

## From Literati to Digirati: The Experiences of College Freshmen

Jennifer C. Lajera<sup>1</sup> , Rex T. Argate<sup>2</sup>  , Delfin T. Cabañero<sup>3</sup>  and Rosella A. Villahermosa<sup>4</sup> 

<sup>1</sup>Faculty, Surigao del Sur State University, Surigao del Sur, Philippines

<sup>2</sup>Faculty, College of Teacher Education, University of Cebu – Main, Cebu City, Philippines

<sup>3</sup>Faculty, College of Liberal Arts, University of Cebu – Main, Cebu City, Philippines

<sup>4</sup>Faculty, Graduate School, University of Cebu – Main, Cebu City, Philippines

 **Corresponding Author:** Rex T. Argate, **E-mail:** rargate@uc.edu.ph

---

### ARTICLE INFORMATION

**Received:** July 11, 2021

**Accepted:** August 20, 2021

**Volume:** 3

**Issue:** 8

**DOI:** 10.32996/jhsss.2021.3.8.3

---

### KEYWORDS

Computer literacy, assessment, interview, thematic analysis

---

### ABSTRACT

The main intent of the study was to explore the experiences of first-year college students in their computer literacy subjects in their senior high school. Specifically, this study answered the following subproblems: the positive experiences of the informants in enhancing their academic performance through computers and the constraints they experienced in the implementation of the ICT curriculum during their senior high school. This study employed a qualitative method of research with the aid of an interview guide to inquire about the students' experiences in computers during their senior high school. Twenty informants were interviewed individually. The researcher utilized an interview guide and audiotaped with the informants' consent. Thematic analysis was utilized to interpret data and identify meaningful information and organize it into themes. Based on the findings, six themes emerged: Enhanced Learning in Microsoft Office Tools, Practical Application of Knowledge, Better Job Opportunities, Inadequate Number of Computers and Slow Internet Connectivity, Ineffective Teaching Strategies, and Unqualified Teachers.

---

### 1. Introduction

Computer literacy is considered to be a very important skill that one should possess today. Most employers want their employees to have basic skills in computers in the sense that their companies become even more dependent on computers and these computer and internet skills are very much valued in academic and professional environments.

Because of the continually increasing use of computers in our everyday life, Information and Communications Technology (ICT) has been integrated into teaching and learning under the K to 12 programs. It has been given importance, targeting the holistic growth of the learners, getting them ready for college education or in the job market. Nowadays, educators and students make heavy use of ICT in their daily classroom instruction, which is necessary in this fast-changing world where ICT is taking over almost all fields. Therefore, ICT integration in the field of education, most especially in secondary schools, will be very advantageous for the new generation of students.

In the Philippines, many colleges and universities require 1<sup>st</sup>-year college students to demonstrate a prescribed level of computer proficiency. Currently, The K to 12 Basic Education Program (BEC), offer introductory computer courses to assist students in meeting this requirement. In conjunction with the increased importance of computers in everyday life, the societal norms for computer literacy have changed. As an example, many institutions have instituted computer proficiency examinations as a requirement for graduation to ensure that all high school graduates obtain basic computer mastery. Because of this, the Department of Education (DepEd) and Commission on Higher Education (CHED) in the Philippines have mandated the continued integration of ICT in the teaching and learning process.

While it is hard to imagine a Filipino student entering college today without basic computer skills, the researcher is pretty much sure that there are still a few who do not possess this skill. There are some secondary schools in the country without computer laboratories. On the other hand, schools with computer laboratories may not have adequate computers to cater to all their students.

This is the reason why the researcher was inspired to conduct this study, in the sense that in this technological society, students must not only be computer literate but must also be proficient in their computer skills which will be their edge later on when they will enroll in higher studies and seek for employment

## **2. Related Literature and studies**

In order to succeed in the information age, the 21<sup>st</sup>-century skills are needed to develop a set of abilities in every student. These 21st Century Skills list three types: learning skills that include critical thinking, creative thinking, collaborating, and communicating. Literacy skills which include information, media, and technology literacy; and life skills which are flexibility, initiative, social skills, productivity, and leadership. These skills are important to students especially in the present information-based economy, where workers that hold jobs in the industry are expected to have skills in their trade, get along with others, work hard, follow directions, and be efficient, prompt, honest, and fair. Schools have done their part in teaching these skills that students still need.

In order to hold information-age jobs, students are also expected to have the ability to think deeply on issues, be able to solve problems in a creative way, work in groups, communicate clearly using various media, learn ever-evolving technologies, and deal with the influx of information. Our dynamic society requires students to have the initiative, take the lead when necessary, produce something new and useful, and be flexible (Baddeley, 2011).

As a result of the dramatic changes in computer applications, computer users are facing enormous challenges in learning and adapting to these applications. With the continuous advancement of its features, it is quite impossible for computer users not to use applications such as the Internet, E-mails, Word Processing, Databases, Spreadsheets and etc. especially in the workstations. Although many computer users are comfortable using computers, some of them are still struggling to interact with these applications. In this study, data were obtained from a survey method and 319 samples were analyzed. The results of this study indicated that the computer users' skills, knowledge and acceptance of technology have a significant negative relationship with their computer anxiety. The results of the study indicate that computer users are not against technology as they need to use them in their workstations to perform varied job activities. However, they are encouraged to prioritize and manage their time wisely (MohdShah et al., 2013).

There is oftentimes a presumption that individuals with greater computer experience will easily adopt new or updated replacements of existing information technology. With that assumption, a study identified two key dimensions of computer experience i.e. computer use and computer proficiency and evaluated their individual effects. Analysis of the gathered data from 737 respondents using structural equation modelling revealed that each dimension had differential effects on behavioral intentions to use a newly introduced internet-based technology, with computer use having curvilinear effects on adoption intentions (Varma, 2013).

Weigel (2013) proposed that users' technical proficiency level should be accounted for when considering the deployment of information systems. However, it is not clear as to what really constitutes technical proficiency in today's business environment. Using a Delphi method approach, they develop the technical proficiency construct to uncover what competencies indicate technically proficient, what business needs such proficiencies address, and how technical proficiency can be assessed. They discover 13 methods to assess proficiency, 16 qualities of technical proficiency, and 14 common technology business needs.

The importance of computer literacy especially in higher education, does not need to be over-emphasized. Carlson (2003) pointed out that a computer is a standard tool in most places of business. Similarly, in the bank, computers are used to look up account information. Furthermore, in the increasingly automated library environments, one cannot find books by looking in a card catalogue but one must use a computerized database. The point here is that no matter where one finds employment, there is a good chance that a computer would be a basic tool one will have to use. Therefore, it is in the students' best interest to be proficient in computers both for the world of work and in enriching their studies both in high school and at the universities. With higher education, computer proficiency is being recognized as an important component of the curriculum (Mutula, M. & Tella, A., 2008).

Being literate is important to be able to function effectively and productively in life. In technology-immersed world, this means possessing digital literacy. More than the ability to operate computers or smart phones and tablets, being digitally literate also

means having the ability to critically and effectively evaluate, use and create information. It is, therefore, important that we endeavour to keep on improving our digital literacy. In continuing ICT education, the world of technology is fast changing and the pace of technological development is simply astounding. Therefore, it is important that we keep abreast of what's new and continue to learn about ICT (Teves, 2013).

The ability to use a computer for work and recreation with reasonable facility could be considered computer proficient in a social context, but in an educational situation, it would mean that you understood what a computer was and did, were able to program, at least some, and had a working knowledge of peripherals. In a technical environment, it would mean that you could troubleshoot common problems, make basic repairs, and knew the difference between a computer, a tablet, an iPhone and even a laptop, (although a laptop is a type of personal computer). The computer proficiency test requires students to demonstrate proficiency in the use of Microsoft Office and other relevant information technology skills (Glasser, 2008).

In Ghavifekr et al (2014) study about ICT Integration to Education, results showed that teachers should always be ready and be well-equipped in terms of ICT competencies and should possess a positive attitude in providing ICT-based learning opportunities for students, which would lead to improving learning quality.

Some students do not possess the necessary computer skills in various computer applications that are needed to support and enhance their learning experiences. Thus, it is suggested that teachers should provide students with direct instruction to efficiently use computer technology applications such as authoring and sophisticated hypermedia (Keengwe, 2007).

Campbell (2014) concluded that the results of a multiple-regression analysis indicate perceptions of the usefulness of computers in future educational and career plans, failure-task attributions, self-evaluation of one's own computer proficiency, and the stereotyped view of computer as a male-dominated area can be significant predictors of students' decision to enroll in computer courses. The study also showed that college students who do not stereotype computers as a male domain tend to more often have the attitude that computers will be useful to them in their careers and education than do students who perceive computers as a male domain.

The breakthroughs in computers and information technologies (IT) has been perhaps the single biggest drive that impacts organizations during the past years. Adopting and utilising information technologies (IT) in the workplace is a necessary condition for competency and effectiveness in the information age (Al-Gahtani, 2004).

### **3. Research Problem**

This study aimed to explore the experiences of college freshmen in one of the HEIs in Surigao del Sur of their computer literacy subject in their senior high school and its impact on their academic performance.

Specifically, it sought answers to the following queries:

1. What are the positive experiences of the informants in enhancing their academic performance through computer?
2. What are the constraints which affect their academic performance?

### **4. Methodology**

This qualitative research uses thematic analysis as an approach because it identifies, analyses, and reports patterns (themes) within data. The locale of this study is one of the HEIs in Surigao del Sur. 20 students served as informants. These students have already completed their senior high school and are enrolled as first year college students. This study utilized an interview guide as the instrument for collecting the data. The researcher formulated the interview guide from her readings and from her personal experiences as a computer teacher in the senior high school. The interview guide is composed of the key informant code, profile questions, engagement questions, exploration questions and exit questions. The research instrument was checked and validated by three experts.

The researcher asked permission from the school authorities before the conduct of the interview. After the permission was granted, the researcher visited the school's Registrar to get an official list of first year college students and to determine the number of students in every program/course. Upon receiving the list, the researcher selected the informants to be interviewed and the consent of the informed consent form was also explained to them. After the consent of the informants was obtained, the researcher asked for their class schedule to check their available time for the conduct of the interview. Once the informants' interview schedules have been finalized, the interview will start. During the conduct of the interview, the researcher jotted down notes and also recorded the answers of the informants. Thematic analysis was utilized to interpret data and identify meaningful information and organize it into themes.

## 5. Results and Discussion

### 1. The Positive Experiences of the Informants in Enhancing their Academic Performance through Computer

#### 1.1. Enhanced Learning in Microsoft Office Tools

The informants expressed their positive experiences in enhancing their academic performance through the computer. It includes their positive views as to how the implementation of ICT curriculum in their senior high school helped them enhance their learning and that they could utilize their knowledge and skills when they entered college. Apart from basic MS Office skills, they have skills are programming, web development, mobile applications, and computer system servicing.

Students see themselves as having a high degree of computer proficiency if they perceive that their own talents have contributed to the development of that proficiency (Campbell and Williams, 1990).

A study on the effects of learning style with regard to an example of computer-supported collaborative learning (CSCL) called "Toward an Integrated Learning Environment" (TILE) was conducted by Wang (2014). It focused on learning style changes, learning outcomes, and learner satisfaction. The study found no changes in student learning styles and no significant differences in learning outcomes and learner satisfaction regarding different learning styles. However, the results pointed out that one of the benefits that can be derived from computer-supported collaborative learning (CSCL) environments is its support of diverse learning styles.

#### 1.2. Practical Application of Knowledge

The informants conveyed their positive experiences in enhancing their academic performance through computer. This include the instances that they were able to put into practice their learning in computer, that what has been learned cannot easily be forgotten since it involves hands-on activities and because what has been learned can easily be remembered, thus, their academic performance improved. In addition, informants were able to use their knowledge in actual situations such as helping out a family member who is trying to learn computer or any related technology.

Computer experience has been widely recognized as a critical component of the educational process. It is important that today's students will be involved in successful computer experiences that would prepare them to participate effectively in a computer-dependent society. This requires much more than just being able to control the computer.

According to Khatri (2016), a computer-literate person naturally turns to the computer as a problem-solving tool of choice and leadership. Computer knowledge and skills have become a new filter that limits secondary students' educational and career choices. A study done on 160 high school students, presents two exploratory path analyses of potentially relevant variables influencing both high school computer course enrollment and perceived computer proficiency. The results suggest variability in enrollment in computer courses can be partially explained by the two computer attitudes of usefulness and reflectance motivation and the computer attribution of failure-ability. However, variability in self-perceptions of computer proficiency can be practically explained by three computer attributions: success-ability, success-task, and failure-environment, and the computer attitude of anxiety, (Campbell, 2014).

#### 1.3. Better Job Opportunities

The informants expressed their positive experiences in enhancing their academic performance through the computer. This includes the informants' positive views on how they were able to upgrade their level of learning in the computer and other related technologies. They have emphasized that our life today is highly dependent on technology such as simplifying the way they do things, saves time and simplifies communication and that is why they are grateful that they were given a chance to make progress in the field of technology.

The goal of every student is to get a job after they graduate. They have all the time to look for a job that is with high pay and brings happiness and passion. Industries offer enormous career opportunities for those who are qualified. The way these industries have been dependent on technologies gives better job opportunities for undergraduate students who are well-oriented with it.

Most perceptions about wisdom assert that it is developed through personal experiences; indeed, experiences now transformed by computers (Sellen, 2009). Whereas we once used computers, now we live with them. Computers are now part of our everyday personal experiences and it helps shape us as human beings.

It has gone to a moment that tech gifts can pick their employments. It is currently an ability driven area (Valencia, 2018).

A study was conducted on the selected correlates of students' completed and planned enrolments in college-level computer courses. A total of 195 freshman and sophomore college students answered research instruments that measure students' computer attitudes, computer attributions, and selected personal demographics. Results of a multiple regression analysis revealed perceptions of the usefulness of computers in future educational and career plans, self-evaluation of one's own computer proficiency, failure-task attributions, and the stereotyped perception of computers as a male domain combine to function as relevant predictors of enrollment in computer courses. Additionally, college students who do not perceive computers as a male-dominated field tend to have the attitude that computers will be useful to them in their education and careers compared to those students who stereotype computers as a male domain (Campbell, 2014).

## **2. The Constraints which Affect their Academic Performance**

### **2.1. Inadequate Number of Computers and Slow Internet Connectivity**

This theme refers to the negative experiences of the students which affect their academic performance. This includes the difficulty they have encountered during senior high school due to a lack of facilities in response to a huge influx of students. Many of them do not get much access to the lab facilities as others do. There were not enough computers for the number of students in the class. On top of that, internet, if not slow, is not available.

According to Miller (2006), the amount of experience a person has with computers appears to be a significant factor in an individual's self-efficacy judgment for computer-related tasks. The students' lack of familiarity to computers is generally believed to produce anxiety. Therefore, as students become more familiar with computers, their anxiety decreases and their level of confidence increases.

Teachers who have taught computer science agree that students need and will consume large amounts of time on the computer terminals. Suggested ratios for the number of students per terminal range from a low of eight-to-one to a high of thirty-to-one. In general, if a computer course were to be taught for one semester, it would take a minimum of one-terminal or one microcomputer to meet the demands of one class. The location of the one terminal or computer should provide students available access throughout the day and ideally should allow them for before-school and after-school access. Some instructors suggest that the computer needs to be available in the classroom for the teacher to present materials and demonstrate certain uses, or it must be possible to take the class to the computers for demonstration purposes (Morris, 2007).

### **2.2. Ineffective Teaching Strategies**

This theme refers to the constraints which affect their academic performance. This includes how the students expressed their disappointment of the way their teachers handle the class. Teacher, as one of the major components in teaching with technology, should be skilled and experienced. Most importantly, he should know his role as a teacher and select the best strategies suitable for the chosen technology.

According to the Cognitive Load Theory, when teachers imposed unnecessary demands on learners it makes their task of processing information overly complex. These demands would include unnecessary classroom distractions and inadequate methods utilized by teachers to teach the students about a subject. When a cognitive load is managed well, students will be able to learn new skills easier than when there is a high cognitive load because it interferes with creating new memories.

Students would go inside classrooms with different abilities, learning styles, and personalities. Teachers are endowed with the responsibility to see to it that all students meet the standards. Through the utilization of differentiated instruction strategies, teachers can meet all students' needs and help them meet and exceed the established standards. This study gives practical examples of how to differentiate content, process, and product for your students. Grouping techniques, assessment strategies, and tiered lessons are also addressed (Wellington, 2000).

### **2.3. Unqualified Teachers**

This theme refers to the constraints which affect students' academic performance. This includes the teacher's subject being taught that is not vertical with his baccalaureate degree, thus, lead to poor education. Students being taught by teachers not qualified in the subject they are teaching are threatening the quality of education. Learning is greatly affected primarily because of the teachers' educational and professional backgrounds.

How teachers perceive what they learn and how they can professionally develop through their teaching roles are essential to classroom practice and learner achievement because they influence teachers' pedagogic approaches and choice of materials, content, and learner activities. This article reports on some of the research findings from a doctoral project that assessed what 12 professionally unqualified practicing teachers (PUPTs) learned and how they professionally developed through their teaching roles in rural South Africa and Zimbabwe. Drawing on concepts around teachers conceived their learning and professional

development as revolving around general pedagogic knowledge, pedagogic content knowledge, and knowledge of context emerging out of classroom practice and in-school and out-of-school structures. The results of the study indicate that policy initiatives done to enhance education quality through the professional development of PUPTs, particularly in schools in rural areas, may not achieve their intended results if due regard is not given to their conceptions of learning and development through their role (Mukeredzi, 2013).

Students have diverse instructional needs and shifting inspirations for gaining more noteworthy proficiency. Computer literacy advancement is a complex skill that requires a great many long stretches of training and hands-on experience to achieve the levels required for better opportunities in modern life. Yet, numerous understudies do not persevere on account of the variables that influence their performance. Therefore, a continuous improvement process assessing the level of satisfaction among learners is needed.

## 6. Implications for Practice

This study aims to encourage the Philippine government to support schools in rural areas having ICT related problems such as an inadequate number of computers and poor internet connectivity. The government should improve the infrastructure to address the schools' ICT-related issues that affect students' academic performance. This study would also aim to persuade the Department of Education division team to assess how their current ICT programs have been working; to check internally and externally if there are problems unknown to them and find a solution to them. In most schools within the division, there are no computer labs, and if there is, only a few units are working. Students struggle without ready access to computers and that is why schools like in rural areas should be given more attention and support. For teachers, there should always be enhancement training for those handling computer subjects. No matter how skilled and confident we are, and with the technology that is moving too fast and constantly evolving, we must find ways to understand and keep with it or get left behind. Moreover, suitable teaching pedagogies are one of the effective ways of achieving quality education for the students.

## 7. Implications for Future Studies

To fill some gaps and areas that are not covered by this research, the researcher hereby recommends the following topics for future researchers:

The researcher recommends that an in-depth study be conducted on the impact of ICT implementation under the K to 12 programs in rural areas. This may unravel how primary and secondary schools prepare students for college education, employment, and entrepreneurship. This study also encourages future researchers to have an in-depth study on the students' experiences in the implementation of the ICT. Lastly, a study on suitable and effective teaching pedagogies in the computer is encouraged.

## References

- [1] Al-Ghatani, C. (2004). Computer Technology Acceptance Success Factors in Saudi Arabia: An Exploratory study. *Journal of Global Information Technology Management*, p. 50-55.
- [2] Baddeley, A. D. (2011). Is Working Memory Still Working? *American Psychologist*, p. 31, 50.
- [3] Campbell, N. J., & Williams, J. E. (1990). Relation of computer attitudes and computer attributions to enrollment in high school computer courses and self-perceived computer proficiency. *Journal of Research on Computing in Education*, p. 71-72.
- [4] Carlson, R.(2003). Learning and understanding science instructional material. *Journal of Educational Psychology*, p. 68.
- [5] Ghavifekr, S. (2014). ICT integration in education: incorporation for teaching & learning improvement. *Malaysian Online Journal of Educational Technology*, p. 15-19.
- [6] Glasser, W. (2008). *The Quality School Teacher, Revised Edition*. New York: Harper.
- [7] Keengwe, J. (2007). Faculty Integration of Technology into Instruction and Students' Perceptions of Computer Technology to Improve Student Learning. *Journal of Information Technology Education*. Retrieved March 11, 2018 from <https://www.learntechlib.org/p/111414/>.
- [8] Khatri, Y. (2016). *Knowledge and Experience*. Retrieved September 10, 2018, from <https://www.quora.com/What-does-the-term-computer-proficient-mean>
- [9] Miller, G. A. (2006). The magical number seven, plus or minus two: Some limits on our capacity for processing information. *Psychological Review*, p. 24-26.
- [10] MohdShah, M. (2013). *Computer Anxiety: Data Analysis*. Shah Alam, Malaysia. Elsevier Publishers.
- [11] Morris, C. D. (2007). Levels of processing versus transfer appropriate processing. *Journal of Verbal Learning and Verbal Behavior*, p. 38-40.
- [12] Mukeredzi, T. G. (2013). Professional Development through Teacher Role: Conceptions of Professionally Unqualified Teachers in Rural South Africa and Zimbabwe. *Journal of Research in Rural Education*, 28 (11), 1-16.
- [13] Mutula, M. & Tella, A., (2008). Gender differences in computer literacy among undergraduate students at the University of Botswana: Implications for library use. *Malaysian Journal of Library & Information Science*, p. 18.
- [14] Sellen, A. (2009). Reflecting Human Values in the Digital Age. *Communications of the ACM*, 52 (3), 59-66.
- [15] Teves, G. (2013). Ups, downs and great expectations: What we need to learn from the world's experience with ICT in education. *Educators Journal*, p. 14-27.

- [16] Valencia, C. (2018). Better Opportunities in the Philippines: Encouraging More Filipino Expatriates to Come Home. *The Philippine Star*, pp. C3-C4.
- [17] Varma, S. (2013). *The Dual Nature of Prior Computer Experience: More is Not Necessarily Better for Technology Acceptance*. Albany, NY: Elsevier Limited.
- [18] Wang, C. (2014). Potential of Computer-Supported Collaborative Learning for Learners with Different Learning Styles. *Journal of Research on Technology Education*, 34 (1), 75-85.
- [19] Weigel, F. (2013). *Technical Proficiency for IS Success: Supply Chain and Information Systems Management*. Auburn, AL: Elsevier Ltd.
- [20] Wellington, J. (2000). *Educational Research: Contemporary Issues and Practical Approaches*. London: Continuum.