

Incorporation of Technology in Instructional and Learning Endeavors in a Connected Society.

Lisa Lang, Ph.D.

Jarvis Christian College, Hawkins, Texas USA

Abstract

The integration of technology into the educational process has had a dual effect on education stakeholders. On the one hand, it has allowed for greater participation in the educational process by turning professors and allied educators into resourceful producers and hyper communicators who use multiple tools to manage and deliver instruction. On the other hand, the integration of technology has turned students into innovative producers and multitaskers who use technology in class assignment with ease. Today, these participants in education, especially the professors, are using technology to prepare, educate, manage and deliver instruction, publish and disseminate prominent information that was previously too expensive and almost impossible to produce and distribute to the public. Indeed, the era of integrated technology is sponsoring the democratization of the production and flow of information to the educational community and the masses. A survey on the various uses and aspects of the use of technology in the classroom for instruction and learning proficiency in different subject areas has revealed very positive results and led to the conclusion that effective and measurable academic performance should involve student's collaborative efforts to integrate technology in all latitudes and domains of learning endeavors, awareness and self-discovery through creative thinking, and effective reading, writing and communication skills. 95% of the students surveyed indicated that the integration of technology in the educational process will help to eradicate students' reading, writing and communication deficiencies. In other words, the integration of technology in education, instruction and learning will certainly reinforce student's ability to learn. The on-going utilization of technology in academic settings is not stressful and suggests that the integration of technology in the educational system will definitely create a dynamic change and help in strengthening the culture of instruction and learning and the students' ability to learn how to solve complex problems, precisely in the areas of mathematics, science, computer-related skills, reading, writing, and communication.

The purpose of this case-study was to find out the effect of the integration of technology in education, instruction and learning in a connected society. Students who enrolled in computer information systems and, more importantly, attended classes were considered credible sources for the study. The sample selection for this study was drawn from one hundred and five (105) students currently enrolled in Computer Information Systems classes covering Sections One, Two and Three at Jarvis Christian College. The sample population was seventy (70) students randomly selected from one hundred and five (105) students currently enrolled in the three-section classes. Upon a comprehensive review of relevant literatures, class

materials, and engagement with students during each class session and one-on-one sessions in my office and the dining hall, a number of challenges to long-term benefits of integrating technology into the educational process were identified. Skills such as the inability to read, write, communicate, locate instructional materials, and emotional dispositions such as getting nervous, intimidation and stress were delineated as possible factors influencing integration of technology in education to enhance instruction and learning in a connected society. The survey instrument consisted of a cover letter, demographic data and ten questions that asked participants about challenges and benefits of the integration of technology in the educational process of instruction and learning. Students' classifications were categorized into four groupings: freshmen, sophomores, juniors and graduating seniors. Gender was also recognized and used as one of the research variables.

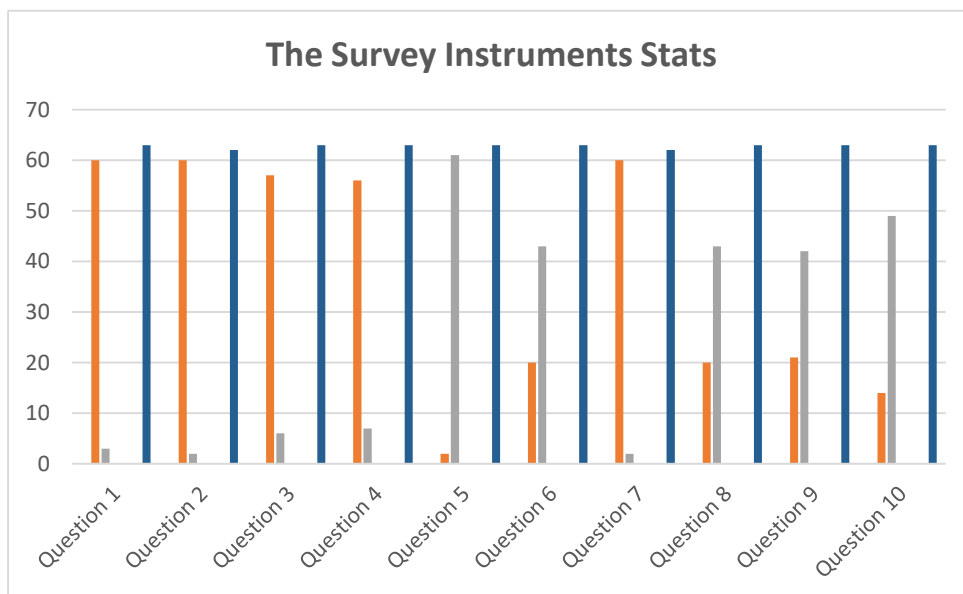
The Survey Instruments made up of ten (10) questions were disseminated to the seventy (70) participating students ten minutes prior to the end of each class session. Respondents consisted of 35 freshmen, 17 sophomores, 6 juniors and 5 graduating seniors. From the seventy (70) questionnaires distributed, 63 were answered completely and were usable for the study. There were thirty (38) male and twenty-five (25) female students.

The Survey Instruments and Students' Responses

	Questions	<u>Yes</u>	<u>No</u>
1	Integration of technology in the educational process will promote the development of students' reading, writing and communication skills.	60	3
2	Technology is an effective and important instructional delivery tool.	60	2
3	The use of technology contributes positively to students' learning endeavors and society	57	6
4	Integration of technology into education plays a key role in the development of students' interpersonal skills and ability to communicate with others	56	7
5	I believe that I can complete my undergraduate and graduate studies without the help of technology	2	61
6	I get nervous with continued use of technology in the classroom for instruction.	20	43
7	The use of technology can motivate students to get involved in all-inclusive learning endeavors.	61	2
8	The use of technology can enhance easy access to instructional materials.	20	43

9	On-going utilization of technology in academic settings is very stressful.	21	42
10	I feel intimidated as a result of intensive use of technology for instruction and learning.	14	49

The Survey Instruments Stats				
		Yes	No	Total Responses
	Question 1	60	3	63
	Question 2	60	2	62
	Question 3	57	6	63
	Question 4	56	7	63
	Question 5	2	61	63
	Question 6	20	43	63
	Question 7	60	2	62
	Question 8	20	43	63
	Question 9	21	42	63
	Question 10	14	49	63
		0	0	628



Color Key: Orange = Yes; Gray= No

Technology, Education and a Connected Society

According to Esin (2011), technology is an effective and efficient instructional delivery tool. Consequently, the integration of computer information technology into educational instruction and learning in a connected society will help to reinforce learners' reading, writing and communication skills. Most colleges and universities in the continental United States have identified reading and writing and communication as areas of deficiencies that affect students' learning skills. As a result, these colleges have chosen these skills for their Quality Enhancement Plan (QEP), especially as research has revealed that overcoming these communication skills will inevitably lead to increased leaning success and performance in classes. In fact, college or higher education is all about writing and reading and communication what has been read either orally or in writing. Hence, any initiative that would enhance or improve reading and writing plays a central role in the acquisition and dissemination of knowledge in higher education.

Expertise in all fields of human endeavors is a lasting pilgrimage; therefore, proficiency across academic disciplines involving reading, writing and communication is an open-ended journey. However, technology in educational instruction and learning are demanding and challenging undertakings, but the rewards are real, reliable, steady and endless. Furthermore, the integration of technology in education will certainly contribute to nation-building and help to close the gap in students acquiring basic technology skills. All attempts to integrate technology in education at all levels of academic endeavors emanate from the infusion of writing, reading and communication resulting in the growth and development that emerge directly from a determined ability to unlock human growth and potential (Wirth and Perkins, 2008). Education is one of the indisputably valuable investments that contribute immensely to the development and enhancement of the current and future economic progress and good governance of every nation on earth. This conclusion is drawn from the responses to survey ***Question 1 - Integration of technology in the educational process will promote the development of students' reading, writing and communication skills.*** 60 out of 63 respondents (95.24%) supported the view that successful integration of technology in the educational process will promote the development of students' reading, writing and communication skills. Clearly, the integration of technology in educational instruction and learning will certainly reinforce students' ability to learn. This response further justifies the twin relationship between education and technology as a dominant vehicle for human liberation, growth and development, and a noble benchmark requirement for financial autonomy, self-transformation, and the eradication of language barriers (Bednar & Sweeder, 2005).

Education is the foundation of our humanity and any initiatives to better enhance or facilitate education occupy a very cardinal position in the evolution of humanity. Hence, Esin (2013) suggested that the integration of technology in the educational process is the premier conduit for electronic data, voice and information transmission. Wirth and Perkins (2008) and Merrill (2013) asserted that instruction is an undeniable pathway to a well-matched and never-ending instruction and learning process, inquiry and investigation of knowledge that leads to guaranteed improvement of minds, memory and humanity. Esin's (2013), Wirth and Perkins' (2008) and Merrill's (2013) assertions are clearly backed by the students' perceptions as revealed in their responses to ***Question 4: Integration of technology into education plays a***

key role in the development of students' interpersonal skills and ability to communicate with others. 56 out of 63 respondents (89%), confirmed that education is an unquestionable and guaranteed pathway to academic transformation, self-actualization, development of professional skills and the ability to communicate with peers and colleagues. However, these responses presuppose actual instructional and learning abilities and activities that really take place in classrooms. Unfortunately, some professors and allied educators tend to maintain that in every instructional session, students have learned and secured a stable education. Some learners, on their part, assume that because they showed up to class, read the required textbook and memorized facts, they have acquired the educational expertise they need to be successful in a challenging and demanding society. However, professors and allied educators must recognize that actual learning begins with the willingness and inspiration of the learners leave the comfort of their house and/or dormitory, get ready and come to class. Such determination must be backed by the learner's commitment to overcome the fear and challenges of learning to acquire the skills and expertise that truly reflect and are concomitant with their level of education to make them productive citizens where they live and work after they graduate from college. Wirth and Perkins (2008) in their recent studies on learning how to learn concluded that a majority of graduates lack the good governance, integrity, ethics, expertise and leadership skills to function effectively in the current challenging and demanding society. In fact, these graduates went through college without the college going through them, thereby questioning the academic grades that they attained to lead them to graduate.

Notably, professors and allied educators of our generation are confronted with colossal frustration and disappointments regarding class attendance, students coming to class late, incomplete class projects, and in a worst-case scenario; students showing up for class without textbooks, notebooks, pens, papers and remotely not ready to retain material covered during the class session. Sutphin (1987) theorized that students are intimidated and nervous as a result of intensive use of technology in the classroom for instruction. On the contrary, in conducting this study, it was found that a majority of students are comfortable about the on-going utilization of technology in the educational process. In response to **Question 9— On-going utilization of technology in academic settings is very stressful--**42 out of 63 students (67%) indicated that they do not find the integration of technology in an academic setting stressful. Furthermore, in response to **Question 10 – I feel intimidated as a result of intensive use of technology for instruction and learning was disconcerting --** 49 out of 63 (78%) affirmed that the students are not intimidated about the integration of technology for instruction and learning. These two responses appear to be positive since they present an almost passing grade of a “C” grade, but they are troublesome to be obtained at a time when nearly every student is computer literate and Generation Z or the millennials are usually referred to as the computer literacy generation.

Thomas (1996) in his studies on educational equality and excellence noted that students today lack respect for anybody, professors, allied educators, parents, police officers and themselves. Indeed, they act like they do not care about anything, especially paying attention to instruction and learning during the class sessions. He further stated that “students today don't want to do anything for themselves, [are] always angry about everything, engage in negative and pessimistic action and full of uncontrolled rage.” This frustration seems to come from students' dissatisfaction with traditional methods of instruction and learning. Today's

generation is technology inclined; therefore, the integration of technology in education will satisfy the void and fulfill the desire to learn through technology. However, there may still be pockets of resistance among the students (28%) coming probably from those first-generation students who have been financially handicapped to buy and use communication gadgets on a regular basis. But many of them will catch up with the rest as soon as the infusion of instructional technology in the classroom becomes the medium of teaching and lecture delivery.

In order to shape the future of education, reinforce learners' endeavors and commitment to overcoming their inability to focus on the educational objectives such as reading, writing and communication, the educational enterprise must be prepared and willing to increase their human and material investments and focus on a new culture of instruction with emphasis on course content, student engagement, hands-on practical applications, individual and group class projects using technology as a management and delivery tool.

Technology in the Classroom for Instruction

The integration of technology into the classroom for instruction calls for a systematic approach to how to effectively utilize technology and associated equipment to deliver content in different subject areas and through a totally different methodology. Henrickson (2007) and Keengwe (2007) noted that the instructional use of technology in the classroom must focus on learner's growth, proficiency and academic performance. Respondents to the question about their comfort with the use of instructional technology had divided reactions regarding question: *I get nervous with continued use of technology in the classroom for instruction*. 43 of 63 respondents (68.25%) stated that they are not nervous about the use of technology in the classroom for instruction. The users' response clearly indicates reluctance to a total endorsement of the use of technology to manage and deliver instruction in the classroom. It is worth noting that technology will not replace professors and allied educators and must be viewed as a platform for educational advancement. Hanushek (1994), Lynch (2000) and Morley (2013) asserted that the integration of technology in higher education and corporate enterprises will continue to require the direct involvement of professors, allied educators and the educational community who will continue to act as facilitators and leaders in the educational and operational processes. The process, if properly implemented, will undoubtedly play a key role in nurturing and possibly reinforcing simultaneous innovative problem-solving skills amongst learners.

Partee (2002) hypothesized that technology tends to produce an overabundance of information, but such influx will lack the pedagogical insight that can help to empower learners with a deeper understanding of the components of instructional strategies, learning how to learn and how to acquire and apply critical thinking skills. These skills can best be acquired through the facilitation and direction of instructors and professors whose role in education or the imparting of knowledge remains indispensable and unarguable. However, in order to unleash the full potential of the integration of technology into academies, professors and allied educators must accept and acknowledge the outstanding promise and convincing benefits of this new initiative in the educational community and society. Response to *Question 5* on the impact of technology in academic achievement yielded an impressive response. To the question *I believe that I can complete my undergraduate and graduate studies without the help of*

technology, 61 out of 63 respondents (97%) indicated that it is almost impossible for them to complete their education without the integration of technology in the educational system. Indeed, technology is a remarkable agent of change and academic transformation; therefore, professors, allied educators and students must be prepared to grow above the mindset of quick fix and of shortsightedly using technology for digital games and associated social activities. This response is almost antithetical to the response to **Question 9** about the ease of the use of technology in class. It calls for the re-channeling of technological knowledge into the meaningful form of education as opposed to the deployment of this expertise in social media and digital games as has been the case with our generation.

Today, the integration of technology has considerable impact on the way students and society utilize technology. In this study respondents (students) confirmed that there is tremendous potential to make students accountable about the use of technology in the educational system. Certainly, technology is shaping our ways of communication and the preparation of the youngest generations for work and citizenship. The responses to **Question 7- The use of technology can motivate students to get involve in all-inclusive learning endeavors--** 61 out of 63 respondents noted that the reliance on technology in the educational enterprise is a credible avenue for multiple intelligence building opportunities leading to effective learning supported by doing, discovering, practicing and searching. In sync with respondents' confidence in the integration of technology to complete their undergraduate and graduate studies, Schofield (1995), Oz (2009) and Vermaat (2014) noted that the integration of technology in the classroom for instruction has changed the culture of instruction and learning processes that inevitably lead to correlation between contemporary, meaningful learning on the one hand and the growth and development of human competence on the other.

It is true that technology can motivate students to get involved in all-inclusive learning endeavors. In addition, it is worth noting that although technology is certainly an expressive and effective communication and instructional delivery tool, it must not be viewed as a magical solution or panacea to the challenges and the pitfalls in higher education instruction and the learning process that we continue to experience today.

Current education researchers have maintained and advised that the mission of a successful integration of instructional technology in educational settings must embrace a wide-range of interrelated instructional scholastic culture. Education researchers further assert that the expected "scholastic culture" must demonstrate a binding instructional procedure that will provide a demonstration of content that is relative to the needed skills that enhance and engage learners in peer-discussion, peer-demonstration, peer-collaboration and peer-critique. In addition, the foreseeable "scholastic culture" must include a broad range of opportunities to stimulate relevant cognitive structures through the demonstration of previous experiences that empower and equip learners with innovative ways to explore and utilize all-inclusive newly acquired skills and expertise to function effectively in a connected society. These skills and goals can only be easily acquired and enhanced through the infusion of technology in the educational setting and the exposure to all students.

The integration of computer information technology into the scholastic culture must be accepted as a journey in an all-inclusive method of instruction and learning endeavors. Consequently, instructional technology is a credible vehicle of transformation and a viable benchmark for innovation, creativity, quality instruction and universal approach to learning

that breaks all national boundaries in a world that is increasingly becoming borderless (Ngwang, 2016). Although many technologies are valuable resources, they must be used in a systematic method that will contribute to the development of human competence. Student responses to **Question 10** above (*I feel intimidated as a result of intensive use of technology for instruction and learning*) about users' feeling about the infusion of technology in their academic life maintained that 49 out of 63 (78%) students maintained that they are not unsettled and overwhelmed about the integration of technology in the educational enterprise. The successful incorporation of computer information technology in instruction and learning lies in a thoughtful approach to covering the course content in a traditional class session in order to obtain measurable outcomes of learners' performance. Authentic learning must include understanding, awareness and engagement of learners' in the critical-thinking, creation of new ideas, skills, productivity, reading, writing, communication and measurable academic performance (Wirth and Perkins, 2008; and Esin, 2011) The responses to the ten survey questions have re-heightened academic and pedagogical awareness and led to the conclusion that effective and measurable academic performance should involve the following:

- Learners' collaborative efforts to integrate technology in all latitude and domains of learning endeavors;
- Learners' conviction, acceptance and trust in learning how to learn, awareness and self-discovery;
- Learners' application of innovative, creative thinking, and development of new reading, writing, and communication skills;
- Learners' ability to coordinate the connection of new ideas;
- Learners' determined effort to overcome the fear of making mistakes and master the amount of physical and intellectual involvement and long-term benefits about the integration of computer technology in education.
- Learners' acquisition of conceptual knowledge, self-discovery, retention and acquired expertise; rather, than memorization and recalling answers from mobile phones during examinations;
- Learning how to learn must be viewed as a permanent change in the culture of human learning behavior and a solution to all-inclusive learning processes and as a dynamic shift from the ability to memorize and recall information just to pass examinations;
- Acceptance and recognition of how to learn is a constructive effort that leads to productive, promising and open-ended reward.

Education: A lifelong education is a noble journey of inheritance for everyone

1. In a traditional sixty (60) minute classroom session, two (2) minutes should be used to acknowledge the presence of all students in attendance. It is my line of reasoning that the culture of education has changed. As a result of the cultural change, I submit to professors and allied educators to recognize the fact that anyone that can wake up in the morning and get to class at the scheduled time for academic activities has made a

giant step toward a measurable education driven goal. Forty-six (46) minutes of the class period should be fully utilized for instructor-led content; twelve (12) minutes for class collaborative engagement and discussing in attempt to establish connection with what has transpired in the past 46 minutes and the last two minutes for roll call to ensure all students are in attendance.

Collaboration requires active participation

2. Computer laboratory sessions should be held once a week. Two (2) minutes should be used for attendance and fifty-five (55) minutes for fully collaborative group learning and the last three (3) minutes to evaluation the class activities. Indeed, the on-going utilization of technology in academic settings is not stressful as many pundits think. Throughout the survey process a majority of students were able to recall their user name and institutional identification that serves as a password, complete the assignments in word processing, excel and Power Point, generate printouts and turn their assigned projects in on a scheduled date and time. Most effective learning is accomplished when students describe, discuss and defend assigned projects in a dignified attempt to come to agreed solutions.

Notably, the integration of instructional technology into educational settings has complemented original standard traditional methods of instruction and learning and is gradually replacing conventional instruction, learning and structured format examinations such as tackling reading, essay type written questions to consecutive types of evaluation that is characterized by multiple-choice, short-answers and true-or-false responses. Indeed, the integration of technology in education does not in any way guarantee fundamental change in the instruction and learning process and is not a magic solution to learners' academic performance. Some education researchers, notably Partee (2002) and Wirth and Perkins (2008), emphasized that professors and allied educators are responsible to use technology as a promising delivery tool to prepare students on how to solve authentic problems. In this case, education solidifies its role as a ground for self-discovery, academic achievement, and the exploration of strength and weakness of the educational system and a balanced benchmark to monitor students' academic performance and student learning outcomes on a daily and monthly basis.

Integration of Technology and Learning Endeavors

Learning is a guaranteed life-long commitment and a journey, which cannot be completed in just four years of college. Learning is an open-ended expedition that requires the comprehensive understanding of new information (comprehension), the creation of new learning procedures (synthesis), a validation of new information (analysis), and time and effort to retain acquired materials (assessment). Learning is a combination of intellectual awareness and mental capability and a commitment and willingness to accept new information. It is worth noting that the combination of instruction and learning is a noble vehicle for a productive and promising avenue to learn with greater precision in more than one dimension and different subject areas. Wirth and Perkins (2008), in their studies on learning how to learn, support the premise that education, technology, instruction and learning, when combined and used

effectively, is a credible pathway to critical-thinking, productive outcomes and lasting solution to growth, productivity and citizenship.

Conclusion

The central significance of this study is subsumed in *Question 1* of the survey questions above: ***Integration of technology in the educational process will promote the development of students' reading, writing and communication skills.*** 60 out of 63 students (95%) supported the view that the successful integration of technology into instruction will promote the development of students' reading, writing and communication skills. In other words, the integration of technology in education, instruction and learning will certainly reinforce students' ability to learn. This integration, according to students' responses, embodies an art of inclusiveness and unity that must be accepted as a landscape, a credible vehicle of transformation and universal method of approach for instruction and learning. Through the results of the surveys students confirmed that the incorporation of computer information technology in instruction and learning will enhance measurable outcomes of student's performance, especially in the domain of reading, writing and communication.

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