

Impact Factor:

ISRA (India)	= 3.117	SIS (USA)	= 0.912	ICV (Poland)	= 6.630
ISI (Dubai, UAE)	= 0.829	PIHHI (Russia)	= 0.156	PIF (India)	= 1.940
GIF (Australia)	= 0.564	ESJI (KZ)	= 8.716	IBI (India)	= 4.260
JIF	= 1.500	SJIF (Morocco)	= 5.667	OAJI (USA)	= 0.350

SOI: [1.1/TAS](#) DOI: [10.15863/TAS](#)

International Scientific Journal Theoretical & Applied Science

p-ISSN: 2308-4944 (print) e-ISSN: 2409-0085 (online)

Year: 2019 Issue: 02 Volume: 70

Published: 23.02.2019 <http://T-Science.org>

QR – Issue



QR – Article



**SECTION 21 Pedagogy, Psychology and
Innovation in the field of education.**

Solomon Oluyinka
Ph.D, Research Consultant
College Instructor
Baliuag University
Baliuag, Bulacan Philippines
solomon467@gmail.com

Anatalia N. Endozo
Ph.D, Associate Professor
College Instructor
Angeles University Foundation
Angeles City, Philippines
endozo.anatalia@auf.edu.ph

TECHNOLOGY INTEGRATION READINESS OF INSTRUCTORS AND LEARNERS IN TERTIARY EDUCATION

Abstract: This study compares the attitudes and readiness of respondents from selected universities on the use and integration of technology amid of teaching and learning practices. A total of 198 learners from two selected higher educational institutions in the Philippines were involved, questionnaire considered as the instrument. The significant of this study based on U Mann -Whitney and t-tests reports from SPSS version 22. According to the results, respondents of this study from selected universities have clear knowledge on the specific technologies used in the teaching and learning process like computers and hand-held gadgets. Furthermore, the differences between universities did not depend on gender or race. The findings also indicated that technology integration and acceptance in these programs was still in the developmental stages.

Key words: Physical education, technology, integration, Instructors, Learners, CANVAS.

Language: English

Citation: Oluyinka, S., & Endozo, A. N. (2019). Technology integration readiness of instructors and learners in tertiary education. *ISJ Theoretical & Applied Science*, 02 (70), 179-188.

Soi: <http://s-o-i.org/1.1/TAS-02-70-18> **Doi:**  <https://dx.doi.org/10.15863/TAS.2019.02.70.18>

1 Introduction

Inquiries on how technological education effects teaching and learning, identifying tools or innovation in terms of technology in the relationship to learners levels of engagement and collaboration, however, to encourage thinking skills faculty of learners in the educational realm become serious concern. When mentioning efficacy of teaching and learning process, interactivity on the technology environments is a very important feature for teaching and learning. These makes easy for teachers and learners to revisit specific parts of the learning environment to explore them fully, to test ideas, and to receive feedbacks. Thus, one of the significant considerations is to equip instructors and learners to infuse the use of updated technologies in their run

through [1, 2]). According to Smith [3] with the increased use of technology nowadays, it is important that teachers and learners are prepared to use technology in the teaching and learning process. Teachers should prepare and expose learners to integrate technology into classrooms and instruction. The sense of readiness in the use of computers in education, the uses of technology in methods courses and the importance of technology experiences in the student teaching experience is imperative.

Studies identified that training while in service and use of the internet for instructional and learning purposes are associated to instructors and learners' self-confidence and emotional state of being ready to incorporate technology in their teaching and learning space or educational space, time limitations may impede instructors and learners positively from

Impact Factor:

ISRA (India)	= 3.117	SIS (USA)	= 0.912	ICV (Poland)	= 6.630
ISI (Dubai, UAE)	= 0.829	PIHHI (Russia)	= 0.156	PIF (India)	= 1.940
GIF (Australia)	= 0.564	ESJI (KZ)	= 8.716	IBI (India)	= 4.260
JIF	= 1.500	SJIF (Morocco)	= 5.667	OAJI (USA)	= 0.350

incorporating technology into teaching and learning was identified in studies [4, 5, 6]. Furthermore, instructors' capacity towards utilizing an advanced learning material adds the learners commitment and towards accomplishment of learning objectives [7, 8]. Consequently, the learners may demonstrate an effective attitude closer to technology after experiencing the usage of them [9, 10, 11]. Preparing instructors and learners adopt and use of different technologies and equipment not only component to help them to incorporate ICT in the lecture hall or classroom. Numerous aspects ought to be deliberated when determining which tools to adopt. A vital argument is that teachers and learners are expected to be part about what kind of technology to be included in their programs [12, 13]. One of the key difficulties is that instructors have tendency to embrace innovation advancement since it is open without considering in the event that it will support and meet the learning desires for the learners [14]. Sadik [15] affirmed that utilization of technology devices unmistakably could make teaching and learning more meaningful and fun. Innovation ought to be utilized to encourage psychological handling and draw in understudies in basic, higher request contemplating situation, to help in communication, community oriented, and aids learners in the understanding of classes [16]. However, field of physical education is not exempted from these aforementioned challenges. It may appear that the recreation centers may be most dependable spot where innovations would have a solid impact in educational programs and guidance [17].

In line with that, Liang et al [18] physical education teachers and students seem not sure or confident to incorporate technology in the teaching and learning process. Physical education instructors ought to have an understanding how computers and other technological devices like heart rate screens, gesticulation sensors, pedometers, body analyzers, computer-aided health-technology, etc.), assist in collection of information and data for the improvement of better teaching approaches, to the inquiry of sport skills, to the assessment of learners' knowledge, and to the assessment of health associated physical and mental fitness.

Existing authenticated programs in instructional technology offered in the Philippines seems not fully addressing professional needs of physical education instructors and learners in areas such fitness, wellness, and management system of sports. As a result, this study aimed to investigate and compare attitudes in the direction of computers usage and the readiness to adopt and integrate technology in the teaching and learning among selected respondents from two selected higher educational institutions in the Philippines. It was normal that finding out about instructors' groundwork for use of instructional technological know-how would bolster the

advancement of professional sequence and an authenticated program in connection to applied technology in exercise and physical education.

2 Related Literatures

The essential to get ready instructors to integrate technology (ICT) into teaching and learning has been stressed by Commission on Higher Education, abbreviated as CHED, and the Department of Education (DepEd) as these boards approve designed curriculums, carry out, and assess learning skills and practices to engage learners and improve learning environments; enhance quality professional practice; and provide significant positive models for learners, faculty members, and the community as a whole [19, 20]. Juniu et al [21] suggested in relation to transformation of the instructors should be and significance of technology education programs and adoption of recent technology in their careers, Furthermore, equipping instructors in the use of technology is making innovations an adorable experience, thus increasing the know-how and aptitudes [22], more utilization of technology innovation in teaching courses and field encounters with learners is further emphasized [23, 24].

Despite these initiatives, scholars affirmed that obstacles such as partial managerial and financial supports existed and as a result, instructors were less likely to integrate technology while teaching [25, 26], study by Goldshtein et al [27] argued most instructors who enter universities and colleges have fundamental ICT experiences and positive attitudes towards technology integration in education [28, 29], but instructors' training and development programs do not provide satisfactory abilities and skills to deliver lectures with technology.

Furthermore, instructors and learners were exposed to the old version method of ICT integration in delivering lectures, inquiry based-learning, synchronous web-based learning, and e-learning merely adopted by the instructors. For instance, instructors have slight knowledge in using the partial least squares algorithm and learning and communication platform (CANVAS); therefore, they are not sufficiently exposed to the advantages of that learning and teaching with that technology [23]. Therefore, practical experience in technology integration in the relationship with the instructor's readiness considered very important [30].

2.1 Technology know-how for physical education instructors

Technology incorporation in physical education requires instructors to acquire and implement acquaintance knowledge, broad pedagogics, and updated technologies [31]. Because physical education is frequently in a gymnasium hall or spacious rooms, it is essential for instructors to organize and inject innovations that will bolster the

Impact Factor:

ISRA (India)	= 3.117	SIS (USA)	= 0.912	ICV (Poland)	= 6.630
ISI (Dubai, UAE)	= 0.829	PIHHI (Russia)	= 0.156	PIF (India)	= 1.940
GIF (Australia)	= 0.564	ESJI (KZ)	= 8.716	IBI (India)	= 4.260
JIF	= 1.500	SJIF (Morocco)	= 5.667	OAJI (USA)	= 0.350

instructive methodologies utilized in those settings. Instructors need to absorb and practice teaching abilities in a context as similar as possible to the intended to teach in forthcoming, using workout equipment to measure bodily activity movement and motor-skill capacity performance.

Woods et al [32] listed tri-fit, fitness-gram, and activity-gram software packages adoptable to analyze and keep records physical activity, fitness as well as measuring nutrition habits. Juniu et al [21] concurred that PE head or chair has an elective application to follow and to assess the learners' performance through tests, rubrics, and assignments on a cell phone. In addition, Leight [33] affirmed technology was not being effectively infused across the program. The results of this prompted changes in the program to address the need to prepare physical education instructors to use different types of technology in their teachings. Fonseca et al [34] affirmed learners tend to improve in their academic performance when trained with technology instructional materials and equipment, a study by Fathema [34] affirmed that the impact of learning management systems in higher education cannot be ignored. Adoption of technology useful for physical education classes such as pedometers and heart rate screens monitors suggested in the study.

Aforementioned, this study examined and compared attitudes towards integration of technology in the teaching and learning practices of two selected higher educational institutions in the Philippines namely: Baliuag University and Angeles University Foundation. The expected outcome of this study will add the established debased related studies on integration of ICT into physical education programs. The objectives of this current study included investigation on readiness level of physical education learners towards technology (ICT), attitudes towards incorporating technology into teaching and identify differences between the two university learners demographic profiles based on gender and university year level. It also included assessing students' attitudes towards computers, perceived facilitative condition towards computers accessibility, learners' point of view in terms of their readiness towards ICT integration in teaching, technology knowledge attained through coursework, and point of view of instructors modeling the usage of the computers.

3. Material and Research Methods

3.1 Participants and Procedures

This is a descriptive study; selected student-respondents from Baliuag University, Bulacan, Philippines and Angeles University Foundation, Philippines, questionnaire was based from reviewed publications related to technology acceptance, physical education and interviews with twelve officials of selected higher educational institutions in

the Philippines. The publications reviewed were within two decades in social science physical education and technology management field of studies. Nevertheless, the theoretical framework established within the range of 1989 to 2018 publications to figure the assumption for this study

Both mentioned universities adopting Canvas as cloud learning management system that facilitates teaching and learning. The canvas tools designed to be used online, on smart-mobile and on tablets, desktop and laptops. All registered learners in both universities most have a generated email account. Thus, this study makes use of their canvas email to invite them to be part of this study. The email comprised a brief justification of the study and a linkage to the questionnaire page. Submitted questionnaires completed by learners monitored and encoded in the data view of SPSS version 22 for further statistical analysis.

A pilot examination conducted prior to the final questionnaire administration. This was done to ascertain questionnaire clarity. A sum of 20 questionnaires used to justify the clarity of the questionnaire adopted as the instrument of this study.

3.2 Questionnaire adopted as instrument

Questionnaire generated from considered publications in relation to the instructors technology incorporation studies modified as this study instrument. The generated questionnaire concentrated on instructors' attitudes and point of view on readiness to embrace and integrate technology in the teaching and learning. A total number forty-fives items adapted to assess demographic contextual related attitudes; the accessibility to computers within the university mentioned the readiness to deliver lectures with updated supported technologies, and modeling computer usage among instructors.

The independent factors included the gender (male and female), and learners year level (year 1 to year 4 learners). The dependent factors exploited in this study included attitude of learners towards computers, accessibility of the computers at university, learners' point of view in term of readiness to integrate ICT in teaching, technology knowledge attained through coursework and learners' point of view towards instructors modeling computer usage.

A four-point Likert scale options and six items on attitudes towards adoption of computers, five items on accessibility to computers and a number of 5 items on learners point of view of instructors modeling the usage of the computers with same aforementioned four-point Likert scaling using the description such as: 4-strongly disagree, 3-disagree, 2-agree, and 1-strongly Agree. However, a three-point Likert scale and 14 items on readiness to deliver lectures with computers, (1-unprepared, 2-

Impact Factor:

ISRA (India) = 3.117	SIS (USA) = 0.912	ICV (Poland) = 6.630
ISI (Dubai, UAE) = 0.829	PIHHI (Russia) = 0.156	PIF (India) = 1.940
GIF (Australia) = 0.564	ESJI (KZ) = 8.716	IBI (India) = 4.260
JIF = 1.500	SJIF (Morocco) = 5.667	OAJI (USA) = 0.350

somewhat prepared and 3-prepared) adopted, technology knowledge attained through coursework measures included 13 items rated on a four-point option ranging from 1 to 4 using (4 - all the courses, 3-most of the courses, 2- in a little courses, 1-nil of the courses.

Kaiser-Meyer-Olkin (KMO) test of sample adequacy achieved (0.82) for School B and (0.88) for the School A to justify the correlation assumption, all factors loading above (i.e. FA < 0.6). All average variance extracted (i.e. AVE) above 0.5, composite reliability above 0.6 and cronbach's alpha above 0.7 achieved in each construct. The constructs analyzed with SPSS version 22 properties

3.3 Data Analysis

The analysis of this study based on 198 sample size, a descriptive statistic version 22 adopted to justify the reliability and validity of the dependent and independent. A total number of 93 samples considered usable in the case of School B (BU) and a sample of 105 students accepted in the case of School A (AUF).

In addition, homogeneity assumptions checked and all the expected significant level achieved, ANOVA possibility not befitting because different variance achieved in both universities. A two-way test of variance on physical phenomenon between institutions and gender not supported. Thus, this study adopted a one-way ANOVA assumption to analyze the variation between the universities and

gender in the relationship with attitudes to use and access computer, technology knowledge attained through coursework and the point of view instructors modeling computer usage. T-test outcomes elaborated later. U tests established by Mann-Whitney adopted to analyze the differences between universities and the gender in the relationship of the learners' readiness to use technology (computers) and learning management systems. Data distributed justified uneven, therefore, Kruskal-Wallis assumption considered analyze the point of view to incorporate technology in teaching and learning. The relationship between learners' attitudes and point views on program readiness to use and integrate technology in the teaching endeavors results based on chi-square independence test reports

4. Results and Discussions

Frequency and percentage data of the responses indicated that 93 participants were from School B (BU) and 105 participants were from School A (AUF). Forty-two percent of the 198 participants were male, 58% were females. Most of learners at BU and AUF dominated by year 4 with 34% and year 1 with 28% learners and year 2 reported as 22% on the part of year 3 a 16% of 198 participants reported in this study. Detailed in founded in the table 1 of this study.

Table 1. Descriptive Statistics for School B and School A.

Categories	Total School A and B N=198		School	
			School B N = 93	School A N = 105
Gender	Male	83	38	45
	Female	115	55	60
Learners University' Year Level	Year1	55	26	29
	Year2	43	20	23
	Year3	32	11	21
	Year4	68	36	32

4.1 Academic differences between two universities

The t-test performed reported a mean of 2.964 in the case of School B and a mean value of 2.881 reported in the case of School A learners. This could be interpreted that School B learners expected to

have a better attitude towards usage of computers than School A learners in this study. Thus, details comparison of School A and School B learners' attitude to use computer founded in the table 2 of this study.

Table 2. School B and School A Students' attitude to use computer.

Variables	School	N	Mean (x)	Standard Deviation	t-test	p-value
ATTITUDE1	B	093	3.31	0.619	0.086	0.879
	A	105	3.29	0.669		
ATTITUDE2	B	093	3.02	0.663	2.787	0.005
	A	105	2.78	0.868		
ATTITUDE3	B	093	3.27	0.507	3.010	0.002
	A	105	3.47	0.649		

Impact Factor:

ISRA (India) = 3.117	SIS (USA) = 0.912	ICV (Poland) = 6.630
ISI (Dubai, UAE) = 0.829	PIHHI (Russia) = 0.156	PIF (India) = 1.940
GIF (Australia) = 0.564	ESJI (KZ) = 8.716	IBI (India) = 4.260
JIF = 1.500	SJIF (Morocco) = 5.667	OAJI (USA) = 0.350

ATTITUDE4	B	093	3.08	0.824	1.179	0.240
	A	105	3.20	0.910		
ATTITUDE5	B	093	2.97	0.663	5.400	0.000
	A	105	2.48	0.901		
ATTITUDE6	B	093	3.11	0.608	1.863	0.064
	A	105	2.99	0.784		
ATTITUDE7	B	093	2.19	0.767	0.923	0.357
	A	105	2.28	0.933		

Significant: $p < .05$

This results could traced to the facts that BU students and instructors and mandated to use the learning management system called CANVAS,

accessibility to computer within universities detailed in the table 3 of this study.

Table 3. Accessibility to computers in the university.

Variables	School	N	Mean (x)	Standard Deviation	t -test	p-value
ACCESSIBILITY1	B	093	3.39	0.643	1.870	0.141
	A	105	3.53	0.637		
ACCESSIBILITY2	B	093	3.33	0.621	2.154	0.033
	A	105	3.19	0.792		
ACCESSIBILITY	B	093	3.60	0.558	6.502	0.000
	A	105	3.92	0.358		
ACCESSIBILITY4	B	093	3.59	0.545	5.388	0.000
	A	105	3.88	0.429		

Significant: $p < .05$

Based on the table 3 t-test reports, a mean value of 3.642 achieved in the case of School A and a mean value of 3.55 achieved in the case of School B learners. This could be interpreted that School A learners expected to have access to computers than School B learners in this study. Next performed t-test technology know-how attained during coursework.

The t-test outcomes specified a mean value of 2.3 in the case of School B learners and a mean value of 1.81 achieved in the case of School A. This could be interpreted that the School B learners expected to attain technology know-how than School A learners while coursework in progress, detailed in the table 4 of this study.

Table 4. Technology know-how attained during coursework.

Variables	School	N	Mean	Standard Deviation	t -test	p-value
Technology Know-how1	B	093	2.99	0.708	2.606	0.01
	A	105	2.75	0.990		
Technology Know-how2	B	093	2.96	0.667	3.218	0.001
	A	105	2.68	0.846		
Technology Know-how3	B	093	2.80	0.654	3.746	0.000
	A	105	2.49	0.837		
Technology Know-how4	B	093	1.50	0.661	0.408	0.689
	A	105	1.45	0.690		
Technology Know-how5	B	093	1.83	0.622	10.067	0.000
	A	105	1.24	0.433		
Technology Know-how6	B	093	1.60	0.661	0.301	0.766
	A	105	1.59	0.546		
Technology Know-how7	B	093	1.81	0.691	7.323	0.000
	A	105	1.28	0.540		
Technology Know-how8	B	093	2.75	0.808	4.450	0.000
	A	105	2.29	0.961		
Technology Know-how9	B	093	1.94	0.792	7.048	0.000
	A	105	2.29	0.945		
Technology Know-how10	B	093	2.64	0.747	6.829	0.000

Impact Factor:

ISRA (India) = 3.117	SIS (USA) = 0.912	ICV (Poland) = 6.630
ISI (Dubai, UAE) = 0.829	PIHHI (Russia) = 0.156	PIF (India) = 1.940
GIF (Australia) = 0.564	ESJI (KZ) = 8.716	IBI (India) = 4.260
JIF = 1.500	SJIF (Morocco) = 5.667	OAJI (USA) = 0.350

	A	105	1.97	0.932		
Technology Know-how11	B	093	2.14	0.745	8.909	0.000
	A	105	1.36	0.751		
Technology Know-how12	B	093	1.86	0.768	9.660	0.000
	A	105	1.16	0.501		
Technology Know-how13	B	093	1.87	0.768	12.131	0.000
	A	105	1.18	0.501		

Significant: $p < .05$

This could be interpreted that the School B learners seems obtain technology know-how than School A learners while coursework in progress, as detailed in the table 4 of this study. The t-test outcomes specified a mean value of 2.92 in the case of School B learners and a mean of 2.56 achieved in

the case of School A, this result could be interpreted that the School B learners expected to pinpoint their instructors' model computer use in the lecture hall than School A learners, detailed in the table 5 of this study.

Table 5. Instructors as model to use computer.

Variables	School	N	Mean (x)	Standard Deviation	t-test	p-value
Instructor as a Model1	B	093	3.01	0.520	3.302	0.00
	A	105	2.76	0.819		
Instructor as a Model2	B	093	3.10	0.531	1.329	.0189
	A	105	3.00	0.730		
Instructor as a Model3	B	093	2.82	0.668	8.930	0.000
	A	105	2.07	0.764		
Instructor as a Model4	B	093	3.02	0.852	1.515	0.138
	A	105	2.93	0.729		
Instructor as a Model5	B	093	2.57	0.750	5.512	0.000
	A	105	2.08	0.793		

Significant: $p < .05$

As aforementioned, U test Mann-Whitney specification was adopted to compare the readiness towards technology integration in teaching the learners. This study statistically justified with U test that there is significant difference between the School B (BU) and School A (AUF) readiness

towards technology integration in teaching the learners with computer U-test reported beta of 4780.000 at $p < .000$. In a nutshell, this result could interpret that the School B more ready to teach with the aids of computer than School A learners, detailed in the table 6 of this study.

Table 6. Technology integration readiness.

Variables	School	N	Mean score ranking	U-test	p-value
ICT Readiness1	B	093	163.00	9172.500	0.004
	A	105	137.20		
ICT Readiness2	B	093	177.00	6743.000	0.000
	A	105	117.00		
ICT Readiness3	B	093	169.20	7821.00	0.000
	A	105	126.00		
ICT Readiness4	B	093	177.30	6543.500	0.000
	A	105	115.00		
ICT Readiness5	B	093	170.00	7705.500	0.000
	A	105	125.00		
ICT Readiness6	B	093	161.40	9463.000	0.006
	A	105	140.00		
ICT Readiness7	B	093	153.00	11058.500	0.920
	A	105	154.10		
ICT Readiness8	B	093	172.01	6861.500	0.000
	A	105	118.01		

Impact Factor:

ISRA (India) = 3.117	SIS (USA) = 0.912	ICV (Poland) = 6.630
ISI (Dubai, UAE) = 0.829	PIHHI (Russia) = 0.156	PIF (India) = 1.940
GIF (Australia) = 0.564	ESJI (KZ) = 8.716	IBI (India) = 4.260
JIF = 1.500	SJIF (Morocco) = 5.667	OAJI (USA) = 0.350

ICT Readiness9	B	093	155.00	10828.500	0.755
	A	105	151.01		
ICT Readiness10	B	093	172.00	7254.000	0.001
	A	105	121.01		
ICT Readiness11	B	093	182.40	5538.000	0.000
	A	105	106.40		
ICT Readiness12	B	093	181.43	5908.000	0.000
	A	105	110.00		
ICT Readiness13	B	093	190.00	4313.000	0.000
	A	105	96.14		

Significant: $p < 0.01$

Furthermore, this study investigated and reported the differences the gender in the next section of this study

4.2 Gender differences

The t-test outcomes specified a mean value of 2.988 in the case of male learners and a mean value of a 2.68 achieved female learners, it was justified significant with beta of 3.788 at p -value <0.01 . This indicated that male learners used in this may consider their instructors model in lecture hall than the female learners.

Considering level of technology know-how attained in progress of course, a mean value of a 2.168 achieved in the case of male learners and mean value of a 2.00 achieved in the female learners' case, this was significant with beta of 2.583 at p -value 0.05. This also supported that male learners belief they attained knowledge than female learners in progress of coursework

As aforementioned, U test Mann-Whitney specification was adopted to compare the variation of male and female learners 'readiness to be taught with computer. This study statistically justified with adoption of U test mean value of 2.36 for male learners and 2.09 for female learners, the significance difference based U-test value of a 7998.500 at p -value of 0.00. This study also noted that the male learners in School (B) and School (A) seem ready to be taught with the aids of computer than School (B) and School (A) female learners.

4.3 Technology integration readiness and knowledge attained at coursework

A chi-square test performed to analyze relationship between technology integration readiness and knowledge attained amid course work. This study statistically and critically suggested the positive relationship between aforementioned [mean square (6, N equal to 198), with beta of a 72.001 at p -value of 0.0001. Knowledge attained amid of coursework influences learners' readiness in relationship to technology integration. Learners from the universities used study, which feel ready or somewhat ready for technology integration, were

bound to demonstrate that they attained more knowledge amid a portion of the courses.

4.4 Differences between learners university year level (years of study)

This study exhibited a positive statistical significant variance between learners university status (years of study) point of view on technology know-how attained amid of coursework [F (3, 306) = 15.493, $p < 0.001$] with adoption of one-way variance analysis. The hoc effect indicated (year one = 3.129, *standard deviation* = 0.425) learners were less likely to perceive that they acquire technology knowledge than (year two = 2.821, *standard deviation* = 0.513) and seniors (year fours= 2.777, *standard deviation* = 0.412). Statistical differences were not justified between university learners' year level on the modeling, attitudes, and accessibility in this study.

A Kruskal-Wallis test was conducted to evaluate differences among the university year level (four categories) in term of learners point of view about readiness towards been taught with the aids of computers. This study justified that there was a significant variance between the learners' point of view [*mean square* (3, N = 198 = 28.551 at p -value <0.001)]. A value of 103.40 achieved in the case of year one learners; 134.50 in the case of year two; 150.00 in the case of year three and 179.01 noted in the case of year four learners justified with mean ranking

5. Conclusion and Recommendation

This study investigates respondents' readiness towards integrate technology and the impression on various instructional technologies capability in physical education from learners of Baliuag University and Angeles University Foundation, Philippines. The after effects of this study suggested approaches to align information and communication technology into physical education teaching and learning environment in a successful manner. Finding out about instructors and learners' readiness towards integration of instructional technology to improve physical education set up.

Generally, learners in this investigation demonstrated that they fundamentally use innovation to make instructional materials (e.g., handwritten

Impact Factor:

ISRA (India)	= 3.117	SIS (USA)	= 0.912	ICV (Poland)	= 6.630
ISI (Dubai, UAE)	= 0.829	PIHHI (Russia)	= 0.156	PIF (India)	= 1.940
GIF (Australia)	= 0.564	ESJI (KZ)	= 5.015	IBI (India)	= 4.260
JIF	= 1.500	SJIF (Morocco)	= 5.667	OAJI (USA)	= 0.350

notes, tests, quizzes and so on.), to accumulate information for lesson planning and for managerial record keeping, and to connect with partners and different experts. It was noted that learners used to ignoring utilization of technology towards building a site or a blog, altering pages with WIKI, interest in the synchronous online gatherings, making or utilizing an advanced portfolio, and utilizing content-explicit programming devices Level of technology know-how not enough on the instructor part of physical educators noted in this study.

Gender differences reported in this study, male learners were bound to feel that the courses in their program equipped them to utilize the said technology and that the instructors demonstrated as an adoptable model to technology utilization in amid class in progress. Male learners have progressively uplifting frames of mind towards the utilization of PCs, found consistent [28], also noted in this study that male instructors and learners steady in information communication and technology usage abilities when compared with female instructors and learners, studies found consistent [23, 29]. Additionally, a distinction among the first to fourth learners in attaining knowledge noted in this study. The outcomes are not astonishing thinking about that first year learners understudies did not involve the same number of courses and teachers as learners understudies in later years of their studies in the university.

Moreover, School B participants were more bound to utilize technology to create and designing of notes and to deliver lectures than School A participants adopted in this study. Comparison about the readiness towards incorporate technology in the class, supported in this study, School A participants seems ready to utilize technology than School B participants, participants in School A accustomed with the use of content-specific soft-wares These results could be traced to the facts that learners and all instructors in School A mandatory to use technology related to the learning management (CANVAS, socrative) than School B, also noted that all the technology equipment to support physical education seems under-utilized in School A by the instructors during course of teaching. Meanwhile, School B seems needed improvement

Investigation on the relationship between readiness to integrate technology and knowledge attained while classes in progress among the participants supported in both universities. Fonseca et al [34] use of augmented reality technology and Fathema et al [35] learning management systems in higher education institutions found consistent. This concluded study agreed that readiness of instructors towards usage of technology related to level of learners' adoption. Instructors using learning management system and physical education

instructional equipment, surely learners will be motivated to use.

Attitudes towards technology considered moderate, School B participants' attitude justified higher than School A participants, might be related and traced to level of interest in technology acceptance and experience to PCs usage and commencement period. As noted in this study, School A and School B instructors might accustom with use internet in different direction other than navigates interest to Web2 tools such as WIKI, blogs journals, advanced portfolio and web-based teaching. This study noted and supported that instructors are role models to learners, attitude of the instructors using PC during course of teaching might arouse attitude of learners to adopt, studies found consistent Ayodele et al [20] learning via web, Goldshtein et al [27] technological know-how for instructors and, [22] learning via web.

School A learners has higher accessibility to computers in their university compared to learners in School B, but readiness to use technology justified moderately adopted like School B learners. Thus, higher accessibility does not justified higher usage of the computer of the instrument. Gay [30] found related and consistent.

Adequate training on the use ICT towards teaching commitments highly recommended for instructors at School B and School A, female participants noted more than the male participants, first year and fourth at School B and School A dominated, gender influences likely increase among the learners. However, generalizability cannot be justified considering the likely limitations. This study also concluded, that physical education classes must pursue an effective physical academics ways to satisfy the technological hindrances within the lecture hall ought to instigate.

In essence, necessity resides in readdressing instructional methods and to adopt new academic models to teaching and to integrate technology that links the most parts that interfere within the educational method, knowledge on the relations among the most appropriate technology, effective teaching to make the educational contents more accessible to the students [9].

In order to optimize technology-based models of teaching and learning, academics ought to be ready to apply content data in an exceedingly didactically sound means that is adaptable to the characteristics of learners and in educational instructional context (e.g., the gymnasium). The key challenge is how to organize instructors to on how to incorporate technological options with the teaching and learning. Integrating technology towards with the physical education instructors and learners suggested vital. A study on structural equation modelling suggested for future study to validate results of this concluded study.

Impact Factor:

ISRA (India) = 3.117	SIS (USA) = 0.912	ICV (Poland) = 6.630
ISI (Dubai, UAE) = 0.829	PIHHI (Russia) = 0.156	PIF (India) = 1.940
GIF (Australia) = 0.564	ESJI (KZ) = 5.015	IBI (India) = 4.260
JIF = 1.500	SJIF (Morocco) = 5.667	OAJI (USA) = 0.350

References:

1. Graham, C. R., Borup, J., & Smith, N. B. (2012). Using TPACK as a framework to understand teacher candidates' technology integration decisions, *Journal of Computer Assisted Learning*, 28(6), 530-546.
2. Smith, C., & Gillespie, M. (2007). Research on professional development and teacher change: Implications for adult basic education. *Review of adult learning and literacy*, 7(7), 205-244.
3. Huang, K., Lubin, I. A., & Ge, X. (2011). Situated learning in an educational technology course for pre-service instructors. *Teaching and Teacher Education*, 27(8), 1200-1212.
4. Bingimlas, K. A. (2009). Barriers to the successful integration of ICT in teaching and learning environments: A review of the literature. *Eurasia Journal of Mathematics, Science & Technology Education*, 5(3).
5. Buabeng-Andoh, C. (2012). Factors Influencing Instructors' Adoption and Integration of Information and Communication Technology into Teaching: A Review of the Literature. *International Journal of Education and Development using Information and Communication Technology*, 8(1), 136-155.
6. Koh, J. H., & Divaharan, H. (2011). Developing pre-service instructors' technology integration expertise through the TRACK-developing instructional model *Journal of Educational Computing Research*, 44(1), 35-58.
7. Al-Eidan, E. A. (2017). Technology in classrooms: tools, advantages, barriers, attitudes and resources limitation. *British Journal of Education*, 5(1), 38-53.
8. Shonfeld, M., Resta, P., & Yaniv, H. (2011, March). *Engagement and social presence in a virtual worlds (Second Life) learning environment In Society for Information Technology & Teacher Education International Conference* (pp. 740-745), Association for the Advancement of Computing in Education (AACE).
9. Koehler, M. J., Mishra, P., Akcaoglu, M., & Rosenberg, J. M. (2013). The technological pedagogical content knowledge framework for teachers and teacher educators, *ICT integrated teacher education: A resource book*, 2-7
10. Van Eck, R. (2006). Digital game-based learning: It's not just the digital natives who are restless. *EDUCAUSE review*, 41(2), 16.
11. Lim, Jon YeanSub. (2005). Preparing pre-service instructors to effectively use technology as teaching tools. *Research Quarterly for Exercise and Sport*, 76(1), A81.
12. Conole, G., De Laat, M., Dillon, T., & Darby, J. (2008). 'Disruptive technologies', 'pedagogical innovation': What's new? Findings from an in-depth study of students' use and perception of technology *Computers & Education*, 50(2), 511-524.
13. Kennedy, G. E., Judd, T. S., Churchward, A., Gray, K., & Krause, K. L. (2008). First year students' experiences with technology: Are they really digital natives? *Australasian journal of educational technology*, 24(1).
14. Thompson, P. (2013). The digital natives as learners: Technology use patterns and approaches to learning. *Computers & Education*, 65, 12-33.
15. Sadik, A. (2008). Digital storytelling: A meaningful technology-integrated approach for engaged student learning. *Educational technology research and development*, 56(4), 487-506.
16. Carney-Strahler, B. (2011). Wikis: Promoting collaborative literacy through affordable technology in content-area classrooms. *Creative Education*, 2(02), 76.
17. Spector, J. M., Merrill, M. D., Elen, J., & Bishop, M. J. (Eds.). (2014). *Handbook of research on educational communications and technology*. (pp. 413-424). New York, NY: Springer.
18. Liang, G., Walls, R., Hicks, V., Clayton, B., & Yang, L. (2006). Will tomorrow's physical educators be prepared to teach in the digital age? *Contemporary Issues in Technology and Teacher Education [Online serial]*, 6(1).
19. Ruiz, A. J., & Cecilia J.-S. (2012). Quality Assurance in Higher Education in the Philippines. *Asian Journal of Distance Education* 10, no. 2.
20. Ayodele, S. O., Oga, O. E., Bundot, Y. G., & Ogbari, M. E. (2016, October). *Role of power supply towards e-learning acceptance: VBSEM-AMOS*. In 2016 6th International Conference on Information Communication and Management (pp. 151-155), IEEE.
21. Juniu, S., Shonfel, M., & Ganot, A. (2013). Technology integration in physical education teacher education programs: a comparative analysis. *Actualidades Investigativas en Educación*, 13(3).

Impact Factor:

ISRA (India) = 3.117	SIS (USA) = 0.912	ICV (Poland) = 6.630
ISI (Dubai, UAE) = 0.829	PIHHI (Russia) = 0.156	PIF (India) = 1.940
GIF (Australia) = 0.564	ESJI (KZ) = 5.015	IBI (India) = 4.260
JIF = 1.500	SJIF (Morocco) = 5.667	OAJI (USA) = 0.350

22. Howland, J. L., Jonassen, D. H., & Marra, R. M. (2012). *Meaningful learning with technology Upper Saddle River*. NJ: Pearson.
23. Kalelioğlu, F. (2015). A new way of teaching programming skills to K-12 students: Code. Org. *Computers in Human Behavior*, 52, 200-210.
24. Polly, D., Mims, C., Shepherd, C. E. & Fethi, I. (2010). Evidence of impact: Transforming teacher education with preparing tomorrow's teachers to teach with technology (PT3) grants. *Teaching and Teacher Education*, 26(4), 863 – 870.
25. Bonifacio, A. L. (2013). *Developing Information Communication Technology (ICT) curriculum standards for K-12 schools in the Philippines*. Retrieved online on February, 14, 2017.
26. Goktas, Y., Yildirim, Z. & Yildirim, S. (2009). Investigation of K-12 Teachers' ICT Competencies and the Contributing Factors in Acquiring these Competencies. *The New Educational Review*, 17(1), 276-294.
27. Goldshtein, O., Kuzminski, L., Hiluel, I., Walsman, N., Zerkovitz, Z., Tesler, B., Mor, N., Forkush-Baruch, A. & Shonfeld, M. (2009). *ICT in Teacher Training in Israel at 1993-2008*, Research net: MOFET Institute.
28. Cazan, A. M., Cocoradă, E., & Maican, C. I. (2016). Computer anxiety and attitudes towards the computer and the internet with Romanian high-school and university students. *Computers in Human Behavior*, 55, 258-267.
29. Riemer, V., & Schrader, C. (2015). Learning with quizzes, simulations, and adventures: Students' attitudes, perceptions and intentions to learn with different types of serious games. *Computers & Education*, 88, 160-168.
30. Gay, G. H. (2016). An assessment of online instructor e-learning readiness before, during, and after course delivery. *Journal of Computing in Higher Education*, 28(2), 199-220.
31. Hew K. F., & Cheung, W. S. (2013). Use of Web 2.0 technologies in K-12 and higher education: The search for evidence-based practice. *Educational research review*, 9, 47-64.
32. Woods, M., Goc K. G., Miao, H. & Perlman, D. (2008). Physical educators' technology competencies and usage *Physical Educator: a magazine for the profession* 65(2), 82-99.
33. Leight, J., & Bechtel, P. A. (2010). Technology utilization: Thread it through the PETE curriculum. *Journal of Physical Education, Recreation & Dance*, 81(6), 53-56.
34. Fonseca, D., Martí, N., Redondo, E., Navarro, I., & Sánchez, A. (2014). Relationship between student profile, tool use, participation, and academic performance with the use of Augmented Reality technology for visualized architecture models. *Computers in human behavior*, 31, 434-445.
35. Fathema, N., Shannon, D., & Ross, M. (2015). Expanding the Technology Acceptance Model (TAM) to examine faculty use of Learning Management Systems (LMSs) in higher education institutions. *Journal of Online Learning & Teaching*, 11(2).