THE NET GENERATION IN JAPAN:
A SURVEY OF INTERNET BEHAVIOURS OF STUDENTS AGED 13-21

by **Keith Taynton**

Shitennoji University,

Habikino, Japan

keith@taynton.org

Abstract

Evidence from research into the "net generation" has shown it is not certain that there is a homogenous group of young people whose abilities to use technology are different from any other age group. With tools like blogs and online research becoming more popular in educational contexts research needs to provide a picture of what kinds of abilities and preferences students have so that appropriate teaching can be provided.

This study examines the Japanese context in three areas: 1) Technology ownership, frequency of use, and perceptions of ability; 2) Frequency and type of use of the Internet; 3) Use and perceptions of institution Websites. Students at two universities and one middle and high school (193 male, 197 female, ages 13 to 21) responded and the analysis seems to confirm other studies' results. They tend to own a lot of Internet-connected technology, especially mobile devices, are familiar with and frequently use the Internet, and perceive themselves competent to do so. However, their use is mostly for entertainment and not for learning or content creation. In conclusion, young people do not seem to be especially proficient at using technology for learning and may need technical or pedagogical support for sophisticated online educational tasks such as research or blogging.

1. Background

While distance education has been using technology to deliver courses to students in non-traditional settings, recent innovations such as blended learning bring technology directly into the classroom for purposes other than ICT instruction. For example, a project in New York teaches children entirely through the use of technology where students work in teams to make video games to learn the concepts they are being taught (Corbett, 2010). Technology could even signal the end of traditional classroom-based education. The Khan Academy (Khan Acadamy, 2011), among other Open Education Resource providers (OERCommons, 2011), seeks to provide quality education on many different subjects using YouTube videos and online worksheets to test understanding for anyone, anywhere, anytime. Forecasts for growth in virtual or online schooling

even predict that half of secondary level courses will be delivered online by 2020 (Searson, Monty-Jones, Wold, 2011: 363).

Many forms of technology are being introduced into educational environments: smartboards, Web 2.0 technologies like blogs, Facebook and YouTube, Virtual Learning Environments such as Moodle and Blackboard, and mobile apps for learning that are available on cell phones or other mobile Internet-connected devices. The utility of Web 2.0 technologies in learning and teaching for blended or online classes has been researched across a wide range of disciplines (e.g. Means, Toyama, Murphy, Baikia, Jones, 2009; Lai & Land, 2009; Marenzi, Kupetz, Nejdl, Zerr, 2010; Arbaugh, Godfrey, Johnson, Pollack, Neindorf & Wresch, 2009). As the results show, they can be useful in facilitating learning although there are also some problems with introducing these types of technology into courses (Schedlitzki, Young, Moule, 2011).

Within English as a Foreign Language (EFL) context there is a broad range of research showing how blogs and other technology-enhanced learning activities can help students learn effectively (e.g. Kukulska-Hulme, 2010; Maynard, 2007; Wang, 2009; Gailen & Bowcher, 2010; Blackstone, Spiri, Naganuma, 2007; Shih, 2010). Social media like blogs can be used as a constructivist learning tool which can encourage students to participate in the making of meaning and knowledge through content creation activities, critical feedback on others' content, and critical reflection on their learning (Lee, 2011).

While some educators are embracing these opportunities for using technology to enhance their students' learning, questions remain about the ability of students to adequately use technology in their studies. On the one hand, researchers like Prensky (2001a/b), Brown (2002) and Oblinger and Oblinger (2005) have characterised this generation as 'Digital Natives' or 'the Net Generation' who are team oriented, comfortable with technology use and prefer to learn actively, depend on communications technology and work in a multitasking way. Prensky (2001b) even claims that modern media like video games, TV and the Internet have changed the brain structure of the young so they think and learn in a significantly different way from older people. Sparrow (2011) claims to show that memory is being affected by the use of Google as the search facility replaces the need to remember facts and figures. Brown hints at a new form of literacy to accompany reading and numeracy: "The new literacy, beyond text and image, is one of information navigation" (Brown, 2005). There is some skepticism that such a generation exists (e.g. Kukulska-Hulme, Pettit, Bradley, Carcalho, Herrinton, Kennedy, Walker, 2011; Sánchez,

Salinas, Contreras, Meyer, 2011; Jones, Ramanau, Cross, Healing, 2010; Ransdell, Kent, Gaillart-Kenney & Long, 2011). As Bennett et al. comment:

> The picture beginning to emerge from research on young people's relationships with technology is much more complex than the digital native characterisation suggests. While technology is embedded in their lives, young people's use and skills are not uniform. There is no evidence of widespread and universal disaffection, or of a distinctly different learning style the like of which has never been seen before (Bennett et al, 2008:783).

Although there is a dearth of research generally about the impact of moving classes online (Searson et al., 2011:363), there are large scale projects such as the annual Educase Center for Applied Research (ECAR) study that try to capture the current trends and attitudes about technology of student cohorts as they enter higher education (Smith & Caruso, 2010). The ECAR survey has been conducted annually since 2004 and covers a wide range of student demographics with a very large sample (2010 had 36,950 respondents). The questions cover a wide range of technology related issues such as type and use of software and hardware, usage and perceptions of university online services, and how students use and integrate technology with their learning. The data shows the changes in young people's attitudes and use of technology within a learning context which can help educators plan their classes. This study investigates the situation in Japan in order to provide a glimpse at what students are using the Internet for and how they are using it.

2. The Japanese Context

As more teachers in Japan start to introduce more technology into their courses, educators need a clearer idea of what kind of technological environment students are familiar with and what their abilities to successfully engage with technology to fulfill class activities are. As of 2008 there were five dedicated online or distance degree granting institutions in Japan, including the Cyber University and the Open University Japan, and 41 offering a form of distance education (Kubota, Terashima, Nakahashi, Morioka, 2008). There was also a large population of students taking high school classes online (Kobayashi & Shibui, 2008). Another aspect is constituted by Self-Access Learning Centers (SALC), which are slowly emerging in Japanese universities and are provided to encourage independent learning, often using technology. Furthermore, popular Learning Management Systems (LMS) like Moodle require students to be able to use a Website to complete lesson tasks, and as universities start to integrate the Web into their administration,

students have to become familiar with corporate Web environments to check lessons, schedules and register for classes. This shows that Web-based activities are slowly becoming a part of education in Japan at different levels, however, the question arises what students are able to do using this technology.

Two studies into Japanese learners' use of technology shed some light on the situation. The OECD (2011) study covered 16 countries and assessed students' abilities in online and offline reading. Online tasks ranged from straightforward reading and answering questions to more difficult operations like using links to find more information about a subject, evaluating the content and making inferences about the information through use of clues like the type of domain name, the type of organisation responsible for the material, narrative style, and the audience (OECD, 54-57). The majority of Japanese students were graded at level three:

> Students performing at this level can cope with digital reading tasks of moderate complexity. They respond to digital texts in both authored and message-based environments. When given explicit guidance, they navigate across several pages to locate relevant material, and compare and contrast information from a number of Web-based texts when the criteria for comparison or contrast are clearly stated. They evaluate information in terms of its usefulness for a specified purpose or in terms of personal preference (OECD, 2011:50).

However, a significant minority of 30% of Japanese students were at level four which means they can do more advanced tasks such as synthesising, evaluating, comparing, contrasting, navigating and forming opinions.

The OECD report also contains findings of the use of technology (2011: 21). Japan ranks almost last in students' PC computer use at home (75.9%) and school (59.3%). Interestingly, Korea which is the number one country overall with a majority of students in level four, also has a lower than average PC computer use at home and school. However, Chile, which has similar percentages of computer use to Japan, came last in the rankings of the reading ability test. There is an apparent contradiction between student PC use and ability as Japanese students do not use PC technology as much as those in other countries but still manage to do average or above in the same test. This raises the question what technology they are using to gain digital skills if not using a PC.

The second study, a recent survey into Japanese students' experience of ICT (Lockley, 2011), shows that prior to university the majority of students have some experience of using technology at school and home, with cell phones, TV, computers and music players being

frequently used (Lockley, 2011:98). He also found that a minority of students reported having no exposure to technology at school (14% at junior high, 11% in high school), but it is not clearly reported if this group has any experience of technology outside of school. This seems to echo the findings of the OECD report that not all students in Japan have experience of computers.

What is not clear from these reports is how students perceive themselves as users of technology, the types of use of that technology and their perceptions of school or university websites used for administration or digital learning materials. The answers to these questions can help teachers prepare lessons and be aware of possible weaknesses in students' abilities and offer them support where necessary.

3. The study

3.1. Design and instrumentation

To gain a clearer picture of what type of technology, how frequently it is used, and perceived ability when using it, a survey was conducted at two private universities and one private middle and high school in Osaka. The subjects' ages ranged from 13 to 21 and included a variety of disciplines at the university level, and different ability levels across the whole sample. All proper ethical safeguards were taken and permissions obtained. The survey was paper based and written in Japanese by a native Japanese speaker to facilitate understanding and response rates. There were 390 responses and data was manually input into SPSS v19 for analysis.

Table One shows there were a roughly equal number of male and female respondents although numbers were unevenly distributed among the age ranges.

Table 1. Respondents' Age and Gender									
Age / Gender	13	14	15	16	17	18	19	20	21	**TOTAL**
Male	14	18	50	5	20	19	31	27	9	**193**
Female	32	42	43	7	15	15	20	18	5	**197**
Total	46	60	93	12	35	34	51	45	14	**390**

The survey comprised 21 questions that were split into three sections:

1. Technology ownership, frequency of use and perceptions of ability.
2. Frequency and type of use of the Internet and Web.
3. Use and perceptions of school or university website.

The survey used two different response types: a variable point scale for nominal questions, and ordinal responses for data into length of use. Responses were recorded via a check box on a nominal scale or numerical for the ordinal scales. Several survey questions were based on the ECAR (2010) study, and additional questions were generated to investigate the types of Internet use and perceptions of ability.

3.2. Findings

This section aimed to find out what technology students own or use for access to the Internet, how often they access, and how they felt about their abilities in using technology and Websites.

3.2.1. Technology use by students

Ownership of technology

Overall, respondents were overwhelmingly mobile, with 86.9% owning cell phones, 51.2% owning laptops and 26.7% owning desktop computers. Tablet computers like the iPad have yet to make an impact on this demographic with only 4.3% claiming ownership. Breakdown by age (Figure 1) shows that there are only small differences in ownership across the group, and that in general ownership follows a similar pattern by type of technology.
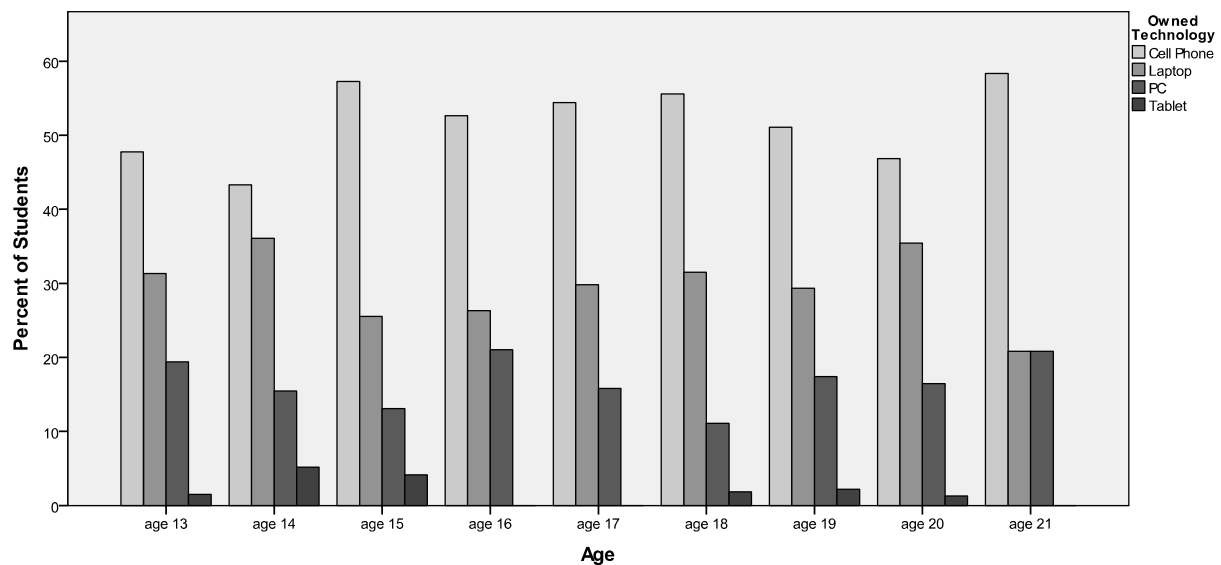
Figure 1. Ownership of technology by age.

Access to the Internet by type of technology

Cell phones were used by 76.8% of students to access the Internet, followed by laptops (64.1%) and desktop PC (48.2). Overall, the primary access device was laptop (37.9%), then cell phone (36%) and PC (25.6%). Secondary access devices were cell phones (50%), laptops (28.8%) and PC (20.6%).When broken down by age, school students (13~17 year olds) first used a laptop (42%), then PC (30.2%) then phone (26.5%). University students (18~21) used phones first (51.8%), then laptops (29.8%) then PC (17%). This roughly follows the results of the OECD (2011) study about access to PC technology, but gives more detailed results by technology type.

Perceived ability for Web and technology use

This question gauged students' perceived ability for using the Web and technology but because no test was given the responses are subjective. Students could rate themselves on a four-point scale from expert to novice. Table 2 shows that around 20% consider themselves skilful, with the largest group being competent. Response by gender showed that only in the expert group were there more males (Web 70.6%, technical 73.1%) than females. The other levels of ability had an almost even amount of males and females. Overall these results indicate that most students perceive themselves able to use the Web and technology.

Table 2. Perceived Abilities of Respondents (%)			
Web Expert	4.5	Technology Expert	6.9
Web Very Competent	15.6	Technology Very Competent	16.9
Web Competent	52	Technology Competent	55.5
Web Novice	28.2	Technology Novice	22

Perceived ability and frequency of net use

Most respondents used the Internet at least once a day (Figure 2). Self-assessed highly competent subjects access the Internet multiple times a day, but what cannot be seen clearly is if there is a relationship between frequency and perceived ability.
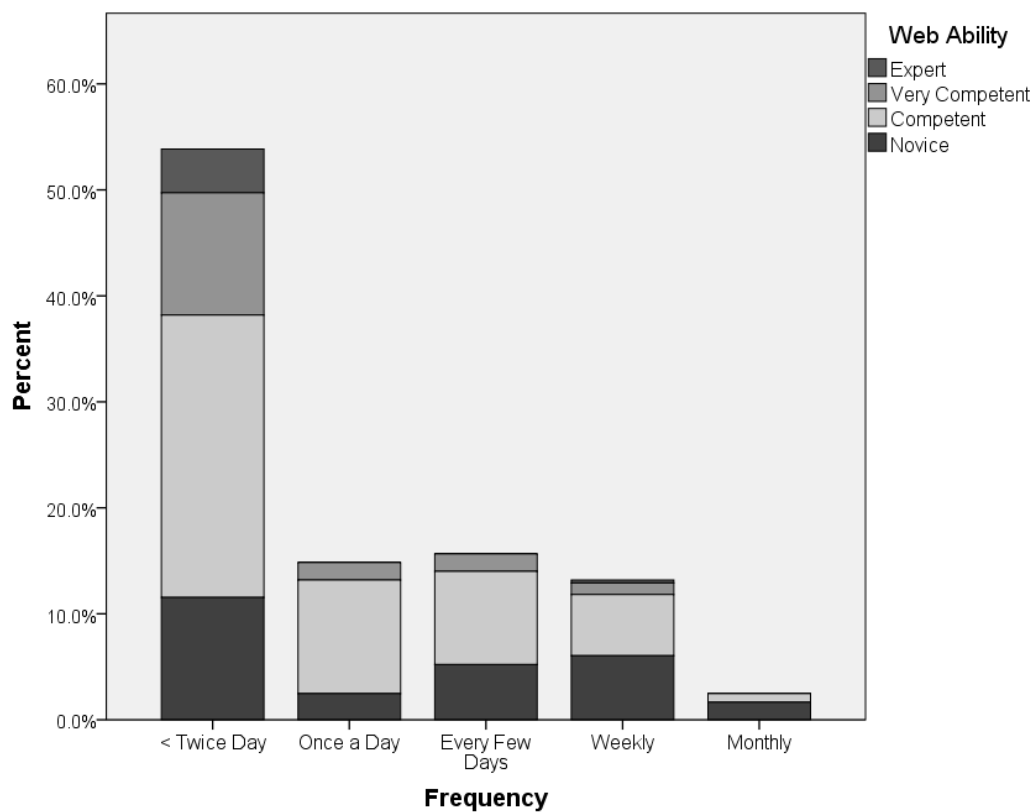
Figure 2. Frequency of access and perceived Web use ability (Total % of frequency).

Length and type of use of the Internet

This section surveyed the ways students use the Internet and how often they used it for. It reveals brand use, function use, and time used (Figure 3). Television was included as a comparison

between "old media" and the Internet. The average use of the Internet of all students was 146 minutes a day, double the 70 minutes spent watching TV. However, it is not clear if students considered a website the same as sites like YouTube so if this factor is removed and only specific examples are counted the total for Web use is 95 minutes.
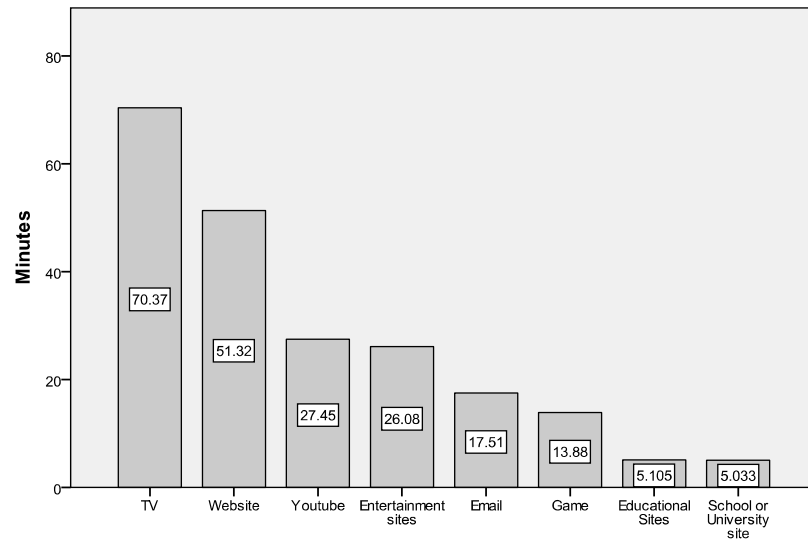
Figure 3. Average number of minutes use per day per student.

Brand use

Google (64.9%) and YouTube (78.2%) were popular destinations, but Yahoo!Japan (87.3%) was the most popular, and Japanese social networking site Mixi (26.2%) is used more than Facebook (7.5%). Online shopping site Rakuten was used by 13%, and 27% used their school or university site although these figures do not break down to LMS, intranet or corporate website use.

Website use by function

This section asked about how students used the Web. More specific knowledge can help teachers determine what kinds of experiences students have and where they may need extra support. Grouping activities into three types of use (Table 3) shows that students use the Internet mainly for entertainment, while a minority use it for lifestyle or some form of education or learning.

Results were fairly consistent across ages (Figure 4), with only university students doing noticeably more homework using the Internet.

| Table 4 Internet Use by Total Percent of Responses						
Entertainment / Information			Lifestyle		Education / Learning	
Youtube	77.30%		Email	24.80%	Homework	30.9%
Download Music	54.40%		Shopping	23.50%	Write a Blog	22.70%
			Chat / IM	14.10%		
Read a Blog	40.00%		Banking	0.80%	Research Products	21.30%
News	37.30%					
Games	28.80%				Service or Product Reviews	14.40%
Weather	28.30%					
Download Software	18.90%				Online Education	2.70%
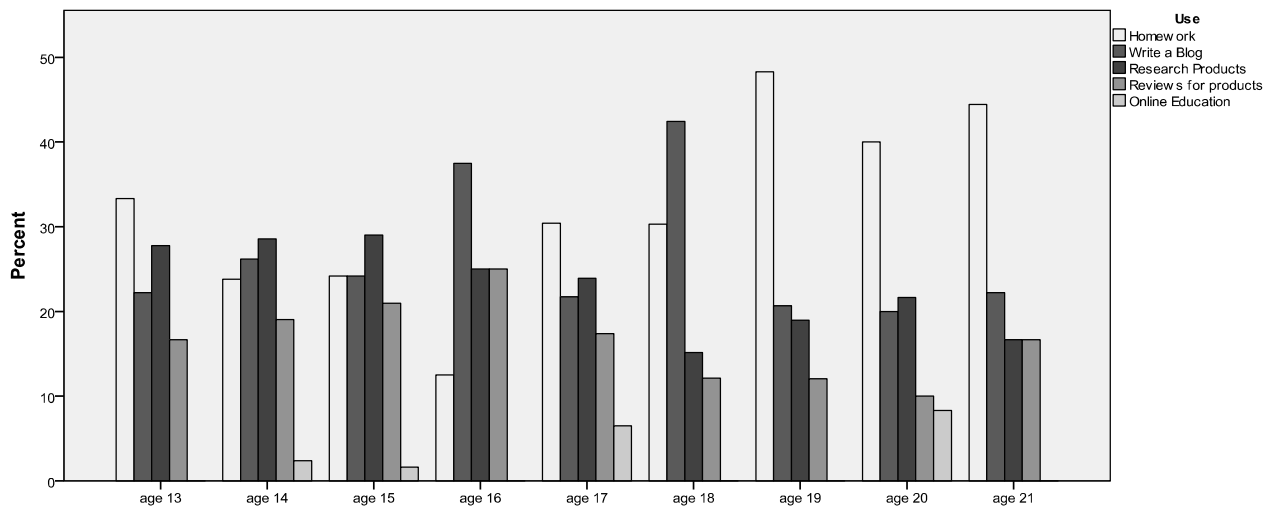
Figure 4. Use of Internet for learning, % within age.

Would you like to have an online class?

A large minority of students (38.2%) responded that they would like to have an online course, although an explanation of what this entails was not provided and so the construct validity is in question. However, it shows that there is a fair amount of interest for engaging in some form of technology enhanced learning.

3.2.2. Use and perceptions of school or university corporate website

As more universities in Japan are administrating and, somewhat more slowly, teaching utilising the Web, this section reports on the perceptions and use of corporate websites. This question did not differentiate between types of corporate website use, for example LMS or intranet and so is fairly limited in its use as a data set. Further research could usefully investigate use type and perceptions of these different types of use.

Frequency of access to institution sites

Most university students (73%) access the corporate website at least once a week: 40% visit once a week, 17% use it daily and 16% use it every few days.

School or university access by technology type

Access to sites is mainly through full sized screen devices (laptop: 44.3% and PC: 43.1%), while mobile is hardly used (11.7%).

Corporate site's usefulness

Overall, respondents were not impressed with their institution's website with 29.4% finding it quite useful or very useful. The majority of 54.4% found it neither good nor bad, and 16.3% thought the site not useful.

Institutional support for website and technology

Here it seems that institutions are not doing a great job with 47% of students feeling that the institution provided adequate technical support for their use of the corporate Website, and 57% felt computer use was supported.

How could corporate websites be improved?

The biggest issue with the institutional websites was usability, with 41.7% saying it could be improved. Information about the university, courses, and events (27.2%) was the next biggest improvement area. Site design and contents were not really issues at around 15% of students wanting improvement for each aspect.

3.3. Discussion

A typical student profile discovered by this survey seems to be one who is using the Internet perhaps more than TV for recreation and entertainment, likely owns a mobile phone that they use to access the Internet, and also a secondary device, mostly likely a laptop. Although they probably feel competent using the Web and technology it is unlikely that they would use the Internet for creative activities like writing a blog. Few younger students would use the Internet for homework, although older students may use it for this purpose. They might feel supported in the use of computers or corporate website by their institutions and use the site on a weekly basis most likely accessing it on a PC or laptop.

3.3.1. Frequency of use and perceptions of ability

Ability to use websites and technology is an important factor when designing lessons for delivery via the Web and when considering what kinds of support should be given to students to enable them to perform tasks. Is competency a result of frequency of use, which presumably arises from practice effects and familiarity? Certainly most of the users who consider themselves proficient accessed the Web multiple times daily, but so did 30% of novices. It could be that students who are less able still find the Net useful and so access it regularly, but perhaps do not use it advantageously which means instruction would help them benefit more from their use. It may be that there is another factor determining competency apart from frequency of use. Hargittai's research (2010) suggests that it is the diversity of sites used that correlates positively to Web use ability.

Two main points can be taken from this survey's results. Firstly, most students feel confident in their ability to use the Web and so will probably not require much extra support for tasks like Web browsing or accessing video. Secondly, they frequently use the Internet and so by publishing online teachers can be reasonably sure that students will check a site if directed. However, this should be qualified by a consideration of the type of access that students generally use. Mobile phone-capable sites will be more accessible to students than desktop-only versions because a large majority of students own cell phones that they can use for the Internet, but this brings into question the usability of mobile sites for tasks like blogging or writing on forums.

Perhaps a reasonable recommendation here is that materials for consumption (reading, video, audio) are suitable for cell phone access, but Web 2.0 type interactions like blogging are more suitable for desktop PCs and so teachers may want to consider how they structure a course if content creation is a required element. For example, perhaps it cannot be expected for students to update a blog very frequently via a mobile phone, but reading or podcast activities can be done more frequently. More research needs to be done on how well students' mobile phones can access media-rich content as older "feature phones" may not be able to play video, and the cost associated with streaming media may well be a problem for students with expensive data plans.

3.3.2. Type of use of the Internet

The distinction between passive consumption and active production was fairly clear in the results of the data. While passive activities like viewing video on YouTube (77.3%), reading a blog (40%) or news (37.3%) were popular, only 22.7% of students created content by blogging. Furthermore, actively seeking out information about products (21.3%) or reviews of products or services (14.4%) were activities marked by a smaller percentage of respondants. In terms of ratio of content producers to consumers, students in Japan roughly follow the averages found elsewhere (Franklin & Harmelen, 2007). Similarly, Lucklin, Clark, Graber, Logan, Mee, & Oliver (2009) in their study of British 11- to 16-year-olds' use of the Internet concluded that students need more emphasis on learning how to critically search for and analyse information on the Web, rather than passive engagement with content.

The picture produced from these data seems to indicate that there is a minority of students who engage in more active tasks, and the numbers who do so are similar to students in other countries. Therefore, many students may need support, either technical or pedagogical, in utilizing the Web for creation or research activities. Teachers cannot assume that just because a student is young they can automatically use the Internet well, and might consider including some form of ability test and / or skills training before starting a course involving content production or search activities.

What is more, with about half of the students claiming that they do not feel adequately supported by their institution for using PCs, teachers may need to interact with their institution's computer facilities department to either increase awareness of support programs that may be

available, or try to encourage more specific programs aimed at supporting an LMS, or higher-level uses of the Internet like search strategies, evaluating websites or navigation.

3.3.3. Use and perceptions of school or university website

While many students regularly access their organization's website, many were critical of the usability and usefulness of it, and do not access it on the mobile device many of them have. Although this is in no way a comprehensive sample, schools and universities might consider researching the issues of accessibility and usability via cell phones if they wish to create an environment that suits the way many students can access the Internet. Mobile devices are quickly becoming a major way of Internet access so creating a ubiquitious learning environment that facilitates 'anytime-anywhere learning' might be considered a priority at an institutional level, and teachers may wish to consider how they can incorporate mobiles into their LMS.

3.4. Weaknesses in the study and directions for future research

The study was conducted at two private universities and a high school in one region in Japan and so it cannot claim to be representative of the region or country. Students and parents may have a higher than average disposable income, which may influence the level of technology ownership and opportunities to access the Internet. The high school has a strict 'no cell phone' policy during school hours, which means that students are discouraged from bringing phones to school and this could have skewed the responses compared to schools that are more lax about cell phones.

Future surveys should consider carefully construct validity. While the survey was written in Japanese by a native speaker, some terminology or concepts may not have been fully understood, especially by novice users or younger students, so greater validity could be achieved through pilot studies which use qualitative responses to determine the correct language for the concept, or provide extra explanations in the survey. Finally, the ability levels were subjective so better measurements of perceived and actual ability can give a clearer idea of the difference between what the subjects think they can do, and can actually do. This will provide useful data for teachers to inform their decisions on what areas are generally weak and strong for students so that appropriate skills can be taught.

Research should include qualitative responses to investigate more deeply some of the issues such as perceived ability, students' use of the Internet for academic purposes, and levels of support from teachers and institutions regarding academic use of technology in classes.

One seeming contradiction found in the OECD research is the difference between PC access and ability between Japan and other countries. The results from this study indicate that mobile is a pervasive method of Internet access and so future research could investigate whether digital skills can be attained equally well on a mobile device as on a PC or laptop. This may also require teachers to rethink the way they construct courses and how they engage students with the material if delivered as mobile content as this format has advantages and disadvantages as a learning platform (Crescente & Lee, 2011).

4. Conclusion

Within the Japanese context it seems that, at least in the sample in this study, many young people frequently use the Web, feel able to do so, and have the technology to access it. Just as in other countries students on the Internet in Japan differ by ability and purpose. As the OECD (2011) report shows, the majority of Japanese students can adequately perform some tasks but only 30% can use the Internet at a more sophisticated level. Results from this study indicate that a high percentage of online activity is for consumption, while only a minority use it for learning or content creation. Therefore, common consumption activities and low-level navigation skills may not be problematic, but many students may need support to develop higher levels of digital literacy so that they can more effectively find, evaluate, and understand information, as well as create original content. Educators might also consider the usability of their LMSs, and perhaps give more support for mobile device formats to enhance participation and access.

References

Arbaugh, J. B., Godfrey, M. R., Johnson, M., Pollack, B. L., Niendorf, B., & Wresch, W. (2009). Research in online and blended learning in the business disciplines: Key findings and possible future directions. *The Internet and Higher Education*, 12(2), 71-87, http://www.sciencedirect.com/science/article/pii/S1096751609000268

Bennett, S., Maton, K. and Kervin, L. (2008). The 'digital natives' debate: A critical review of the evidence. *British Journal of Educational Technology*, 39, 775–786.

Brown, J.S. (2002). GROWING UP DIGITAL: How the Web changes work, education, and the ways people learn. *USDLA*, 16(2), http://www.usdla.org/html/journal/FEB02_Issue/article01.html

Blackstone, B., Spiri, J., Naganuma, N. (2007). Blogs in English language teaching and learning: Pedagogical uses and student responses. *Reflections on English Language Teaching*, 6(2), 1–20.

Corbett, S. (2010). Learning by playing: Video games in the classroom. *The New York Times*, September 15th, 2010, http://www.nytimes.com/2010/09/19/magazine/19video-t.html?ref=magazine

Crescente, M. L., & Lee, D. (2011). Critical issues of m-learning: design models, adoption processes, and future trends. *Journal of the Chinese Institute of Industrial Engineers*, 28(2), 111-123.

Franklin, T. and van Harmelen, M. (2007). *Web 2.0 for Learning and Teaching in Higher Education*. London: The Observatory on Borderless Higher Education.

Gailen, P., Bowcher, W. (2010). Using blogs in ESL/EFL teaching and teacher-training. *Asian EFL Journal,* 42, 4-23.

Hargittai, E. (2010). Digital Na(t)ives? Variation in Internet skills and uses among members of the ''Net Generation'', *Sociological Inquiry*, 80(1), 92–113.

Jones, C., Ramanau, R., Cross, S. & Healing, G. (2010). Net generation or Digital Natives: Is there a distinct new generation entering university? *Computers and Education*, 54(3), 722-732.

Kukulska-Hulme, A. (2010). Charting unknown territory: Models of participation in mobile language learning. *International Journal of Mobile Learning and Organisation*, 4(2), 116–129, http://oro.open.ac.uk/21341/2/paper.pdf.

Kukulska-Hulme, A., Pettit, J., Bradley, L., Carvalho, A., Herrington, A. Kennedy, D. and Walker, A. (2011). Mature students using mobile devices in life and learning. *International Journal of Mobile and Blended Learning*, 3(1), 18–52.

Khan Acadamy. (2011). Homepage, http://www.khanacademy.org/about

Kobayashi, H., Shibui, F. (2008). The Practice of study on heredity by use of teaching materials for Web based training in a correspondance high school. *Distance Learning and the Internet Conference*, Waseda University, Japan, http://www.waseda.jp/DLI2008/program/proceedings/pdf/session1-1.pdf

Kubota, K., Terashima, K., Nakahashi, U., Morioka, H. (2008). Analyzing learning environments of distance education in Japan. *Distance Learning and the Internet Conference*, Waseda University, Japan, http://www.waseda.jp/DLI2008/program/proceedings/pdf/session7-1.pdf

Lee, L. (2011). Blogging: Promoting Learner Autonomy and Intercultural Competence Through Study Abroad. *Language Learning & Technology*, 15(3), 87-109. http://llt.msu.edu/issues/october2011/lee.pdf

Lucklin, R., Clark, W., Graber, R., Logan, K., Mee, A., Oliver, M. (2009). Do Web 2.0 tools really open the door to learning? Practices, perceptions and profiles of 11–16-year-old students. *Learning, Media and Technology*, 34(2), 87–104.

Lockley, T. (2011). Japanese students' experience of ICT and other technology prior to university: A survey. *JALT CALL Journal*, 7(1), 93-102.

Marenzi, I., Kupetz, R., Nejdl, W., & Zerr, S. (2010). Supporting active learning in CLIL through collaborative search. In X. Luo, M. Spaniol, L. Wang, Q. Li, W. Nejdl, & W. Zhang (Eds.), *Advances in Web-Based Learning – ICWL 2010* (pp. 200-209). Heidelberg: Springer Berlin.

Maynard, J. (2007). A blog as a tool for reflection for English Language Learners. *Asian EFL Journal*, 24, http://www.asian-efl-journal.com/pta_Nov_07_jm.php.

Means, B. & Toyama, Y., Murphy, R., Bakia, M., Jones, K. (2009). Evaluation of evidence-based practices in online learning: A meta-analysis and review of online learning studies. Project report. *Centre for Learning Technology*, http://repository.alt.ac.uk/629/1/US_DepEdu_Final_report_2009.pdf.

Oblinger, D. G., & Oblinger, J. L. (2005). *Educating the Net Generation*. *Educause*, http://www.educause.edu/ir/library/pdf/pub7101.pdf

OECD. (2011). *PISA 2009 Results: Students on Line: Digital Technologies and Performance (Volume VI)*, http://dx.doi.org/10.1787/9789264112995-en

OERCommons. (2011). Homepage, http://www.oercommons.org/.

Prensky, M. (2001a). Digital natives, digital immigrants. *On the Horizon*, 9(5), http://pre2005.flexiblelearning.net.au/ projects/resources/ Digital_Natives_Digital_Immigrants.pdf

Prensky, M. (2001b). Digital natives, digital immigrants, Part II: Do they really think differently? *On the Horizon*, 9(6), http://www.acpinternational-dc.org/articles/digitalnatives2.pdf

Ransdell, S., Kent, B., Gaillard-Kenney, S., & Long, J. (2010). Digital immigrants fare better than digital natives due to social reliance. *British Journal of Educational Technology*, 42(6), 931-938.

Sánchez, J., Salinas, A., Contreras, D. and Meyer, E. (2011). Does the new digital generation of learners exist? A qualitative study. *British Journal of Educational Technology*, 42, 543–556.

Schedlitzki, D. Young, P., Moule, P. (2011). Student experiences and views of two different blended learning models within a part-time post-graduate programme. *The International Journal of Management Education*, 9(3), 37-48.

Searson, M., Monty Jones, W. and Wold, K. (2011), Reimagining schools: The potential of virtual education. *British Journal of Educational Technology*, 42(3), 363–371.

Shih, R. (2010). Blended learning using video-based blogs: Public speaking for English as a second language students. *Australasian Journal of Educational Technology*, 26(6), 883-897.

Smith, S., Caruso, J. (2010). *ECAR Study of Undergraduate Students and Information Technology*. http://www.educause.edu/Resources/ECARStudyofUndergraduateStuden/217333

Sparrow, B., Liu, J., Wegner, D. (2011). Google effects on memory: Cognitive consequences of having information at our fingertips. *Science,* 15 July 2011, 333(6040), 277.

Wang, H. (2009). Weblog-mediated peer editing and some pedagogical recommendations: A case study. *JALT CALL Journal*, 5(2), 29-44.