

STUDENTS' PERCEPTION OF TECHNOLOGY USE IN AN INSTITUTE OF HIGHER LEARNING IN MALAYSIA

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Abstract

This qualitative study was carried out in a Malaysian Institute of Higher Learning (IHL) among a small group of pre-university students studying English as a foreign language. Malaysian IHLs pride themselves on the level of technology integration within their curriculum, and this was put to the test with the recent pandemic situation resulting in education transitioning to online on a global scale. This research was conducted to analyse students' perception of the use of that technology with a view to determining whether students viewed technology use as both sufficient and as a genuine aid to learning. Students were interviewed to ascertain what technology they used, how good they were at using it, the challenges and impact of using technology in learning, whether technology helped students to learn and whether it made learning more engaging. The results of the study revealed firstly that students are generally satisfied with the level of technology use in the curriculum, reinforcing the claims promulgated by the IHL. Secondly, the research revealed that, generally, younger tertiary level students perceived themselves to be considerably less IT literate than they are frequently given credit for. The findings are that while the IHL is meeting its commitment in terms of technology use in the curriculum, perhaps more could be done to support students in the application of technology in learning and that the use of video should be increased.

Keywords

Technology Use, Institute of Higher Learning (IHL), Malaysia

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Introduction

Technology has become synonymous with education these days, but how technology is integrated into the curriculum varies considerably from institution to institution. The recent surge in online education mirrors the surge in online activity generally, particularly with the emergence of new technologies such as Web 4.0, the Internet of Things (IoT) and Artificial Intelligence (AI) (Yaacob and Gan, 2021). This time of pandemic forced most institutions to turn to online teaching and learning, with the initial period being characterised by a lack of preparedness, uncertainty and a degree of panic (Daniel, 2020). After more than one year of pandemic related online learning, the time is right to undertake a review of how the level of technology use within the IHL supports the instructional activities and learning objectives of the institution. Merely uploading links or documents into a learning management system (LMS) for students to access is inadequate (Wright, 2017). Instead, technology should be a part of the teaching pedagogy and not a 'bolt-on' extra, so it is important to continually assess teaching practices and delivery to ensure that both are consistent with the ideology of the institution. One of the concepts that is now widely embraced in the modern curriculum is that of collaboration where students no longer work in isolation but collaborate with each other, as they are expected to do in the real world, and technology is a prime facilitator for collaboration due to the many and varied ways in which it enables learners to communicate with each other (Livingstone, 2019). Additionally, technology accommodates a wider range of learning styles, thereby enabling learning to take place for every individual, no matter students' learning preference (Trembach and Deng, 2018).

This study aims to determine students' perceptions on the use of technology in their curriculum in an institute of higher learning in Malaysia, and whether that technology use acts as an aid to students' learning. It is necessary, therefore, to understand what is meant by student perception, which is the thoughts, views and opinions of students based largely on their experiences (Berry, 2018), but also according to gender as this may be an influencing factor in different how individuals perceive situations (Martin, Wang and Sadaf, 2018). Students' perceptions are also influenced by their own confidence levels as this is often a factor in the degree to which they engage in their course (Martin, Stamper and Flowers, 2020). Student perception is important because students are the primary stakeholders in education and if not satisfied with technology use or learning experience, they will not engage or be invested in their studies, and most important is their perception of how easily it is to interact with their instructors, especially, when studying online courses (Martin, et al., 2018). Another reason for stressing the importance of student perceptions is that using technology in teaching is linked to positive perceptions which, in turn, are linked to higher grades (Wright, 2017).

During this research, two assumptions were made, namely that learning is perceived by students as being more relevant and engaging using technology in the curriculum, and that technology use in the curriculum is perceived by students as an aid to learning. The objective of the research was to test these assumptions through individual interviews with undergraduate students studying English as a foreign language in an institute of higher learning in Malaysia to answer the following research questions:

1. Is learning perceived by students as being more relevant and engaging using technology?
2. Is technology use in the course is perceived by students as an aid to learning?

Methodology

This research is an exploratory study, employing a generic interview survey method which is qualitative in nature interviews were conducted with students in order to explore their perceptions of the use of technology in the curriculum. As the students were studying English as a foreign language, the interview questions were simply worded to ensure students understood the questions and were able to provide relevant answers, with individual interviews lasting approximately twenty-five minutes. Bearing in mind the interviewees were learning English as a foreign language, each question was supported by two simplified 'back-up' questions to which the interviewer could resort in the event of comprehension difficulties. As an example, if a student did not understand the question "Can you tell me about how technology is used in your current course", the question was rephrased as two simpler questions: "What technology do you use in your course?" and "How do you use that technology?" A more direct style of question is often required for non-native language learners who may not have the prerequisite English language skills to formulate responses to open ended questions, thereby enabling respondents with limited language ability to provide more direct answers.

The questions were designed to get students to reflect on their perception of the use of technology in different areas of their course, such as their ability and confidence in using technology, some of the challenges faced using technology, the impact of technology on learning, whether using technology helps them learn, whether using technology makes learning more relevant and engaging, and their perception of how lecturers can improve technology use on the course. Questions were designed to encourage freely expressed opinion, so elicited a wide range of responses and interview responses were volunteered without any form of prompting or direction from the interviewer. Where something was not mentioned by interviewees, it does not necessarily mean that the student had no thoughts on the matter, merely that the student was unable to verbalise their thoughts or that it didn't occur to them to mention it.

Results and Discussion

The results of the information collected should be seen in the context of the language limitations faced by interviewees, as some may not have been fully able to articulate their perceptions precisely and accurately or may have had ideas that they could not express and so which were not recorded. As the style of questioning was open, the responses given varied considerably. For some categories, such as students' perception of their ability and confidence in using technology, the range of responses was more limited than for other categories, such as students' perception of the impact that technology has had on teaching and learning, the raw data in the range of responses being far wider than is possible to report herein. Therefore, a summary overview of the grouped perceptions is included in Table 1 below:

Table 1: Summary overview of students' perceptions on the use of technology in learning

Tell me about how technology is used in in your current course.	Warm up question to put students at ease and gather information		
Students' perception of their ability and confidence in using technology	Good to very good	Average	Poor to very poor
	25%	25%	50%
Students' perception on the challenges faced when using technology in their course	Hardware related challenges	Software, activity or application challenges	Mental, personal or subjective issues
	42%	33%	83%
Student's perception of the impact of technology on teaching and learning	Ease, accessibility, convenience	Availability of knowledge	Versatility of technology
	75%	67%	50%
Students' perception of whether using technology in their course helps them learn?	Access to knowledge & information	SDL, self-improvement	Media & collaboration
	75%	83%	67%
Students' perception on whether using technology makes learning more relevant and engaging?	Learning is more useful & relevant	Games, fun apps, quizzes are interesting	Multi-media & Other
	92%	83%	67%
Students' perception of how lecturers can improve technology use on the course	Had suggestions or recommendations	Had no suggestions or recommendations	Considered already good enough
	67%	8%	25%

An initial factual question was asked to put interviewees at ease and to gather information on the types of technology used by students, both in and out of class, and response divided into three categories of software, hardware and activities. All the students used the university LMS but many students reported using other software programs and applications, both in class and in their own self-directed learning (SDL), such as Quizzes and Quizlet, YouTube, online translators and dictionaries and other miscellaneous apps. Students also commented on the use of PowerPoint slides used by lecturers as an aid to learning in their classes. The most common devices used for learning were laptops followed by the use of smartphones, through which students are considerably more engaged with their learning and can learn anywhere and at their own pace (Ahmad, Ozturk and Abdullah, et al., 2019; Ong, 2019; Yee and Ean, 2020). No students mentioned tablets, despite their wide acceptance as a legitimate technological device for teaching and learning (Gokcearslan, 2017). The most frequent activity was attending online class, doing homework and conducting internet searches.

Students' perceptions of their ability and confidence in using technology was perhaps the most surprising of the responses because it is commonly believed that younger learners are more computer literate and competent with software (Poláková and Klímová, 2019). Being the first generation to have grown up with the internet, devices and smart technology from a young age, they are termed 'digital natives' (Mohr and Mohr, 2017) but it is not necessarily true that they are as computer literate may be imagined (Poláková and Klímová, 2019), which could form the basis for further research. Of the participating students, one quarter perceived themselves to be within the 'good' to 'very good' range, a further quarter perceived themselves as moderate users, and the remaining half of the respondents perceived themselves as 'poor to very poor' at using technology. Only 8 percent of users considered themselves to be 'very good' with technology. This may have a direct bearing on how good students are at self-directed learning using technology as, according to Geng, Law and Niu, (2019), familiarisation with technology is a determinant of students' learning success in a blended learning environment. This could also

account for some learners' reluctance to participate actively in online classes during this time of pandemic. The technology with which students were most familiar or considered themselves competent included primarily YouTube, Internet searches and using PowerPoint (50 percent).

Students' perception of some of the challenges of using technology were also revealing with 83 percent of students perceiving technology as giving rise to what could be described as non-physical, cognitive or subjective preferences, such as: preferring to learn from books, preferring face-to-face class, lack of atmosphere, limitations of editing or working with PDF files, preferring handwriting to working electronically and too much screen time and computer dependency, particularly in this period of pandemic when learning is almost exclusively online. These perceptions far outweighed other issues, which potentially distorted students' perceptions of technology use, such as hardware, connectivity, and internet issues (42 percent) with a further third perceiving participating in class as an issue, having experienced challenges with communicating with others in the online class (speaking and listening), and other online class-based learning activities, many of which may were additionally attributed to connectivity issues, a vital component in any online activity (Wright, 2017). Thus, despite the many things that can be accomplished using technology, many younger learners apparently still prefer traditional means of learning. More positively, a quarter of interviewees believed that anything could be achieved with technology, and they did not consider that they were held back by the limitations of technology, effectively agreeing with research findings (Jaleel and OM, 2017), including the comment from one student that "technology can't teach us to think for ourselves,"

Students' perceptions of the impact of technology use in learning yielded a wide range of responses, mostly dominated by how technology facilitated learning through flexibility, accessibility, ease of use and mobile technology, being appreciated by three quarters of interviewees (Wright, 2017). The availability of knowledge and information online and the ease with which it could be referenced was perceived by two thirds as being a clear benefit in using technology, and this included knowledge gained using games, mobile apps, online translators and dictionaries. Versatility of technology was perceived as another clear benefit by half of interviewees, but the ability to learn using a smartphone was mentioned by only 17 percent of students, which is less than might be envisaged.

Almost all interviewees perceived using technology as acting as an aid to learning with three quarters commenting on the availability of information and knowledge online and, in particular, the benefit perceived in learning grammar and vocabulary through online dictionaries, translators and other language websites. Interestingly, 83 percent commented on the ability to learn without instructor input, this form of self-directed learning now being embraced by many learners. This is a direction many IHLs have chosen to pursue due to the flexibility of learning options for the student and better management of teacher resources. Where students learn independently online through pre-recorded videos and guided material, learners can pace their learning, so may require less time to study subjects in which they are more confident or familiar, but may wish to work at a slower pace or repeat learning where they find the subject more challenging (Wright, 2017). This is reflected in one students' comment: "Teachers don't have to tell us what to do all the time." The use of media and collaboration was perceived as beneficial by two thirds of students, including the use of online class, video learning websites, such as YouTube and the BBC, and finding online friends or 'study buddies' with whom to practice speaking English. However, there were some indications that certain aspects of using technology were unhelpful, such difficulties in understanding online class, distractions, poor sound quality online, bad for health (posture and eyesight) and too great a dependence on technology "stopping us thinking for ourselves". Students' perceptions of how learning is more engaging through

technology use were in line with those of technology acting as an aid to learning, with 92 percent of learners perceiving technology as making learning more relevant and engaging.

Summary and recommendations

This research was conducted to analyse students' perceptions of the use of technology and whether it was perceived as an aid to learning. Two assumptions were made, being that learning is perceived by students as being more relevant and engaging using technology in the curriculum, and that using technology in the curriculum is perceived by students as an aid to learning. The findings from this programme are encouraging insofar as students perceived technology was as being appropriately employed in their course, with overall responses revealing that 92 percent of students perceived that technology has enhanced their learning, particularly in respect of distance learning and, in particular, during this time of pandemic, and three quarters of students perceived that using technology actively helps them to learn. The perception of a quarter of the students was that existing technology was already sufficient and they had no suggestions for improvement, which supports Wright's (2017) conclusion that students are equally satisfied with online learning as they are with face-to-face lessons.

However, responses from two thirds of students indicated that students perceived that a wider variety of activities would be beneficial and, in particular, greater use of video and multimedia, a finding supported by Unal and Unal (2017). Therefore, it is recommended that instructors consider introducing a wider range of appropriate learning activities and resources and employing much greater use of multimedia and video in the curriculum. Additionally, it was found that students do not perceive themselves as being as competent in technology use as we may expect of young learners so may need a greater degree of guidance. However, the responsibility for familiarising students with technology rests not just with lecturers but with students themselves, as being competent, independent users of technology is the biggest single factor in predicting students' success in academic performance (Meng, Qiu and Boyd-Wilson, 2019), so those neither competent nor confident to use technology may be left behind.

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