary way of living relies more on the digital utilization. Boateng and Wilson (2014) pointed out that starting from the birth of formal education, cognition and retention of knowledge depends on the student’s characteristics and teacher’s pedagogical practices. Noor-Ul-Amin (2013) mentioned that the role of ICT in education is growing inevitably important in relation to the seemingly fast growth of the digital industry in the current century. Though, Abdullahi (2014) argued that it existed to have an enormous benefit to the education and society.

Wallet (2014) postulates that policymakers accepted access to media of the commodity can help the individuals to be competent in the global economy by humanizing skilled work force and facilitating social mobility. It was even emphasized that ICT integration in education has a multiplier effect throughout the educational system by providing the students with new sets of skills. An educational system has to acknowledge the significant impact of ICT teaching -labour process (Relf and Sappey, 2010) because it is important even in the sciences, Abdullahi (2014) foundational pedagogy helps bring abstract concepts to life using images, sounds, movements, animations and simulations Pyla (2012); improve the quality of education according to teachers who are in favour of ICT integration (Player-Koro, 2012) so that teachers and even school principals were also obliged to manage and support this strategy to promote a higher quality of education (Polizzi, 2011).

Fu (2013) has observed that accessibility of ICT learning at any time and at any place in particular, for instance, the 24/7 cloud. However, Katz and Macklin (2007) has observed even with the advancement of the technology, other schools and universities don’t really have the access to the
media or possess little knowledge about it and sometimes even illiterate on its functions. Likewise, Olaore (2014) regarded resources are considerably low in some countries like Nigeria, which needs software, hardware, and trainings to teachers to improve their literacy to modern media and its importance to education similarly with Salehi and Salehi (2012) who account the essential to use ICT in to be more effective in teaching, as a driver of change a modern technology, an instructional material as supported by Lachica (2015) who says that ICT process knowledge and information exchange that support various activities in teaching and learning and it has great potentialities to maximize the learning of the students. Pollizi (2011) agrees that efforts must be exerted and even specified that school administrators or principals should have a great support to the school adaptation to modern technology. But ironically enough, teacher’s attitudes in using those “techy things” doesn’t seem to be affected by their principal’s level of support to it because even if their principal doesn’t support it, it was legal.

In the Philippine settings, Rodrigo (2001) affirmed that ICT use in education is currently adopted and as one of many developing nations that have turned to information and communication technology as a tool to improve teaching and learning.

Finally, ICT integration and ICT integration preference having a relationship or not having a relationship to the academic performance of the students has challenged the researchers to delve into.

**Literature Review**

Information Communication and Technology has been in the bosom of the educational system. Player-Koro (2012) posits that attitudes and beliefs of teachers of ICT usage in education yields model of positive attitude of students to the usage of ICT in learning. A study by Relf and Sappey (2010) asserts that information and communications technology integration to educational practices in school does not define education itself, but it somehow influenced the learning of students and teacher’s pedagogy and that the views of the impact of digital technology or ICT in teaching and the traditional roles of teachers in which ICT is considered the courier technology as well as storage of knowledge and the silo of education.

According to Abdullahi (2014), the roles of ICT in the global arena has improved the cognition like higher order of thinking, problem solving ability, communication skills and deep understanding of the learning tools and concept being taught, the philosophical, sociological, psychological aspects which enable teachers to create a sound basis for practicing the teaching skills in the classroom. With that at hand, Makewa, Kuboja, Yango, and Ngussa (2014) postulated that teacher competence and practical ICT application in schools entail a strong positive relationship to learning-teaching styles in the classroom. Zainal (2012) posits technological, pedagogical and content knowledge are dynamically related to the ability of the teacher to use technology such as ICT.

Ghavifekr, Razak, Ghani, Ran, Meixi, & Tengyue (n.d.) teachers of the modern era should be able to know the basics of ICT, more specifically, its use and connection to modern education. In some instances, Aydin, Gurol, and Vanderlinde (2015) explains that teacher positive and negative attitudes and perceptions of ICT integration are prevalent however teachers expressed that ICT integration and provides more opportunities of learning than the traditional methods of teaching. In addition, Noor-Ul-Amin (2013) agrees that effective use of ICT for education and learning can help acquire global knowledge, information and experience leading to global change most particularly in terms of teaching and learning process and a positive outcome in the academic performance of the students.

According to Hennessy, Ruthven and Brindley (2005), student and teacher use of ICT should lead to significant technological and pedagogical change within subject teaching. Furthermore, Meenakashi (2013) suggests to increase learner motivation and engagement, facilitating the acquisition of basic skills, and enhancing teacher training in ICTs to lead students to transformation to learner-centered environment. In a micro aspect, Marcial and Dela Rama (2015) recommends to improve the level of competency among the teacher educators, particularly skills in using complex and pervasive
ICT tools to achieve innovative teaching and learning and maximize technology infusion into the teaching instruction among teacher educators because as observed that the teacher-educators become integrative, student-centred and collaborative with the integration with ICT. Somehow, Fu (2013) argues the evolving intervention of ICT in education engages students to connect to the internet efficiently and effectively, to be student-centred and self-directed learner, to make creative learning settings, to promote collaborative distance learning in a distance situations and to offer higher order thinking skills. Lachica (2015) cites that ICT integration public schools can provide learners the chance to construct realities. Mikre (2011) says that pedagogical practices are different from the traditional to integrated pedagogy to ICT which includes active learning, collaborative learning, creative learning, integrative learning, and evaluative learning aligned to the perspective of constructivism. Consequently, Youssef and Dahmani (2008) point out that differentiated impact of ICT is more related to student performance.

Katz and Maklin (n.d.) reveals that despite the prevailing of technology nowadays, students still possess insufficient ICT literacy skills like locating, evaluating, and communicating information. In addition, Aduwa-Ogiegbaen and Iyamu (2005) mention the costly computer software and hardware especially in developing countries other than lack of structure, teacher training and internet companies to support classroom ICT integration. Likewise, Player-Koro (2012) discusses that student attitude and teacher attitude including self-efficacy, negative specific and general attitudes on ICT use also affect the outcome of learning. Salehi and Salehi (2012) inputted that there are barriers in ICT like the intrinsic and extrinsic barriers which include access, time, support, resources, and training and intrinsic barriers as those which are related to teachers, administrators, and individuals that gives hindrances to learning. According to Rodrigo (2001), there is an insufficient teacher preparation in ICT trainings and will execute teaching with the use of ICT erroneously. However, Olaore (2014) object that still advantage of ICT still overweighs the adversities. Pyla (2012) claims that ICT agents for changes in the higher education and the society in which ICT may aid researchers complete their research work easily and shortly and motivates more researchers to engage to more research works. Masagca (2008) claims that ICT is used in storing, encoding and preparing of materials/documents, retrieving, distributing and utilizing data/information related to school counselling, and other uses for entertainment, leisure and recreational activities were the viewed usage of ICT by the teachers.

Statement of Purpose

Mentioning the prior situations of ICT integration and the challenges around the globe, it should be a sufficient reason to give further observation of the ICT as a support tool in the delivery of lessons by the teacher to the students and its association to academic performance of the students. Specifically, this study seeks to answer the prevalent pleasure of the students on ICT integration in the delivery of the lesson in English subject, the level of performance scores of the students in the periodical examination.

Research Methodology

Design, respondents, locale and sampling

The study was quantitative in nature and it utilized the descriptive-survey design involving the complete enumeration sampling of 244 junior high school department of the school, specifically, the grade 10 level in one of the schools of Mandaue City Division, Cebu, Philippines for the School Year 2017-2018.

Instrument

The study used the checklist data gathering instrument. To have a full access of the respondents each section, the attendance sheet of each section procured from the classroom advisers served as
guide to the researchers to check their ICT preference for the reference of the researchers. The checklist was composed of the names of the students by section, their scores in the first periodical exam and their preference on ICT integration. The preference in ICT column also contains the sub columns “Prefer” and “Do not prefer” to know the preference of the students and also their scores in the first periodical exam to get their academic performance in English subject.

Data Gathering and statistical analysis
The respondents were given with a checklist and inquired about their preference on ICT whether they like ICT as a part of their subject or not. The researchers explained ICT integration to the respondents. Then, the researchers further asked the respondents of their preference in the delivery of the lesson by the teacher, ICT integrated or not. Furthermore, the researchers asked the respondent’s scores in the first periodical test from their respective teacher to supplement the needed data in the study. The researchers tallied and tabulated the data with the columns prefer, equivalent percentage, do not prefer and the total number of respondents. Then, the researchers utilized the chi-square statistical treatment to analyse the data gathered. Next, the data were tabulated in the observed frequency and expected frequency for it to be able to compute the chi-square equivalent.

Ethical Considerations
The researchers have considered all their ethical actions and responsibility pertaining to the conduct of the study. These considerations include the safety of the respondents, safety of the researchers, and confidentiality of data collected. The researchers deeply know what is morally right and wrong in the process of the research till completion. Hence, it is their utmost priority for the success of the study.

Presentation, Analysis And Interpretation Of Data
This chapter presents the data gathered, analysis and interpretation of data.

Table 1
Frequency of scores in the first periodic exam in English and ICT Integration preference of the students

<table>
<thead>
<tr>
<th>LEVEL OF ACADEMIC PERFORMANCE</th>
<th>ICT INTEGRATION PREFERENCE</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PREFER</td>
<td>%</td>
</tr>
<tr>
<td>Poor</td>
<td>6</td>
<td>2.46</td>
</tr>
<tr>
<td>Fair</td>
<td>27</td>
<td>11.07</td>
</tr>
<tr>
<td>Satisfactory</td>
<td>38</td>
<td>15.57</td>
</tr>
<tr>
<td>Very satisfactory</td>
<td>21</td>
<td>8.61</td>
</tr>
<tr>
<td>TOTAL</td>
<td>92</td>
<td>37.70</td>
</tr>
</tbody>
</table>

Legend: Poor (1-20), Fair (21-30), Satisfactory (31-40), Very Satisfactory (41-48)

Table 1 shows that most students of grade 10 in high school students do not prefer ICT integration in learning their English subject. It suggests that most of the grade 10 students would most likely prefer other instructional materials or other mode of delivery of the lesson. Similarly, Meenakashi (2013) points out that ICT based instructions, such as; the use of projector, videos, PowerPoint presentation, etc. is comparably an ineffective way of teaching based on their preference of English 10 subject as revealed most likely among the fair and satisfactory level of academic scores that belongs in the upper distribution of the scores..

Table2.
Result of chi-square statistical method computation

<table>
<thead>
<tr>
<th>N</th>
<th>$x^2$</th>
<th>df</th>
<th>$x^2_{crit},a=.05$</th>
<th>Interpretation</th>
</tr>
</thead>
</table>

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The computed value (3.35) is lesser than the critical value (7.815) expressing that there is no significant association between the ICT integration preference and the academic performance. Hence, ICT integration preference has no significant connection to the academic performance of grade 10 students of JNHS. Similarly, Salehi and Salehi (2012) identify some barriers in learning which include access, time, support and resources while the intrinsic barriers are the teachers, the administrators and the students. Congruently in this study, the student preference as the intrinsic barrier in the integration of ICT in education so that the students may have been reluctant to ICT then most probably it is where it becomes a hindrance to their learning, not an aide to their studies. To add up, using ICT might result in enhanced level of performance because if learners actually used or experienced ICT not just by the use it by teachers in class. Most probably, by virtue of constructivist theory, meaningful learning might promote good academic standing because the learning is retained and is easily accessible. Moreover, a research by Dahmani and Youssef (2008) claims that ICT integration in the educational context must be suspended to several tests and a longer time is needed before any significant change forecasting that the effects of ICT integration to the academic performance because ICT preference alone is not enough.

**Conclusion And Recommendations**

In particulars of this study, more than half of the grade 10 students do not prefer ICT Integration in the delivery of the lesson in English subject. In the same way, ICT is not enough variable to determine the relationship of ICT to the increase or decrease of the academic performance of a student. ICT integration preference cannot significantly change or take effect on the academic performance of the students because it did not matter to their scores resulted from their tests so that high frequency of preference or low, the scores would be still the same because ICT preference does not measure the scores that they will get in taking their exams. ICT preference alone could not establish the final and absolute relationship to academic performance so it needs another assessment.

A school based seminar about Information and Communications Technology (ICT) integration in education shall be provided to the students of Junior high school which may tackle on the basics of the usage of ICT in the educational settings, the access of information using ICT, and the increasing demand of the world to integrate technology with every aspect of life including education, further assessment, experimentation and adding more variables in that can be a potential variable to the study that utilizes the same respondents for a comparative analysis considering ICT exposure using pre-test and post-test, ICT integration preference of the Teachers and other potential variables in a larger scale.

**References**


