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Preparedness and Attitude of College Students toward ICT-Based Education In a Younger HEI in Bacoor City, Cavite, Philippines

Jonathan R. Adanza, PhD
Research Development Officer, St. Dominic College of Asia, Bacoor City, Philippines
jadanza@sdca.edu.ph

__Abstract -__ The ubiquity of ICT has been a phenomenon in any of the world's educational system. With the challenges of ASEAN integration in 2015, are new and younger HEI's and their learners coping with this trend? This study seeks to determine the preparedness and attitude of higher education students of new HEI's about ICT-based education. Descriptive design was used in this research that utilized a researcher-made questionnaire (α=.971). The results of the study show that college students have positive affirmation ("agree") about ICT use in education (x=3.71, S=.75). Moreover, it is also revealed that gender significantly influence attitude of students (z=3.91, p=.00), in which male has higher level of attitude (x=3.91) than women (x=3.61). Moreover, it demonstrates that generally preparedness towards ICT has nothing to do with the attitude of students toward ICT use in education. However, a significant negligible positive correlation is noted between exposure to ICT and attitude at .05 level of significance (r=.15; p=.002; one-tailed), which implies that the more a student is exposed to ICT, the more that one's attitude towards ICT-based education improves. It was concluded that ICT-based education through full ICT integration can be easily accepted and adapted as the new structure of education for the next years to come. Therefore, new and younger HEIs should invest more on ICT accessibility and connectivity to further enhance attitude and preparedness towards ICT-based education.

__Keywords -__ ICT-Based Education, ICT Attitude, ICT Preparedness

I. INTRODUCTION

The use of information and communications technology has been a universal phenomenon. From the invention of the wheel, to the discovery of the telephone, and to the uncovering of one of the greatest discoveries of all—the Internet; technology has encroached into the workplace. Just as the declaration of the computer as Time Magazine's *1982 Person of the Year* foreshadowed the computer's ubiquity in everyday life, we believe this symbolic award is a harbinger of vast technological and societal changes that will unfold over many years. Information technologies have become more increasingly ubiquitous and more social. [1]

In South Asia, particularly Bhutan, which is a third-world country, exponential growth of this industry has been observed since the introduction of computers in the 1980s. Pradhan (2003a) revealed that Bhutan has 1,130 internet connections yet in just two years in 2005 it increased to 3,036 (Government of Bhutan, 2006, as cited in Baggaley and Belawati (2010a)[2]. To corroborate this, an article shared that as of 2010, 40 percent of adults age 30 and over, 72 % of young adults, and 73% of teens use social network sites, with year-over-year time spent on Facebook increasing by 566%. In 2009, Twitter users were generating 35 million messages (tweets) per day. Wikipedia has more than 12 million registered users and more than 3 million content pages. Many examples of vibrant communities have emerged on the web, as well as novel forms of social-computational systems such as prediction markets, collaborative filtering, social bookmarking, online auctions, and network-based peer-production systems [3]. Indeed, these further show that ICT, particularly the Internet, is truly a global infrastructure for the 21st century- the first really new infrastructure to develop in nearly a century.

A. ICT and Education

Kozma (2010) asserted that every aspect of 21st century society is being transformed by information and communication technologies: the economy, the workplace, the home, commerce, government, the health sector and even education.[4] However, Kozma believed that ICT in education is late compared to others because according to him, educational systems (referring to changes made by ICTs to other aspects) operate much as they did at the beginning of the 20th century (cf. Roblyer and Doering, 2013a).[5]

Studies show that higher results in the students' achievement scores on high-stakes test were observed. Schools with one-to-one computing programs had 70% increase, as compared to non-one-to-one computing programs, which was only 69%. However, it was much higher, 85% increase, in schools with one-to-one computing programs that "employed strategies for success, including electronic formative assessments on a regular basis and frequent collaboration of teachers in professional learning communities" (Devaney, 2010 in Roblyer and Doering, 2013c).

Similarly, a series of studies in South Asia, primarily in Bhutan, Pakistan and Sri Lanka was done. In these studies, it was revealed that ICT, as used in education, is a welcome tool to make education more meaningful and effective (Baggaley and Belawati, 2010b; Jamtsho and Bullen, 2007; Sangi and Ahmed, 2007)[6]. Attygale, et.al (2006) in Baggaley and Belawati (2010c) noted that students have positive attitude towards ICT and its usage. It promotes a paradigm shift from teacher-based to learner-based methods (Baggaley and Belawati) and teaching becomes individualized thus promoting higher achievement results from students (Barrow, Markman, and Rouse, 2009)[7]. In a study of Jamtsho and Bullen (2007b), 77% of students and educators in higher education in Bhutan use ICT methods. Sangi and Ahmed (2007b) also noted that 80% of students and educators in Pakistan claim they use ICT in current curriculum and Wikramanayake, et.al. (2007b), claimed that 89% of students in Sri Lanka use ICT resources in their study programs.

Amidst the growing acceptability of ICT in education, governments have recognised the need for a greatly widened "mass" access to higher and further education and the need to equip national workforces with the initial grounding and "lifelong learning" skills which will be needed to provide the responsiveness and flexibility required for an ever-accelerating rate of change (Roblyer and Doering, 2013d). Furthermore, scholars argued that ICT has been so pervasive that it is no longer surprising to see the increasing interests and investments being put into the uses of ICT in education throughout the world (Baggaley and Belawati, 2010f; Pradhan, 2003; Zhang, 2004)[8].

B. Advantages of ICT in Education

The World Wide Web or simply the Internet is a rich trove of multimedia resources, interactive tools, and telecommunication facilities. It is accessible from anywhere on the planet and has searchable archives of resources including interactive, multimedia, hyperlinked materials, search engines that help users this limitless library to find what students and teachers need (Coleman, 2012). [9]

The advantages of ICT in education come with challenges. Ali (2003) categorized these challenges into three broad areas. The first has to do with participation in the information society; the second is ICT's impact on access, cost-effectiveness and quality of education, while the third is to do with the way that ICT changes the education process. Baggaley and Belawati concluded that these challenges are focused on cost of ICT which affects accessibility and affordability; training needs of the educators; inaccessibility of learning materials that are ICT supported and delivered through Internet as these are stored in closed systems. [10]

C. ICT and Education in the Philippines

The Philippine government through the DepED has shown serious commitment to ICT in education by announcing a series of initiatives to apply ICT in teaching and learning. These were aligned to the *Millennium Development Goals and the Education for All* movements. In response to the need, the ICT4E Strategic Plan came to life. In this plan, the use of ICT in teaching and learning must be accompanied by a corresponding enhancement of the school curriculum, according to the DepED. With various existing studies, a description of attitude and preparedness of college students about ICT's in new and younger HEIs needs to be studied. With the challenge of ASEAN integration in 2015, this study aims at the following objectives: (1) To determine the level of preparedness of college students of younger HEIs on ICT-based education; (2) To assess the attitude of college students of new and younger HEIs toward ICT-based education; (3) To verify if gender and ICT preparedness contribute to attitude of students toward ICT-based education; (4) To conclude whether exposure to ICTs correlates with attitude of students toward ICT-based education.

II. METHOD

This study utilized the descriptive, comparative, correlational, design in research. The 392 college students of a selected Higher Education Institution were sampled using the stratified random sampling approach. The college students are from different fields of concentration or disciplines. The data gathering was done using adapted researcher-synthesized questionnaire (a=.971) from various studies on ICT in Asian countries.

This scale was used to interpret the result on attitude towards ICT-based education: 4.20-5.00- Strongly agree; 3.40-4.19-Agree; 2.60-3.39-Neither disagree nor agree; 1.80-2.59- Disagree 1.00-1.79-Strongly disagree

III. RESULTS AND DISCUSSION

A. On the extent of exposure to ICT

The study shows that when asked about how the respondents or participants rate themselves about their exposure to ICT, the weighted mean is x=4.59 with a standard deviation of 1.35. This is interpreted from the scale of 1-6 to be occasionally exposed. The result on the extent of exposure is quite encouraging if ICT is to be fully integrated into the educational system of new HEI, as students will no longer have the hard time to adapt to the ICT environment that permeates the educational system of a country like the Philippines and the ASEAN countries.

B. On preparedness to ICT based education

"Preparedness" in this study refers to access to computers, reasons of computer use, academic or study preparations, the type of computers usually used, frequency of ICT use, and factors that can encourage ICT use in education.

Table 1. Frequency Distribution of Access (N=392)

Indicators	f	%
Use own personal computer	296	75.5
Use computer of other people/classmates/relatives	31	7.9
Use computer from shop/internet cafe	59	15.1
Use computer in school	6	1.5

It can be gleaned from Table 1 that when it comes to access to computers, majority of college students use their own personal computers (296 or 75.5%). With the advent of the Internet, use of computers became massive as shown by the study of Synovate Media Atlas conducted nationwide from July 2008 to June 2009, which reported that Internet access in the Philippines stands at 40%. Even though it was not mentioned in the study whether these children use their own computers for them to have access, the point is easy access to computers results to easy access to the Internet. However, in the same study it was also revealed that 54% of the people access the web from an Internet Cafe (54%) than at home (47%).

As to Most Common Reasons of ICT Use

Table 2: Frequency Distribution Of Most Common Reasons Of Ict Use (N=392)

Indicators	f	%
Use computer in studies/work	218	55.6
Use computer in games/recreation	68	17.3
Use computer in socialization with friends and classmates	106	27

Table 2 succinctly shows the maturity of students when it comes to ICT or computer use. Majority of college students use computer in studies or work (218 or 55.6%), more than in socialization with friends and classmates (106 or 27%) or even in games or recreation (68 or 17.3%). The Asian Institute of Journalism and Communication in its report to the UNICEF noted that schoolchildren use the Internet for communication purposes specifically for sending/receiving emails, connecting with friends, and participating in e-groups and networks. According to the Asian Institute of Journalism and Communication (AIJC), Internet is recognized as potent education tool especially among elementary schoolchildren. They do recognize the value of Internet as reflected in their use of Internet for school work.

Table 3: Frequency Distribution of Study Preparations (N=392)

Indicators	f	%
Have formal course on computers/ICT	83	21.2
Have short course on computers/ICT	141	36
No formal nor short course on computers or ICT	164	41.8

The study also demonstrates that students do not need to have formal training about computers or ICT for them to use them. Of the 392 respondents, 164 or 41.8% have no formal or short course on computers or ICT, 141 or 36% have short course and 83 or 21.2% have formal course on computers or ICT. In the study of AIJC, schoolchildren are shown to be very interested with computers and ICT despite lack of formal training.

Table 4: Frequency Distribution of Internet Connectivity (N=392)

Indicators	f	%
Computer with Internet	360	91.8
Computer without Internet	31	7.9

Table 4 shows how students look at ICT as majority of them have computers with Internet access (360 or 91.8%). Computers without an Internet connection are irrelevant and useless in the context of highly digitized societies. Educational materials need not be viewed in libraries and bookstores but can be accessed with Internet.

Table 5: Frequency Distribution of ICT Use (N=392)

Indicators	f	%
Less than once a month	35	8.9
At least once a month	54	13.8
At least once a week	294	75

The study also shows that students use ICT at least once a week (294 or 75%) may it be for studies, socialization or games. However, there are still those who use the computer at least once a month (54 or 13.8%) and even less than once a month (35 or 8.9%). The data shows how ubiquitous ICT is in the field of education.

Table 6: Frequency Distribution of Factors That Would Encourage ICT Use (N=392)

Indicators	f	%
Easier access at school	218	55.6
Free and cheap access	65	16.6
Easier access at home	85	21.7
Free/cheaper lessons	20	5.1

It can be gleaned from Table 6 that easier access at school encourages the students towards ICT use (218 or 55.6%). Naturally, since students spend most of their time at school than their homes, access to an ICT facility is of paramount importance to a student.

C. On attitude towards ICT-based education
Table 7: Attitudes Towards ICT-Based Education (N=392)

Indicators	Mean	Qualitative Interpretation
1. Easier access at school	3.95	Agree
2. Free and cheap access	3.41	Agree
3. Easier access at home	3.90	Agree
4. Free/cheaper lessons	3.87	Agree
5.One does not need to be a "brain" to work with computers.	3.38	Neither disagree nor agree
6. ICT-enabled learning is interactive and interesting.	3.75	Agree
7. Email is an effective means of communication between the teacher and students.	3.73	Agree
8. Social networking is an effective means of communication between teachers and students.	3.72	Agree
9. It is easy to use the computer/internet for studying.	3.76	Agree
10. ICTs increase motivation to study.	3.68	Agree
11. ICT makes my lessons more interesting.	3.72	Agree
12. ICT helps to increase my efficiency.	3.71	Agree
13. ICT is affordable for my studies.	3.70	Agree
Overall	3.71	Agree

Further, the study shows that students agree on almost all positive things about ICT and computers

(x=3.71, S.D.=.75), except the belief that one does not need to be intelligent or a "brain" to work with ICT or computers as students neither agree nor disagree (x=3.38, SD=1.12) with it. As the result shows, some students believe that one needs to be a "brain" when one works with computers while others do not believe in that. However, they are all in harmony (between 3.40-4.19) to affirm that it is easier to learn with ICTs around; one can learn more from ICTs than from books; ICTs can help one to learn; computers are necessary tools in educational settings; ICT-enabled learning is interactive and interesting; e-mail is an effective means of communication between the teacher and students; social networking is an effective means of communication; it is easy to use computers for studying; ICTs increase motivation to study; ICT makes lessons more interesting; it helps increase efficiency of students; and ICT is affordable for studies.

D. On the difference of attitude when grouped according to Gender
Table 8. Summary of the Difference in Attitude According to Gender

Indicators	z-value	p-value	Q.I.
1. Easier access at school	2.067	.039	S
2. Free and cheap access	4.373	.000	S
3. Easier access at home	2.382	.018	S
4. Free/cheaper lessons	3.347	.001	S
5. One does not need to be a "brain" to work with computers.	2.244	.025	S
6. ICT-enabled learning is interactive and interesting.	4.236	.000	S
7. Email is an effective means of communication between the teacher and students.	3.675	.000	S
8. Social networking is an effective means of communication between teachers and students.	3.217	.001	S
9. It is easy to use the computer/internet for studying.	2.211	.028	S
10. ICTs increase motivation to study/teach.	2.604	.010	S
11. ICT makes my lessons more interesting.	2.173	.030	S
12. ICT helps to increase my efficiency.	3.335	.001	S
13. ICT is affordable for my studies/teaching.	1.609	.108	S
Overall	3.912	.000	S

Legend: Q.I.- Qualitative Interpretation; NS- There is no significant difference; S- There is a significant difference

Table 8 succinctly demonstrates how gender influences attitudes of students toward ICT-based education as the overall positive attitude differs largely when gender is considered (z=3.91, p=.00).

Statistics shows that in this study male has a more positive attitude (x=3.91) than female (x=3.61) and this is statistically significant. There are plausible reasons for this and one of these are men are more technologically inclined than women.

In a study conducted by Synovate Media Atlas (2008) as cited by the Asian Institute of Journalism and Communication in its report to UNICEF, the Internet non-users are mostly female children enrolled in public elementary schools. However, when it comes to access to the Internet, there is no gender bias as there is an equal split of male and female Internet users except Mindanao. But when it comes to how early usage of ICT is, boys are earlier users than girls as it is surmised that computers are considered also as toys and young boys are more attracted to gadgets than girls. This may explain the slight "divide" between men and ladies when it comes to attitude towards ICT-based education.

E. On the Difference of Attitude According to Preparedness

Table 9: Difference of Attitude According to Access to Computers

Indicators	F-value	p-value	Q.I.
1. Easier access at school	.92	.433	NS
2. Free and cheap access	.77	.514	NS
3. Easier access at home	1.04	.377	NS
4. Free/cheaper lessons	1.58	.195	NS
5. One does not need to be a "brain" to work with computers.	.25	.862	NS
6. ICT-enabled learning is interactive and interesting.	.78	.506	NS
7. Email is an effective means of communication between the teacher and students.	.94	.423	NS
8. Social networking is an effective means of communication between teachers and students.	.25	.861	NS
9. It is easy to use the computer/internet for studying.	.67	.572	NS
10. ICTs increase motivation to study/teach.	1.15	.330	NS
11. ICT makes my lessons more interesting.	.93	.428	NS
12. ICT helps to increase my efficiency.	1.70	.166	NS
13. ICT is affordable for my studies/teaching.	1.34	.262	NS
Overall	.82	.484	NS

Table 9 reflects that when it comes to access to computers, attitude of students do not differ significantly. This implies that whether students have their own computers or they are using the computer units of the school, internet cafes/shops, or friends and relatives, their attitude towards ICT is the same and notably positive.

Table 10: Differences in Attitude according to Most Common Reasons to Computer Use

Indicators	F-value	p-value	Q.I.
1. Easier access at school	.46	.63	NS
2. Free and cheap access	2.92	.06	NS
3. Easier access at home	.51	.60	NS
4. Free/cheaper lessons	.07	.93	NS
5. One does not need to be a "brain" to work with computers.	.94	.39	NS
6. ICT-enabled learning is interactive and interesting.	.36	.70	NS
7. Email is an effective means of communication between the teacher and students.	.64	.53	NS
8. Social networking is an effective means of communication between teachers and students.	2.39	.09	NS
9. It is easy to use the computer/internet for studying.	1.69	.19	NS
10. ICTs increase motivation to study/teach.	1.80	.17	NS
11. ICT makes my lessons more interesting.	.16	.85	NS
12. ICT helps to increase my efficiency.	**3.07**	**.05**	**S**
13. ICT is affordable for my studies/teaching.	1.56	.21	NS
Overall	.77	.46	NS

Similarly, as to most common reasons of computer use, statistics reveals that in the overall there is no significant difference in the attitude of students when grouped according to common reasons of computer use (F=.77; p=.46), except on the indicator which asks whether ICT helps increase efficiency of students (F=3.07; p=.05) which signifies there is a significant difference in the level of attitude. This implies that for those who use computers to study and for school work finds ICT-based education very agreeable as statistics show that this group has a weighted mean of 4.14 for attitude, higher than the second reason which is 3.68 for those who use computer and ICT for socialization.

Furthermore, what is interesting to note aside from the effect of ICT to efficiency even it is not statistically significant is the second nearest which has the probability value of .06; that is the claim that one can learn from computer or other technologies than from books. Previous studies in some Asian countries like Bhutan show that many still look at books as sole source of knowledge despite the onslaught of ICTs in the arena of education. Students rate this indicator a moderately high 3.41 but it is not statistically significant when grouped according to reasons of computer use.

Table 11: Differences in Attitude According to Study Preparations

Indicators	F-value	p-value	Q.I.
1. Easier access at school	.06	.95	NS
2. Free and cheap access	1.49	.23	NS
3. Easier access at home	.67	.51	NS
4. Free/cheaper lessons	.06	.95	NS
5. One does not need to be a "brain" to work with computers.	.14	.87	NS
6. ICT-enabled learning is interactive and interesting.	.01	.99	NS
7. Email is an effective means of communication between the teacher and students.	1.40	.25	NS
8. Social networking is an effective means of communication between teachers and students.	1.74	.18	NS
9. It is easy to use the computer/internet for studying.	1.64	.20	NS
10. ICTs increase motivation to study.	2.31	.10	NS
11. ICT makes my lessons more interesting.	2.06	.13	NS
12. ICT helps to increase my efficiency.	.96	.38	NS
13. ICT is affordable for my studies/teaching.	.94	.39	NS
Overall	1.23	.29	NS

Table 11 shows that computer studies and other kind of academic preparations do not influence the attitude of students toward ICT-based education as there is no significant difference was noted even in a single indicator, much more the overall the attitude. The nearest of them all has a probability of .10 but is doubly higher than the .05 limit. This indicator conveys a message that ICT increases motivation to study but still it is not significant. Trainings about ICT may not really influence a student to have a positive attitude toward ICT-based education.

Table 12: Differences of Attitude According to Types of Computers Used

Indicators	Z-value	p-value	Q.I.
1. Easier access at school	**3.27**	**.003**	**S**
2. Free and cheap access	1.48	.15	NS
3. Easier access at home	**2.42**	**.021**	**S**
4. Free/cheaper lessons	1.93	.062	NS
5. One does not need to be a "brain" to work with computers.	.94	.35	NS
6. ICT-enabled learning is interactive and interesting.	**2.12**	**.041**	**S**
7. Email is an effective means of communication between the teacher and students.	1.12	.27	NS
8. Social networking is an effective means of communication between teachers and students.	-.48	.64	NS
9. It is easy to use the computer/internet for studying.	.89	.38	NS
10. ICTs increase motivation to study/teach.	-1.79	.083	NS
11. ICT makes my lessons more interesting.	-1.05	.302	NS
12. ICT helps to increase my efficiency.	-1.32	.196	NS
13. ICT is affordable for my studies.	**-3.08**	**.004**	**S**
Overall	.781	.44	NS

It can be gleaned from Table 12 that the overall mean does not show significant difference (z=.78; p=.44) when grouped according to types of computer used—with or without internet connection, however in some indicators there is a significant difference. For instance, there is a significant difference in the way those who use computer with internet and those who do not have internet connection answer the statement that it is easy to learn when one uses ICT (z=3.27; p=.003). Basically, there is a difference because to those with an Internet connection, higher score was given to this indicator (x=4.04) and to those without Internet connection, lower score was given (x=3.03).

Likewise, with the statement that says, "A computer can help one to learn", a significant difference is noted (z=2.42; p=.021). The same with the statements, "ICT-enabled learning is interactive and interesting" (z=2.12; p=.041) and "ICT is affordable for my studies" (z=-3.08; p=.004) significant difference was also computed. Of course, those with Internet connection rate the higher score than those without connection. The study just proves how Internet has molded the minds of people. Roblyer and Doering (2013) emphasized how the Internet drastically changed the landscape of learning and education.

Table 13: Differences of Attitude According to Frequency of Computer Use

Indicators	F-value	p-value	Q.I.
1. Easier access at school	2.48	.09	NS
2. Free and cheap access	1.19	.31	NS
3. Easier access at home	1.17	.31	NS
4. Free/cheaper lessons	1.46	.24	NS
5. One does not need to be a "brain" to work with computers.	.10	.90	NS
6. ICT-enabled learning is interactive and interesting.	.006	.99	NS
7. Email is an effective means of communication between the teacher and students.	1.14	.32	NS
8. Social networking is an effective means of communication between teachers and students.	2.55	.08	NS
9. It is easy to use the computer/internet for studying.	1.43	.24	NS
10. ICTs increase motivation to study.	2.86	.06	NS
11. ICT makes my lessons more interesting.	1.17	.31	NS
12. ICT helps to increase my efficiency.	1.74	.18	NS
13. ICT is affordable for my studies/teaching.	.83	.44	NS
Overall	.54	.59	NS

Frequency of computer use does not really prove to be a factor to consider when attitude toward ICT-based education is assessed (F=.54; p=.59). However, what comes close is the statement that conveys that the student is motivated with ICT around (F=2.86; p=.06) but still this is not statistically significant. Whether one uses ICT or computers once a week or once a month, or once a year or every day, attitude towards computer does not vary. This may be true because not all the time that people use ICT is for the purpose of studying or research even though in this study the highest purpose of using ICT is academic-related activities like research, but still it cannot be denied that many users of ICT use the Internet for socialization and for entertainment. Moreover, this also exemplifies the cliché of the importance of quality over quantity. Ten hours of gaming is not equal to one hour of pure research when quality of education is the sole norm.

Table 14: Differences of Attitude According to factors of Computer Use

Indicators	F-value	p-value	Q.I.
1. Easier access at school	2.33	.07	NS
2. Free and cheap access	1.29	.28	NS
3. Easier access at home	1.95	.12	NS
4. Free/cheaper lessons	.78	.51	NS
5. One does not need to be a "brain" to work with computers.	2.5	.06	NS
6. ICT-enabled learning is interactive and interesting.	**2.59**	**.05**	**S**
7. Email is an effective means of communication between the teacher and students.	.19	.90	NS
8. Social networking is an effective means of communication between teachers and students.	.69	.56	NS
9. It is easy to use the computer/internet for studying.	1.29	.28	NS
10. ICTs increase motivation to study/teach.	1.42	.24	NS
11. ICT makes my lessons more interesting.	.93	.43	NS
12. ICT helps to increase my efficiency.	1.53	.21	NS
13. ICT is affordable for my studies/teaching.	1.37	.25	NS
Overall	2.00	.11	NS

Table 14 aptly reflects the idea that the level of attitude toward ICT-based education is generally not

affected by factors construed to be encouraging to students to use ICT in their studies (F=2; p=.11) except in one indicator that talks about ICT-enabled learning is interactive and interesting. Further, in this indicator, the attitude level of those which choose the factor "free and cheap access to ICT" is higher (x=4.0) than those who choose the factor which is easier access at home and school (x=3.7). This is a statistically significant variance (F=2.59; p=.05). Despite its insignificance, the indicator that states that one does not need to be "brain" to work with computers follows as second (F=2.50; p=.06) and "it is easy to learn when one uses ICTs" (F=2.33; p=.07) is third.

F. On Relationship Between Exposure and Attitude

Table 15. Relationship Between Exposure and Attitude

Indicators	r-value	p-value (1-tailed)	Q.I.
1. Easier access at school	.1	.03	SC
2. Free and cheap access	.172	.000	SC
3. Easier access at home	.113	.014	SC
4. Free/cheaper lessons	.137	.004	SC
5. One does not need to be a "brain" to work with computers.	.220	.000	SC
6. ICT-enabled learning is interactive and interesting.	.125	.007	SC
7. Email is an effective means of communication between the teacher and students.	.099	.026	SC
8. Social networking is an effective means of communication between teachers and students.	.096	.030	SC
9. It is easy to use the computer/internet for studying.	.103	.022	SC
10. ICTs increase motivation to study.	.070	.084	NSC
11. ICT makes my lessons more interesting.	.057	.132	NSC
12. ICT helps to increase my efficiency.	.097	.029	SC
13. ICT is affordable for my studies/teaching.	.027	.299	NSC
Overall	.150	.002	SC

Legend: NSC-No significant correlation; SC- With significant negligible correlation

In the overall picture, there is a significant negligible positive correlation between exposure to ICT and attitude towards ICT-based education at .05 level of significance (r=.15, p=.002; both one and two-tailed tests). Specifically, almost all statement indicators share the same level of correlation except three statements: "ICTs increase motivation to study" (r=.07; p=.08); "ICT makes my lessons more

interesting" (r=.06; p=.13); and "ICT is affordable for my studies" (r=.03; p.30) that have no significant correlation with the level of exposure to ICTs. This shows that the more a student is exposed to ICT in the course of one's study, the more that one's attitude toward ICT-based education improves.

IV. CONCLUSIONS AND IMPLICATIONS

College students of new and younger HEIs are occasionally exposed to ICT and computers as used in the field of education. This implies that ICT-based education can be easily accepted and adapted as the structure of education for the next years to come.

College students of new and younger HEIs are prepared for ICT-based education because they use their own Internet-connected computers at home for educational purposes despite the fact that majority of them do not have formal education and training on ICT and computers. They use computers at least once a week. They will be more encouraged to use computers if there is an easier access of computers and ICT at school. Therefore, schools should invest with ICT and computers for the students to be more motivated.

Further, college students of new and younger HEIs accept and agree to all aspects of ICT-based education as the new landscape of the new millennium in the Philippines and Asia. Thus, this should motivate new and younger HEIs to uphold ICT not as an option but a must to their educational system. There is indeed a must for full integration of ICT in the educational system of new and younger HEIs.

Male college students have more positive attitude towards ICT-based education than female students. Therefore, HEIs should give each student regardless of gender equal opportunities for exposure and encounter with ICT and computers.

Connectivity to the internet influences attitude of college students towards ICT and computers use in education. Therefore, new and younger HEIs should invest commitment and facility to make Internet accessible for all students in school through wifi or any type of connectivity to bolster attitude of college students towards ICT-based education.

Since exposure to computers create more positive attitude towards ICT-based education, full integration of ICT should be purposively done in the curriculum of all new and younger HEIs who have not yet into it. This is to maximize exposure of students to ICT and ICT-based education.

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