

Technology perceptions in the classroom and beyond

Jason TACKER
Akita University

Aya YAMASAKI
Kanazawa Institute of Technology

At two Japanese Universities in Kanazawa and Akita, a survey was given to 198 students to attempt to discover the student perceptions of the usefulness of technology in the classroom and beyond, into their future working environments.

This survey was created with reference to a news article entitled "*Professors Use Technology to Fight Student Cheating.*"

"Cheating is super easy now. College classes are way too big, and you can pull out anything on your desk," he says. And it is widespread, he says, because students are busy, hungry for good grades, and often skeptical of the lifetime benefit of learning what many professors put on tests. The student, who worked nearly full-time during school, said it took him only an hour or so to program his calculator with notes. That saved him as much as 20 hours of study time. "I don't really consider what I did cheating...because in the real world I would be using that device...I see that as just being more efficient."

(<http://www.usnews.com/education/articles/2008/10/03/professors-use-technology-to-fight-student-cheating>)

The student quote, while dealing primarily with cheating, is what our survey was created for. The student reiterates what most students experience almost everywhere: being very busy, and skeptical of the importance of all the information a teacher expects students to learn. This lends itself well to the idea of technology use in class for enhancement of learning, but most important is the final sentence of the quote. The student believes that she/he will be using technology in the future for their career and so use in the classroom is not just efficient but also a form of "practice" for whatever future occupation they go into:

"It's apparent that skills colleges and careers look for in students are changing to keep up with the pace of technology. Students are required to know different skills by the time they graduate high school compared to just fifteen years ago. We are now not only training people to work

locally, but globally. The question becomes, how do we adequately prepare students for the future?"

(<http://blog.mheonline.com/technology-helps-to-prepare-students-for-college-and-career/#prettyPhoto>)

The questions then that were then posed to Japanese students at both universities attempted to determine whether or not technology use in their own opinions was beneficial and if they believed that technology use in class is a way of preparing for future employment.

The survey

The six portions of the survey concentrated on technology used in the classroom, frequency of use, what the technology is used for, and if students feel it is beneficial.

あなたは通常、講義にどんな電子機器を持ってきますか？

Answer Options	Response Percent	Response Count
スマートフォン	84.3%	167
電子辞書	66.2%	131
ラップトップコンピュータ	15.7%	31
answered question		198
skipped question		0

The question reads, “What technology do you regularly bring to class?” The three choices were smartphone, electronic dictionary and personal computer. The majority at 84% said they brought a smartphone. Next at 66% were electronic dictionaries and finally 15% regularly brought personal computers to classes. The overlap in percentages is theorized to come from the observation that often students will bring more than one, or all of the above to class. Regardless, smartphones make up the majority considering they do both the job of a dictionary and computer in a compact size.

教室で、あなたはどの程度テクノロジーを使いますか。

Answer Options	一度も使ったことがない	めったに使わない	ときどき使う	よく使う	いつも使う	Rating Average	Response Count
	2	25	104	53	13	3.25	197
answered question							197
skipped question							1

“How often do you use technology in the classroom?” is the next question, with 52%

stating they sometimes use it, 27% saying they often use it and 6% saying they always use it. The result is a substantial 85% of students saying that technology use seems to be relatively prevalent in classrooms.

教室では、あなたはどのようにテクノロジーを使いますか。

Answer Options	Response Percent	Response Count
言葉の意味を調べるため	84.3%	167
情報を探すため	56.1%	111
難しいフレーズを訳すため	32.8%	65
	<i>answered question</i>	198
	<i>skipped question</i>	0

“How do you use technology in the classroom?” 84% say they check the meanings of words, 56% looking for information and 32% translate difficult phrases. Again, overlap in percentages due to multiple choices and the importance given to the choices.

教室でテクノロジーを使うのは非常に有益である

Answer Options	強く反対	反対	やや反対	やや賛成	賛成	強く賛成	Rating Average	Response Count
	0	1	11	61	94	29	4.71	196
	<i>answered question</i>							196
	<i>skipped question</i>							2

For this section it seems relatively clear that technology is an important aspect of the classroom. The students must choose how they agree with the statement “Using technology in the classroom is extremely helpful”, 47% agreed and 14% strongly agreed with the statement.

Students do regularly bring technology, mostly smartphones to the classroom, and regularly use them. They use the technology in the class to try and understand aspects of the classes that are either confusing or potentially unexplained by the teacher.

教室でテクノロジーを使うのは授業中の課題を遂行するのに必須である

Answer Options	強く反対	反対	やや反対	やや賛成	賛成	強く賛成	Rating Average	Response Count
	1	10	16	92	55	24	4.32	198
	<i>answered question</i>							198
	<i>skipped question</i>							0

“Using technology in the classroom is essential to completing classwork.” The idea behind the statement may not seem so obvious. If students did not use technology in class to complete the work, they would be at a risk of failure or uncertain of the outcome of their grade

if they did not use the technology to minimize risk. To this end 46% partly agreed while 27% agreed and 12% strongly agreed. In total, 85% agreed in some way that technology was essential to the class.

教室でテクノロジーを使うことによって自分の将来の仕事の準備となる。

Answer Options	強く反対	反対	やや反対	やや賛成	賛成	強く賛成	Rating Average	Response Count	
	1	0	26	98	54	19	4.32	198	
								<i>answered question</i>	198
								<i>skipped question</i>	0

“Using technology in the classroom prepares me for my future occupation.” Students seemed to have believed that using technology in the classroom was a way of preparing to use technology in whatever job they attained after university. 85% agreed that in some form or another, the use of technology was a way of preparing for future jobs and careers.

While this was only a survey of 198 students attending two different universities of in Japan, a larger survey of college students was completed by Hanover Research in cooperation with McGraw-Hill Education. They asked 1000 college students a similar question to our own: Can technology help improve readiness? Meaning readiness for life after college in a career of their choosing.

The survey found that 80% of college students surveyed believe that the use of study technology in college will improve their employment prospects. It was also found that now more than 81% of students now use mobile devices to study which is a 40% increase from a survey administered between the years of 2013 to 2015 (Social Team, 2015).

Students and employers on technology

The findings for students in both our own survey and the larger scale survey by McGraw-Hill claim that students do believe that technology use in the class readies them for a future occupation but what types of technologically skilled workers are employers looking for?

In his article *Preparing Students for Their Technological Future*,(2010) Dr. Willard R. Daggett talks about how it has become imperative in the modern world for students to learn and use technology proficiently if they want to find jobs and stay ahead of the job market where technology has leveled the playing field for those who once upon a time were in the technological gap.

“The society in which our students must succeed has become a global one, in large part due to technology. Through computer and Internet access, millions of students in developing countries

around the world have the opportunity to acquire the necessary skill set to compete worldwide for good jobs. For them, technology has essentially leveled the global playing field.”

(<http://www.leadered.com/pdf/Preparing%20Students%20for%20Tech%20Future%20white%20paper.pdf>)

Daggett furthers the idea by providing an example of how work forces that are not technologically skilled are now at a major disadvantage when it comes to finding jobs. It is now more cost efficient and beneficial to hire outsourced workers who have learned how to use technology and will take less pay to do the jobs that were once considered “highly skilled” and given to people from the same country as the corporation doing the hiring.

Teaching technology: early on

Consequently, if students are falling behind other nations in education because of lack of technology use in classrooms and teaching of practical skills with technology in higher learning such as university what are educators to do?

Chrys Dougherty in the article *“College and Career readiness: The importance of early learning”* (2013) states that it is better to start early with education and that technology such as the internet and smart phones are not enough by themselves, rather the learners need adults or teachers to guide them on to implement such technologies which in turn will make later learning and technology use such as in college much easier.

“That learning gaps emerge early, particularly among disadvantaged students, is one of the better-documented facts in education. Students who do not have a good start usually do not thrive later on. That is due not only to the fact that students in stressful environments with limited learning opportunities often remain in those environments, but also because early learning itself facilitates later learning—students who already know more about a topic often have an easier time learning additional information on the same topic, and early exposure to knowledge can stimulate students to want to learn more.”

(<http://www.act.org/content/dam/act/unsecured/documents/ImportanceofEarlyLearning.pdf>)

If we want students to be educated well and proficient in using technology from high school into university, then as educators we have to start early on in educating children on how to use technology in the classroom to learn more and also as a way to shorten the gap, so that later on the comfort they have grown with technology makes itself at university a much easier tool in becoming a competitive worker in the global market.

Teaching technology: High school and University.

In a final article from Education World written by Sarah W. Caron entitled, *Tomorrow's workforce: what students need*, (2011) the author talks with business leaders in what students graduating and going into the global job market need to have in order to land a job.

"For instance, not all students have the right computer skills. 'As technology has become pervasive in the classroom and the workplace, solid technology skills are essential for every student. Teaching digital literacy skills ultimately falls upon educators. Schools need to go beyond the 'three R's' to improve college and career readiness with technical skills,' said Ray Kelly, CEO, Certiport (www.certiport.com), a certification testing company."

(http://www.educationworld.com/a_admin/tomorrows-workforce-what-students-need.shtml)

Caron continues on, explaining that students need to have technological savvy in the modern methods often used in business communication. Such technologies as work emails is held at a higher standard of seriousness than a Facebook update and text messaging friends. In essence teaching has to include using technology, teaching how the tech is used and then to what degree of seriousness a person must treat certain kinds of technology.

"An email documents ideas, relationships and process, so it is crucial to have the writing skills for clear, concise and appropriate communication. Also, because more and more work is done in teams made up of people from throughout the world—face-to-face and virtual—culturally sensitive communication reflecting global awareness takes on a greater importance than ever before, said Collias."

(http://www.educationworld.com/a_admin/tomorrows-workforce-what-students-need.shtml)

Conclusion

For the majority of the modern world we have gone beyond the point of no return when it comes to the technology we now have that runs our lives. Every year more classrooms start using technology such as iPads or tablets to further enhance education for students and use technology based methods such as "blended learning" to teach in classrooms.

Our small sample of students at Akita University and Kanazawa Institute of Technology agree that the technology they bring to classrooms such as smart phones, dictionaries and personal computers maybe essential for their success in the classroom, and to the idea that technology is preparing them for the future.

On the other hand, this could also be seen as a problem; the technology used is

universally agreed on by students and employers alike as necessary for the future of employment however the technology often isn't the focus itself and merely a vehicle for a different way to educate in an older style. To counter act this, technology should be implemented earlier on with younger children so they form a comfort with it that follows them into high school and university life. It is in higher education that the comfort of technology use will make educating with technology advantageous and at the same time make technology the focus of education so that it does prepare students for after university careers.

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