DIGITAL NATIVE: A STUDY ON THE FIRST-YEAR STUDENT

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Abstract: The digital native generation emergent triggers the educational practitioner to develop a new way of approaching the teaching practice in the classroom. As it is claimed that this generation has a unique characteristics and way of learning. Therefore, this paper explore the experience of the first year student of English language and letters department in using technology. Students were asked about their access to, use of and preferences for a wide range of established and emerging technologies and technology based tools using a questioner developed to assess their level of digital nativity. The results show that many first year students are highly tech-savvy. However, each student's experience on the use of technologies and tools (e.g. computers, mobile phones) show considerable variation. The findings are analyzed using the Prensky's theory on the 'Digital Natives' and the implications for using technology to support teaching and learning in higher education. The reported data indicate that for a range of emerging technologies were used intensively by the students. Furthermore, the majority of the respondents also claimed that they used the tools and technology to support their study. However, it is inconclusive as how the student integrate the tools and technology in their study.

Keywords: digital native, learning and technology, first-year student

INTRODUCTION

In the recent years there have been major changes and revolution in teaching and learning strategies in the higher education as a result of usage of technology and the emergence of 'Digital Natives' generation. The generation is born from the assumption that most of the students who are currently studying in university were born into a generation that grown up surrounded by technology. Therefore, they are knowledgeable with wide range of technology and tend to rely much their life on it.

The characteristics of this group are having advanced ability of multitask, a reliance on technology to maintain social contact, a disposition to share content and the ability to adopt and adapt new technologies to satisfy their personal needs (Dede, 2005; Oblinger & Oblinger, 2005; Prensky, 2001a). The Prensky's basic notion was that this new group of universities students have a fundamental difference from any of their teacher experience. Digital Natives had "spent most of their lives using computers, video-games, digital music players, cell phones, and other products of the technology (Prensky, 2001a). Furthermore he also stated that the digital culture and environment had changed the way this generation grown up which therefore change the student's way of thinking and process information which is different from their predecessors (Prensky, 2001a).

The effectiveness of traditional teaching methods was being contested in the light of the emergence of this new generation

(Tapscott, 1998). Based on this fact, it is natural that this generation will require a new teaching approach. As it is suggested that this group of students use technology in their everyday life extensively, they require more technology engagement in their process of learning.

Another assumption characterizing the Digital Natives are that this generation prefer receiving information quickly; be adept at processing information rapidly; prefer multi-tasking and non-linear access to information; have a low tolerance for lectures; prefer active rather than passive learning, and rely heavily on communications technologies to access information and to carry out social and professional interactions (Prensky 2001a, 2001b; Oblinger, 2003; Gros, 2003; Frand, 2000). Therefore, this generation is not only pointed to the supposed natural technological affinity and literacy of the Digital Natives.

The preferences and skills learning that characterize the Digital Natives were said to be incompatible with the current teaching practices. Oblinger (2003) and Frand (2000) suggest that the gap of technological knowledge between educators and students needs to be adjusted by reforming the pedagogical models to suit the new kind generation of students. Furthermore, Rodley (2005) maintained that this need has been acknowledge widespread and gain enormous attention in higher education circles. This argument strengthens the needs on reexamining the higher education teaching method to meet the current changing demand as triggered by the born of digital native students.

However, the previous argument is based on the theoretical and discussion in other countries context. In addition, the basic arguments are generated from a general assumption that students studying in universities have a good digital upbringing. Furthermore, it also assumed that the students' technological experiences are more or less homogeneous that most of the university student in this era are Digital Natives. This generalizations is very risky and overlooks many aspects which may play significant role but it is not taken into consideration such as technology based skills, knowledge, and preferences among the student population.

A research-based evident in understanding the students' technological experiences is vital data as a consideration to design university policy and practice. A thorough understanding of students' technological experiences will have clear implications on the teaching practices and improvement. Institutional decision making associated with technological infrastructure support, resource investment, student and staff support would also benefit from evidence about students' existing experiences with technology. Finally, an investigation of students' current technological experiences will have implications for ways in which technology could potentially be harnessed in pedagogically sound ways to improve teaching and learning.

Therefore, the aim of this study is to empirically document the degree to which the first year students of Language and Letters department access and use an array of technologies and technology based tools. This study also focuses on how students use a range of more recent or emerging, technology based tools (including social networking, blogs, wikis, and VoIP). The second aim is to determine the degree to which students utilizes particular technologies to support their studies at university.

Digital Native

There are a number of term used to name the broad concept of youth and digital networking technologies. The three most common term are "net generation", "digital natives" and "millennials" (Tapscott, 1998). This generation is characterized as being "at the heart of the new digital media culture", "exceptionally curious, self-reliant, contrarian, smart, focused, able to adapt, high in self-esteem, and has a global orientation" (Tapscott, 1998). Furthermore, Oblinger and Oblinger (2005) postulated that the generation in the 'net generation' were born around the time the PC was introduced. Furthermore, this generation also "is able to intuitively use a variety of IT devices and navigate the internet", but that "their understanding of the technology or source quality may be shallow" (Oblinger & Oblinger, 2005, p. 25).

According to Prensky (2001a), unlike older generations young people are now

constantly surrounded by and immersed in, and permanently plugged into, portable personal devices such as mobile telephones, MP3 players and handheld games consoles. Furthermore, Prensky argued that the emergence and rapid dissemination of digital technology resulted the young generation consider the digital technology as an essential part of young person's existence (Prensky, 2001a). Furthermore, Prensky also clearly classifies the predecessors of the digital native era as "digital immigrants" which means as "those who may have acquired some form of digital literacy", (Robinson, 2008, p. 1).

Defining digital natives in terms of an age range does not result in a fixed set of individuals. Palfrey and Gasser (2008) suggested that specific birth dates that characterize the generation is after 1980, while others are more precise, dating millennial as people born "in or after 1982" (Oblinger, 2003, p. 38) and before 1991 (Oblinger & blinger, 2005, p. 29).

Digital Natives and Learning

In the learning aspect, the digital native believes that this group of generation think and learn differently from other people. Prensky (2001a, 2001b) stated that this digital native are young people (or students) who think and process information in fundamentally different ways from their predecessors. Prensky (2001b) viewed the digital native from the neuroplasticity approach and believed that the brain causes it to change structure and thus affects the way people think. Furthermore, he stated that children raised with a computer think differently because of their "hypertext minds". "They leap around. It is as though their cognitive structures were parallel, not sequential" (Prensky, 2001b, p. 10). He also stated that "today's students think and process information fundamentally differently from their predecessors" and that their "brains have changed" (Prensky, 2001a, p. 4).

According to Prensky, digital natives are shaped by their technological environment to expect immediate responses. The digital native generation prefer random non-linear access to information (i.e. hyperlinks), and have a preference for images over text-based content. Described as multitaskers, they are comfortable being engaged in several tasks simultaneously. However, these people are characterized as being impatient with slower, systematic means of acquiring information and knowledge, and expect instant response and gratification or reward from the technologies they use. Additionally, according to these theories, they are highly adaptive, function best when networked, and use a range of technologies to network with their peers (Prensky, 2001a; Robinson, 2008; Helsper & Eynon, 2010)

Prensky (2001b) citing neurobiology, social, psychology studies on children also suggests that digital natives learn differently: "linear thought processes that dominate educational systems now can actually retard learning for brains developed through game and Web-surfing processes on the computer" (Prensky, 2001b). Therefore, the learning approach which might suitable for this gemeration are collaborative, oriented to problem-solving and task-based (Prensky, 2001a).

The previous elaborated literature demonstrates that there is an array of definitions for the digital native, an age range, to include aspects of expertise, and learning. In addition, some argue that the set of digital natives is defined not just by who they are or what they do, but also by how their brain works and how they learn and think. These argument will provide with sound consideration to assess the needs of curricula revolution in the research context.

METHOD
Sample

Data were collected from first year students of English Language and Letters Department of the State Islamic University of Maulana Malik Ibrahim Malang in 2015. In total, 110 students completed the questionnaire used in this study which represented 25% of first year students at the Humanities Faculty. As the study is intended to study the students labeled in the category of 'Digital Native' based on age. Most of the students who participated in the study were born between 1995 and 1997 (accounting for 100% of the sample), meaning that they were aged between 17 and 20 when they completed the survey. There are more females than males responded to the survey (69% females; 41% males).

Measure - questionnaire

A questionnaire was developed specifically for this purpose of the study, asking students about their access to, use of, skills with, and preferences for range of established, emerging technologies, and technology based tools. The questionnaire comprised three main sections: demographic information (4 items), access to hardware and the internet (8 items), use of and skills with technology based tools (13) and preferences for the use of technology based tools in university studies (13 items).

Procedure

Data was collected during study period and the 10th week of Semester 1, 2015. The researcher went around the classes to handout the questionnaire and supervise the question completion. A member of the research team attended to provide a brief students about the project and inform them that participation was voluntary and confidential.

Results
Students' access to technology and internet

Students were asked about their access to a range of technology hardware (computers, mobile phones, digital cameras, etc.) and their access to the Internet. The results are presented in table 1.

Table 1: The percentage of student's hardware

The Hardware Accessibility	Yes	No
Mobile phone	90	10
Portable player (e.g. ipod, Mp3 player	25	75
Personal computer	19	81
Smartphone	81	19
Laptop computer	80	20
Game console (e.g. PlayStation, Xbox)	7.3	92.7
Digital camera	13	87

Table 1 shows that most students has a high proportion of access to the hardware asked. As described in the table, it is interesting that a very small proportion of students have access to a desktop computer (19%). However, that 80% of students have access to a laptop computer, while there is only 20% of students having no access to laptop. Although, it is inconclusive as to whether they do not have the access of both laptop and PC. While access to mobile phones is almost universal (90%), the vast majority of students indicated that they have access to smartphone (80%). However, a relatively small proportion of students have access MP3 players (25%); Game console (7.3%) and digital camera (13%); however, these technologies are actually integrated in the smartphone. Therefore, the students owning smartphone have the access over digital camera and mp3 player. The smallest access that the students have is on the game console with only (7.3%).

Table 2: The percentage of student's internet accessibility

The Internet Accessibility	Yes	No
Internet access in your place	85	15
Internet on campus	82	19
Internet with your mobile phone	87	12

Regarding the internet access, in general 85% of students reported access to internet connection everywhere. It is only 20% of students having no Internet access at all. It indicates that most of the students uses internet connection intensively.

Table 3: The percentage of the students uses the mobile phone and web based technology for non-educational purpose

	Daily	Weekly	Monthly	Never
Online Discussion group (e.g. Whatsapp, line, bbm)	76	5	1	12
Social Media (e.g. Facebook, Twitter,)	58	26	9	3
Video conferencing	7	10	11	59
Mp3 player	28	17	27	28
Digital camera	80	3	4	10
Smartphone	79	3	3	9
Mobile phone	67	15	7	3
Internet website	78	13	4	2
Google	33	35	15	8
Wikipedia	71	14	4	5
Text Message	20	31	13	25
Weblog/blog	36	35	15	8
YouTube	5	3	3	5

Based on the results depicted on the table above, it is revealed that for non-educational purpose, most students use digital

camera more often compared to the other features by 80%. Unsurprisingly, most of the students use web based tool such as internet website (78%), Wikipedia (71%) daily for their non-educational use. It is only web blog 36% that noted lower than previous tools. The most importantly, these students have integrated their live with these tools and web based technology in their life as indicated from the frequency of the use.

Based on the table above, it indicates the following results:

- Many students (76%) indicated that engage in online discussion a daily basis and there is only 12% that claimed never used this online chat as their medium of discussion. Instant messaging is clearly a popular alternative to email as a web based communication tool.
- The similar trend is also seen in the use of social media website as Facebook and Twitter. 58% of the student access social network site every day and 26% of them claimed to only access these site weekly. It is only 3% have never logged on.
- With regards to the more novel communications technologies such as Video conferencing. It is only 28% of students have used them to some extent and the rest of them claimed to have never used this technology feature.
- Downloading MP3 music files is clearly an activity enjoyed regularly by a more than 72% of students downloading MP3s in their free time.
- Taking picture seems to be the most popular technology-based activity done by the student by 80%. It is only 7% percent of the students claimed to be rarely used camera and it is only 10% have never used it.
- Having a more sophisticated function, smartphone is classified as personal data manager has been used intensively by the student as indicated that 79% of the student use this hardware daily and it is only 3% does not have the access on this product of technology.
- The use of mobile phone in the student's activity is inseparable as it is used by 97% of the students.

- The majority of students (over 85%) have used the web, google and wiki for in their daily, to gather general information and entertainments, while there is some variation in the frequency with which students engage in these activities, the vast majority are using the web for these purposes regularly (i.e. daily or weekly).
- A significant blog culture is emerging in the first year students as shown that 36% of the student kept their own blog in their daily basis and it is only 8% indicated that they have never access blog.
- Moreover, the least used technology is YouTube where there is only 5% used this service daily.

The results presented in Tables 1, 2 and 3 show that the first year students surveyed in this study are 'tech-savvy' and are incorporating a range of traditional and emerging technologies in their daily lives. However, there are clearly areas where the use of and familiarity with technology based tools is uniform among first year students. Many technology based tools. 80% of the technology asked about were used and it's only less than 20% of the tools and web based service were still less used for the students.

Table 4: The percentage of the students uses the mobile phone and web based technology for educational purpose

	Daily	Weekly	Monthly	Never
Online Discussion group (e.g. Whatsapp, line, bbm)	81	4	3	13
Social Media (e.g. Facebook, Twitter,)	45	34	10	10
Video conferencing	2	8	19	62
Online assessment (e.g. Multiple Choice quizzes)	9	19	18	39
Mp3 player	54	15	5	18
Digital camera	14	19	20	34
Smartphone	80	3	2	12
Mobile phone	66	5	3	15
Internet website	80	13	0	3
Google	82	14	0	3
Wikipedia	36	41	10	9
Text Message	73	13	3	8
Weblog/blog	19	29	17	26
YouTube	29	40	15	8

The table shows that the trend of technology used in their daily activities is

singular with the tendency of using the specific hardware or web based application to support their study. It is reflected in the percentage that vast majority of the students used online chatting application such BBM etc. as their means online discussion group with their peers to support their study. This is indicated by the 80% of the students who use the application daily for the educational purpose. Similarly, the use of smartphone in supporting their course also noted at 80% use daily. It is only 12% of the students who stated to have no access on the tools. The different result is reflected on the use of internet website. Most of the students engage in using this feature to help their study by 80%. This indicates that their knowledge of the emerging technology is quite profound and it is also supported by the fact that the majority of the student access internet everywhere whether using university facility or through their smartphone. While, the least popular web service among the students is online assessment (e.g. Multiple Choice quizzes) with only 9% used this daily and only less than 40% used this monthly. While the rest of the students seem does not know about this web service.

DISCUSSION

This study elaborates the first year of university students' access to, and uses of a range of technologies which may have significant implications for the classroom designed in English language and Letters Department of UIN MALIKI Malang. In relation to the growing interest on Digital Natives, it is important to ensure that decision making about the learning experiences design and development for the new university students through the use of technology is both evidence based and empirically informed.

The results of this study highlight the condition of the first year student population with regards to technology and a potential of digital knowledge disparity among students within a single year level. While some students have mastered the technologies and tools of the 'Net Generation', the other students may not have the same experience. When one masters technologies and tools (e.g. computers, smartphones, YouTube), the patterns of access to, use of and preference for a range of other technologies may also change.

These findings supports to notion underpinning Prensky's (2001a) that the Digital Natives should be accommodated through the revision of curricula. This should be started from "adapting materials to the language of Digital Natives" (Prensky, 2001a, p. 4)

The level of technological diversity revealed in this paper should be the starting point to acknowledge the potential of curricula development and be considered by educational technology researchers. There has been increasing awareness on the core set of technology based skills of the incoming university students that should be promoted and nurtured although there is diverse range of skills exist across the student population (Caruso & Kvavik, 2005). Moreover, it is important to recognize that the mastery of technology does not necessarily a mastery of general information literacy. Although Kirkwood and Price (2005) argued that a student mastering the technology does not necessary good at other skills such as debate or speaking. Similarly Lorenzo, Oblinger and Dziubam (2006) stated that the changing way of leaning might implicate of how the higher education prepares a wide variety of information literacy capabilities. Therefore, the policy makers are required to be more tactful in planning the curricula to develop the potency of the students by considering the multifaceted condition.

Moreover, despite the diversity of technological experience in this sample of first year students, the degree to which the students are using of some emerging technologies and tools pose a number of opportunities for integrating innovative technologies into university curricula. It cannot be ignored that substantial proportions of incoming university students are using and reading web pages, are taking photos with their mobile phones, are regularly using social networking software such as WhatsApp for communicating and discussing so support their studies, and are sharing all sorts of digital files using both their mobile phones and the web. The potential for harnessing these technologies and activities for educational purposes has been actively discussed and effectively realized (e.g. Downes, 2004; Instone, 2005; Williams & Jacobs, 2004; Bryant, 2006).

The last set of question in the survey in this study is to assess whether students who use a particular technology in their everyday lives also want to use it in their studies. The data reported in this paper indicate that the students attach their live on a range of emerging technologies (blogs, instant messaging, texting, social networking, and downloading MP3s) quite closely. Furthermore, most of the students tend to use the technology to support their study. However, the limitation in survey design leave the observed association open to a variety of explanations. Furthermore, it is difficult to expect students to have the expertise to judge how to best use emerging technologies for educational purposes.

Another difficulty in associating and interpreting this finding is that it is still unknown about how the student thought on technologies could be used in educational settings. For example, the technology that most accessed by the students is online discussion with (80%) and web (80%) on a weekly basis. While there was strong endorsement for using these medias as part of university studies, it is still unknown in which way does texting via BBM and WhatApss might be to support their study. Students may have particular ideas about how their mobile phones could be used to support their learning (e.g. texting for asking homework or making appointment for studying together).

More research is needed to determine the specific circumstances under which students would like their 'living technologies' to be adapted as 'learning technologies'. The positive association between students' use of technology and their preference for its use at University leaves unanswered the question. It needs further research as to whether students' everyday skills with emerging technologies will correspond to skills associated with beneficial, technology based learning. As noted by a number of authors (Kirkwood & Price, 2005; Katz, 2005) the transfer from a social or entertainment technology to a learning technology is neither automatic nor guaranteed.

CONCLUSION

The advancement of the technology has presented a new 'species' of generation. This condition force the higher educational teacher and the teaching practitioner to be updated on the ever changing and often diverse characteristics of the student. The finding on the students' digital nativity should become the main consideration of the teaching practice especially in incorporating the array of technological tools in designing rich and engaging learning experiences for all students. The teacher should always seek the most proper way of delivering materials in the classroom as well as motivating the students to learn. Furthermore, the advancement of the technology should be viewed as the opportunity to evolve the teaching practice.

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