

Technology in Education: Problem or Solution?

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Abstract

The fact is technology is changing the way we teach and the way our students learn. Teachers complain that the students neither read enough nor write properly; rather, we have to admit that students read different texts (Chat, Twitter, Facebook, etc.) and write a different language (SMS, chatting, etc.). However, can text messages replace textbooks? Can ipads replace notepads? Teachers also say that students do not concentrate in class or have a short attention span because they are engrossed in their mobile phones, PCs, Ipads and other digital devices; but is this the whole truth? Does technology enhance education and supplement students with relevant and accessible information or does it prevent them from focusing on the subject at hand? To answer some of these questions we will use a random sampling from two courses given at Notre Dame University-Louaize, (NDU). The first is a Public Speaking course for Freshman students, and the second, an Introduction to Psychology, a General Education Requirement (GER) offered to Sophomore, Junior and Senior years. The method used for the research is therefore qualitative based on case studies.

Keywords: technology, education, critical thinking, research, electronic devices

Introduction

At Notre Dame University-Louaize (NDU), a private university in Lebanon, we tell our students to turn off their mobile phones and keep them out of sight during class. It is a rule printed in their syllabus (Appendix 1). It may be time to rethink and qualify this statement. Why not allow students to use their technical devices during class to search for specific information or look up the meaning of a word, in other words, to use their mobiles when instructed by their teachers. Of course, sending text messages or chatting with their friends is not part of the deal, so, how is a teacher to check? If students are engaged, and participating in class, we have to assume that they are using their smart phones for a good reason. They can also use them for photocopying notes, and marking their calendars for due dates, homework, etc.

Electronic devices of the 21st century allow us access to more information. This means extending learning outside school hours as in distance learning, spell check, accessing online libraries for research, various projects, and other class related activities. So, more information is available but that could possibly lead to a decline in depth or lack of analysis. Teachers may be accommodating their students' short attention span by shortening their lessons. They feel that the students need to be entertained. Students are easily bored, distracted, they need to be constantly stimulated; but could this be their way of processing information?

Undeniably, technology plays a significant role in education be it in supplementing research or offering quick answers gathered with a few keystrokes from Wikipedia or Google or Utube. But, can technology replace teachers? Teachers ask the right questions, and steer students in the right direction, when students show little or no patience if they have to think and find answers on their own. Being used to watching TV, playing video games, and other constant stimulation, they are not interested in listening to a lecture; a boring alternative. Is it enough that students access information from online sources? What about critical thinking, analyzing, and assessing the information? For a teacher, technology may be a problem, but also a solution. It is easier to engage the students and involve them when instructed to look up the meaning of a word or find some information on a particular subject. Is it not time teachers became more flexible and dynamic, more active, more creative? Why not assign readings using e-books and online games to increase the students' learning skills? Indeed, why not use technology to motivate, engage, accelerate learning, and increase productivity. How can technology support and enhance teaching and learning?

Problem: Students are busy "playing" with their devices during class instead of paying attention to the lecture and explanations.

Solution: The effective use of technology in the classroom can solve the problem of lack of motivation and lack of interaction and create a more productive classroom environment.

Objectives: Allow the use of technological devices, for example, smart phones, to supplement and enhance learning. Rather than prohibiting its use, integrating technology in class will engage the students and motivate them to participate in the lesson and class work.

Purpose: the purpose of this study is to determine whether technology is a problem or a solution. That is to say, is technology helping to motivate the students and engage them in the lesson or is it hindering them from concentrating on the subject at hand.

Significance: the significance of the study lies in the fact that technology "works". Students like to learn while "playing"; they like to be involved rather than passive attendants..

Limitation: the limitation of the study is that it is based on two classes, namely a Freshman language/English course, and a Sophomore content/psychology course, conducted at NDU. A private Lebanese university where English is the language of instruction. 50 students were

involved in the case studies; the Questionnaire was filled out during class time in the presence of the professor, and is subjective.

Review of literature

There is mixed evidence as to whether it is better to use technology as a replacement or as a supplement to classroom curricula. To be effective, the technology must be fully integrated into lesson plans and teachers must be trained sufficiently (Mahajan, 2012). There is a widespread belief among teachers that the constant use of technology is not allowing students to focus. They seem to have shorter attention spans and the constant stimulation is hampering their concentration. Instructors have to work harder to hold their students' attention. Others say that technology can be a useful educational tool (Technology is Changing How Students Learn, 2012).

At universities today, chalk and blackboards have long been replaced by LCD projectors, PowerPoint, Smartboard, and Blackboard. Students use their electronic devices, smart phones, mobile apps, and tablet computing for their school and university projects. "Electronic whiteboards allow instructors to write on a monitor in digital ink." (Inoue, 2006) The touch screen has replaced the pen and paper and game-based learning reflects skills such as, "collaboration, problem-solving, communication, critical thinking, and digital literacy." (Inoue, 2006) Technical devices are appealing to students, intriguing and fun.

Today, technology and diversity in education present new challenges for both student and teacher. Educators must integrate technology in diverse learning environments. According to Inoue (2006), technology is a vast and still untapped resource for content delivery, research, and class work preparation in higher education. As electronic tools are increasing, professors need to be flexible in integrating technology into pedagogy; they must apply computer-based learning to different students with different learning styles. There are however some negative outcomes for students from immersion of technology in higher education, such as a probable decline in literary reading, some social isolation and possibly Internet addiction (Inoue, 2006). Instructors nowadays may face stress in attempting to integrate online learning environments in their classrooms for students with different backgrounds, academic levels, and learning styles. Although some traditional instructors are reluctant to use technology, they do realize that it supplements teaching and enhances learning. Thus, there are both benefits and worries in using technology as a pedagogical tool (Inoue, 2006).

Technology has transformed traditional teaching in that the teacher is not the sole disseminator of information. Students can use technology in research, for instance, or to learn the definition of words. It provides sources of information and knowledge. From the professor's point of view, technology can help assess the students' learning. (The Teacher's Guide to Successful Technology Integration...) Moreover, traditional teaching does not work for all students who prefer to interact with their high-tech devices in order to learn.

Why are students fascinated with the Internet and computers? Actually, this is a sign of the times we all live in. Teachers and students alike are mystified by technology's endless possibilities. Thus it is to the teacher's advantage to make use of technology to help students exceed their expectations. The importance of technology is that, if used correctly, it can enhance the students learning. (Hunter, 2011)

According to Larry Cuban, (2012), technology will motivate students to work harder, to gain more knowledge and skills, and be more engaged. Being more engaged, students will achieve higher grades, which in turn will increase their motivation to learn. Thus technology

should be a normal part of the learning process. It closes the gap between education and the real world (Cuban, School Reform and Classroom Practice).

On the other hand, traditional instructors may think that it is “easier” to integrate technology into the classroom, while in reality it is more intricate than one would think. Still, instructors are rapidly integrating technical literacy in today’s curriculum (Barron, Kemper, Harmes, and Kalaydjian, 2003, in Straub, 2009). Like any other technology, the Internet is a tool that teachers can use whenever needed. Sometimes information can only be passed on through books and lectures, and sometimes integrating the Internet is suitable. Melissa Kelly in her article Issues with Integrating Technology in the Classroom, writes that while technology can be very helpful in the classroom, it can also be a waste if not used properly.. Of course the quality of information on the Internet is not always guaranteed. It is possible to run a biased or inaccurate website. The teachers’ role is to evaluate web sources, when they assign homework or research projects. Computer-based technologies in particular constitute interesting additions. Over the past decade, teaching with computer-based technology has become the norm. This recent trend has led to a number of problems, such as “cyber plagiarism,” and cheating (Ibid). Today’s university student has a computer or tablet used as a notebook, an important and expected learning tool. Email and the Web are not innovations; rather they have become basic tools in education. While some instructors hesitate to use “more complex computer-based activities or other teaching innovations, such as active learning techniques” (Becker and Watts, 1996; Becker 2004 in Goffe, 2005) students consider PCs and digital tools to be part of their university experience. Students are increasingly ready to embrace computer technology and prefer to use the Internet in their assignments (Levin and Arafeh, 2002 in Goffe, 2005). Instructors agree that several questions arise from this widespread use of technology in universities 1). Is there evidence that computer use improves teaching? 2) How does the use of technology affect student performance?

Research shows that the Internet has a positive influence on learning, and that using the Web helped students understand the concepts. Studies show that even instructors who are reluctant to utilize technology use “some type of computer technology in their teaching. They also spend more time preparing exams and less time grading them because of online grading systems” (Goffe, 2005). Online courses are becoming more fashionable; but the question remains, is it the technology that matters in online courses or the use of active learning and sound teaching techniques? In addition, what does the future hold for teaching technology? It seems logical to assume that technological advancements will continue to emerge. Online videos and conferences, and other online communications will prevail. Online office hours will be next (Goffe, 2005).

In addition to using technology to communicate with people from a distance, teachers now use LCD projectors and PowerPoint instead of handouts, chalk, and blackboards. Technology has changed the way we teach and the way our students learn; wireless handheld devices, tablets and PCs are here to stay. On the down side, although computer-based learning environments (CBLEs) are becoming more prevalent in the classroom, research has demonstrated that some students have difficulties learning with these environments. (Moss, 2009) So, how effective is technology as a learning tool?

Methodology

To study the use of technology in the classroom, we involved two classes at NDU, namely ENL 111 A, Public Speaking for Freshman, and PSL 201 A, Introduction to Psychology. The data was obtained in Spring 2013 at NDU.

As mentioned before, the objective of this study is to determine whether including technology in classes is helping or hindering students' learning. Is technology in the classroom a problem or a solution?

The population consists of 50 students from the two classes mentioned above. Most of the students are Lebanese, between the ages of 19 and 24. The Public Speaking course is offered to Freshman students and Introduction to Psychology is a General Education Requirement (GER) for students in Sophomore, Junior and Senior years.

This research is based on a survey (in the form of a questionnaire) in addition to regular class observations. An analysis of the results will follow. A total of 50 questionnaires were filled out. We will examine each class separately and draw conclusions based on both.

Twenty students in ENL 111 A, Public Speaking for Freshman, and thirty students in PSL 201 A, Introduction to Psychology, filled out the questionnaire (Appendix 2). The students were told that the survey was part of a research project and was to be filled anonymously to preserve confidentiality.

Case Study 1

ENL 111 A - Public Speaking for Freshman

Twenty students are enrolled in this course, 6 males and 14 females under 20 years old, and one 21 year-old student. According to the descriptive information in the questionnaire, all 20 students own mobile phones, 17 own PCs and 12 own tablets.

Results

Question 4

What is your opinion on the mobile phone policy at NDU (as stated in the syllabus)?

Seventeen, or 85% of students agree that the policy is "fair" because mobiles are "distracting" and "disrupt attention."

Five out of the 17 students said that although they agree, mobiles should be allowed in case of emergencies

Two students said they should be allowed for research in class if needed: one student wrote that they should be allowed if kept on silent and used "to help with work, without talking on it", and the other student added that mobiles "should be kept on silent, but not out of sight!"

One student did not reply.

Question 5

Do you prefer to have access to the Internet, on your mobile phone, PC or tablet in class? Why?

Sixteen students, or 80% said yes, for information and research

Three, or 15% wrote mobiles are easier and faster than the Internet

One student said no, "I don't need it in class."

Question 6

To record any information in class, do you prefer to use a technological device? Why?

Eight students, or 40% said no, they prefer to write, not use tablet or PC

Eleven students, or 55% said yes, they prefer to use electronic devices instead of writing by hand.

One was neutral, "It doesn't matter."

Case Study 2

PSL 201 A Introduction to Psychology

Thirty-one students are enrolled in this course. One student was not available to fill out the questionnaire. Eighteen Sophomore, nine Junior, and three Senior, a total of 30 students, filled out the Questionnaire. Twenty-four students are 20 years old, and six are over 20, between 21 and 24. They were 19 females and 11 males, mostly Lebanese, with various majors from all Faculties: Journalism, Business and Finance, Architecture, Psychology, Advertising and Marketing, English, Radio and TV.

Results

According to the questionnaire, all 30 students own mobile phones, 28 of them own PCs and 19 own a tablet that they bring to university.

Question 4

What is your opinion on the mobile phone policy at NDU (as stated in the syllabus)?

Sixteen out of 30 students agree with the policy, i.e. 53% agree

Thirteen students, or 43% disagree because, "they are mature enough, and responsible, and should be allowed to decide for themselves."

One student has no comment

Most of the students agree that the mobile should be silent but available for emergencies, families, and work

Question 5

Do you prefer to have access to the Internet, on your mobile phone, PC or tablet in class? Why?

Twenty-four students, or 80%, agreed they prefer to access the Internet

Five students, or 16.6% disagreed

One said, "The teacher, not the students should use it."

Question 6

To record any information in class, do you prefer to use a technological device? Why?

Sixteen students, or 53%, wrote yes, it is easier than pen and paper

Thirteen students, or 43% wrote no, writing is faster and helps us to study and memorize better

One student wrote, "Does not matter."

Conclusion

Based on both class results, we can state that students prefer to integrate technology in class in order to be more stimulated, to participate in research or projects, follow-up activities, to understand words, and look for information. It is logical to conclude then that technology adds involvement in class. Technology provides an entertaining element that makes lecturing less boring for students. However, almost 50% of the students prefer to write notes by hand to facilitate studying and memorization. According to the students, when it comes to taking notes, they prefer a more traditional approach to understand, and study.

Almost all Freshman (85%) students prefer to use their mobiles in class, while 10% disagree, and 5% are neutral. 80% like to use the Internet, 15 prefer the mobile phone, and 5% are

not interested. Regarding technical devices, only 40% prefer to use high-tech devices to take notes, while 55% prefer to write by hand, and 5% are indifferent..

The Sophomore students are divided in half, that is, 53% of them like to use their mobiles in class, 43 disagree, and 4% are neutral. 80% like to use the Internet, 17% prefer mobile phones, and 3% say that it is the teacher who should use technology not the student. Regarding technology or traditional hand writing, 53% prefer to use high-tech devices for note-taking, and 43% prefer hand writing. 3% are indifferent. The results are found in Appendix 3, showing each class separately and combined.

In the past, education simply meant face-to-face lectures, reading books or handouts, and completing assignments. Today education has a new meaning. Computers have become an essential part of every classroom and instructors are using DVDs, videos, power point presentations to give students a clearer picture of what they are explaining (How important is technology in education, 2012). Although to use or not to use and how much to use technology is still a debate among educators, there is no doubt that technology has the potential to improve education in terms of engaging students, demonstrating concepts, doing projects or research, and assessing progress (Kessler, 2010, 8 ways technology can improve education). When instructors feel they have to perform a song and dance to capture their students' attention, there is no doubt that technology is one way of holding the students' attention. The goal is to know how much technology to use. Growing accustomed to getting quick answers with a few keystrokes, students have to learn to take their time to think and analyze. They have to remember to reflect and come up with their own opinions. It is not enough for students to rely on finding a quick answer or definition of a word or concept; they need to learn how to assess and synthesize the information they get online; they need to develop their critical thinking and creativity.

In summary, technology is an instructional system, a useful resource, a tool to enhance the learning process. When used properly, it can be powerful in engaging and challenging students (How important is technology to education, 2012). In the quest for more learner participation, instructors may decide to change their styles to be more entertaining and to shorten their lectures to fit their students' attention span; but, are we doing them a favor as a result? Technology can be "as much a solution as a problem" (Technology is changing how students learn, 2012), and the positive aspects of technology as an educational tool outweigh the negatives. Educators can engage students through power point and video presentations and coach them on how to work through challenging projects and assignments. The use of technology in more interactive and dynamic teaching environments is beneficial. However, in addition to technological literacy, students must acquire new skills.

About the Author:

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Appendix 1.



Notre Dame University – Louaize

Faculty of Humanities

Department of English, Translation, and Education

ENL 111 A Syllabus – (3.0); 3 cr.

Amal Malek, Associate Professor

MWF 9-10

MWF 12-1 or by appointment

Appendix has been edited for this article

1. Course Description

HA 246 ext 2413

ENL 111 is designed for Freshman students to assist them in developing their public speaking skills. The main purpose of this course is to familiarize students with the basics of public speaking through the analysis of the audience. In-class activities include model speeches for analysis and speech presentations. Students are expected to work individually and in groups, and to deliver speeches for various purposes and occasions.

2. Student Learning Outcomes

Upon successful completion of this course, and as a result of the activities and study in this course, the students should be able to accomplish the following:

- To analyze their audience needs, values, and opinions as a primary point for planning their speech
- To overcome their apprehension and confidently deliver their speech
- To generate main ideas, gather supporting materials, organize, and deliver their speech
- To use sound reasoning
- To choose effective words
- To adequately develop and use visual aids
- To become better listeners
- To arouse audience interest and enhance audience understanding
- To give speeches that are appropriate for the occasion
- To present informative and persuasive speeches
- To participate in class discussions
- To effectively use body language and voice when delivering a speech

3. Teaching Methodology and Techniques

This course involves in-class discussions of the material assigned. Students are required to read the material prior to class discussions and to engage actively in these discussions. In-class exercises and home assignments will reinforce the theories and concepts explained and discussed in class.

9. Course Policies

There are no make-ups for missed tests or for the final examination. Failure to sit for a scheduled test and/or final exam will result in an F on the test/exam. A student may be excused in exceptional cases and upon the discretion of the English, Translation, and Education Department, and only if the student presents a valid documented excuse (from the SAO in case of illness) to the chairperson of the department within 72 hours of the scheduled exam date.

While understanding that we all are busy with school, work, and family, your decision to register for this course is an indication that you have made it a high priority. Thus, extensions of assignment due dates are given only in extreme situations (death of a close family member, hospitalization, etc.) and require documentation on your part. Otherwise, due dates are fixed and non-negotiable. All assignments should be submitted on or before the assigned due date. Assignments past the due date will not be accepted for full credit. Examples of unreasonable extensions for an assignment include frequent computer malfunctions, outside class-work, or job responsibilities that inhibit meeting the required deadlines. If you anticipate missing a deadline on an assignment, you should send an e-mail to your instructor before the deadline. Unexcused

assignments submitted after the due date may be returned ungraded or assigned a lower evaluation. Whether an extension is allowed will be at the instructor's discretion.

Assignments: All work must be typewritten (unless otherwise specified) and submitted in a professional manner. The instructor reserves the right to return, for resubmission, any work that is not neat, legibly, and professionally submitted

Mobile phones should be turned off and out of sight (i.e. not face-up on the desk but preferably inside purses, backpacks, briefcases, etc. or face down on the desk). Phones may not be answered.

Students must attend class with the required material (i.e. original textbook, notebook, pens, etc.).

Once in class, students are expected to remain in class for the entire period.

English must be the only language spoken in class at all times.

Special needs: Any student who feels s/he may need an accommodation due to a disability should contact the instructor privately to discuss those specific needs.

Students must check their NDU email daily as this is the means used by the instructor to communicate. Students will receive notice via NDU email when the instructor posts announcements on the course's Blackboard.

Appendix 2

This questionnaire is conducted as part of a research project. Please complete it if you are a full-time student at NDU. Your name is optional. Please be as honest as possible 😊

A. Descriptive information

1. Grade level: Freshman-----Sophomore-----Junior-----Senior-----

Sex: Male-----Female-----

Age: 20 or younger-----

21-24-----

25 or older-----

2. Do you own any technological device: Check as many as applicable

Mobile phone----

Computer-----

Tablet-----

3. Do you have a declared major: Yes-----No-----

What is your major:-----

B. Opinions

4. What is your opinion on the mobile phone policy at NDU (as stated in the syllabus)

5. Do you prefer to have access to the Internet, on your cell phone, PC or tablet, in class? Why?

6. To record any information in class, do you prefer to use a technological device? Why?

Thank you for your help. Please return this survey to Dr. Amal Malek, Associate Professor

Appendix 3

Summary of Results, Technology in Education											
ENL 111 20 students	Q4	Mobile phone policy	17	Agree	85%	2	Disagree	10%	1	Neutral	5%
	Q5	Internet, mobile phone, PC or tablet	16	Internet	80%	3	Cell phone	15%	1	None	5%
	Q6	Tech device or handwriting	8	Tech device	40%	11	Handwriting	55%	1	Indifferent	5%
PSL 201 30 students	Q4	Mobile phone policy	16	Agree	53%	13	Disagree	43%	1	Neutral	4%
	Q5	Internet, mobile phone, PC or tablet	24	Internet	80%	5	Cell phone	17%	1	Teacher not student should use	3%
	Q6	Tech device or handwriting	16	Tech device	53%	13	Handwriting	43%	1	Indifferent	4%
ENL111 & PSL 201 50 students	Q4	Mobile phone policy	33	Agree	66%	15	Disagree	30%	2	neutral	4%
	Q5	Internet, mobile phone, PC or tablet	40	Internet	80%	8	Cell phone	16%	2	Teacher not student should use	4%
	Q6	Tech device or handwriting	24	Tech device	48%	24	Handwriting	48%	2	Indifferent	4%