

[Refereed Article]

Towards Understanding the Digital Literacy Profile and Needs of Japanese English Language Learners for Engaging in Intercultural Exchange

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Abstract

In the 21st century, information technology (IT) has come to permeate almost every aspect of modern life. The COVID-19 pandemic has both emphasised and accelerated the need for citizens to possess the digital skills needed to participate fully in modern society. This paper is an initial attempt to understand what is needed in terms of digital literacy by Japanese learners of English. During the pandemic, many classes were conducted entirely online, with little or no face-to-face interaction between students and teachers. Japanese university students were asked to create a short video about an aspect of sustainability from the Japanese point of view, which was then exchanged with students in another country who had made videos from their point of view. Pre- and post-project questionnaires indicate that students improved across a range of digital skills. Possibilities for future research are also suggested.

Introduction

In the 21st century, information technology (IT) has come to permeate almost every aspect of modern life. Employers now expect prospective employees to possess the skills to utilise IT as a matter of course, and the number of jobs requiring IT skills is increasing in most advanced economies. Indeed, in the USA growth in jobs in IT outpaces job growth in the rest of the economy (Ezell, 2021). The skill sets required are known by various terms, such as digital skills, 21st century skills and perhaps most commonly, digital literacy. The COVID-19 pandemic has both emphasised and accelerated the need for citizens to possess digital skills, as many facets of work and schooling have moved online, highlighting a shift towards a “post-mobile” paradigm in higher education (White & Lee, 2020). By “mobile” White and Lee are reflecting on the physical mobility of students travelling to their universities or travelling abroad for educational and personal experiences. They posit that we have now entered an era where traditional physical mobility is no longer essential in the pursuit of educational and career opportunities. UNESCO data indicates that 158 countries have seen partial or full school closures for 20 weeks or more throughout the pandemic to date, and 21 countries have endured closures for more than 75 weeks (HDX, 2021). Differing levels of capacity, particularly in terms of infrastructure, connectivity and hardware, mean that some countries have

suffered more than others, but it is clear that IT is now an indelible part of education, of the global economy and of society as a whole. The importance of helping learners at all stages of education develop digital literacy skills is now clearer than ever before.

Prensky coined, or perhaps popularised, the term “digital native” in 2001 to describe the first cohort of young people in history to have grown up with digital technology as part of their everyday experience (Prensky, 2001). He considered that they “*are no longer the people our educational system was designed to teach*” (bolding and italics in original) and suggested that profound changes in teaching styles were required in order to provide education that matched the learning styles of “digital natives”. Most teachers or parents will have had the experience of watching young people simply “picking up” the skills to play online games or use social media to post messages, photos, videos and other digital media. It appears effortless, but what do these young people actually know about the way the digital technology works? Beyond the everyday activities they engage in, what can they do with technology? Can they adapt their skills to create something new or achieve different goals?

In short, just as being able to drive a car does not qualify one as a car designer or mechanic, being digitally literate surely entails something more than merely being able to use certain technologically enhanced devices and applications. Certainly, that must be considered an important part of digital literacy, but it is not the whole story. IT is a rapidly changing and evolving field, and the concept of digital literacy implies the ability to move with the changes, to navigate one’s chosen field effectively, to be able to create, collaborate and understand the ethical implications of both the technology itself and the artefacts that emerge from it.

So, how, in an ever-changing landscape, is digital literacy to be defined? What does a digitally literate person need to know? And does the required knowledge vary according to field of study or career? What should be the minimum degree of digital literacy to be acquired at various levels of education? These are difficult questions. For example, the digital needs and skills required by law students will probably be quite different to those of medical or biology students, and it will likely be different again for language learners.

Yet, while being digitally literate is now considered essential, it should not be considered as an end goal by educators. As Chun et al. note, “the use of technology should not be seen as a panacea, or a goal in and of itself, but rather as one means to support specific learning goals” (Chun, Kern & Smith, 2016: 77). Among those goals for the foreign language learner is the larger concept of communicative competence and by extension intercultural communicative competence. As Byram (2015) puts it, “the special purpose of language teaching is to enable learners to leave their own way of living and thinking and understand the ways of other people who speak other languages and who live and think in other ways.”

As face-to-face interactions in foreign countries and across borders have become impossible for many due to the COVID-19 pandemic, IT offers the potential for educators and learners to find ways of making those interactions occur virtually, and of engaging in the kinds of activities that make language learning more than a classroom and textbook-based endeavour.

This paper aims to begin the task of understanding what is needed in terms of digital literacy by Japanese learners of English. It is based on a project undertaken in 2020, in which Japanese university students were required to create a short video about an aspect of sustainability from the

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Japanese point of view. Classes were conducted online, meaning students were required to use the resources they had at hand to complete the video. No stipulations were made regarding the use of particular hardware devices or software applications. The videos were exchanged with students in another country, who had also made videos on the same topic from the standpoint of their own country. Henry (2021) argues that digital video production represents an opportunity to motivate students to engage in a meaningful and authentic form of self-expression. Surveys were administered prior to students making their videos and again after completing them. It is hoped that the results can begin to form a “digital profile” of the learners. The surveys included questions on many aspects pertinent to digital literacy and asked the students themselves what they believed they were capable of prior to beginning this project, and if they had improved their abilities as a consequence of participating in the project.

Defining Digital Literacy

Traditionally, literacy referred to the ability to read and write, and the more complex texts a person was capable of dealing with, the more highly literate they were considered to be. The digital revolution, heralded by the development of the internet has not made the traditional concept of literacy an obsolete concept, but it has led to the addition of new forms and modes of communication becoming widespread. From an educational standpoint, it is now a given that pupils and students need to be proficient with, or literate in, more than just the written word.

During this period of technological innovation, there have been numerous attempts to develop new notions of literacy which take account of this new reality. Among these were such ideas as visual literacy, television literacy and so on (Buckingham, 2015). The term digital literacy appears to have been coined by Paul Gilster in his 1997 book of the same name (Gilster, 1997). Since then, as technology evolves, changes or sees innovations, the way it is perceived and interpreted and the definitions for describing what it means to be literate in this area have also evolved.

For example, in 2009 Cornell University in the USA defined digital literacy in a single sentence as “the ability to find, evaluate, utilize, share, and create content using information technologies and the Internet” (Steele, 2009). Shortly after, UNESCO proposed a slightly more complex definition: “a set of basic skills required for working with digital media, information processing and retrieval. It also enables one’s participation in social networks for the creation and sharing of knowledge, and the ability supports a wide range of professional computing skills” (UNESCO, 2011). In 2012, researchers Spires and Bartlett (2012) attempted to provide “a simplified way to think about digital literacy by ordering the cognitive and social processes into three categories: (a) locating and consuming digital content, (b) creating digital content, and (c) communicating digital content”. In reviewing the discourse around digital literacy and descriptions such as these, Meyers, Erickson and Small (2013) observed that “a unified definition of digital literacy, or literacies, is yet to emerge”.

By 2017, a study by the G20 Insights think tank had identified a matrix of characteristics (see Table 1) which apply to the overarching concept of digital literacy, and which they recommended be adopted by the G20 (Chetty, et.al., 2017).

In 2019, the EU-MADE4LL (European Multimodal and Digital Education for Language Learning)

project group published the Common Framework of Reference for Intercultural Digital Literacies (CFRiDiL) as “an adaptation and expansion of both the Common European Framework of Reference for Languages: Learning, Teaching, Assessment (CEFR) and the Digital Competence Framework for Citizens (DigComp 2.0)” (Sindoni, et. al., 2019: 11), with four dimensions, each including several macro-categories of general descriptors across three levels of mastery.

Table 1. Simplified representation of the Digital Literacy dimensions and perspectives (Chetty, et. al., 2017)

Dimension	Perspective		
	Cognitive	Technical	Ethical
Information (Digital Content)	Synthesis	Access, Usage	Appropriate Usage
Computer (Hardware and software)	Evaluate	Usage	Appropriate Usage
Media (Text, sound, image, video, social)	Critique, Create	Navigation	Assess truthfulness
Communication (non-linear interaction)	Critique, Create	Develop and use content	Appropriate Usage
Technology (Tools for life situations)	Invent, evaluate tools	Usage	Appropriate usage

As can be seen, there has been a gradual increase in detail and complexity in definitions and descriptions of digital literacy. While this is helpful in a prescriptive sense, overly complex definitions can create difficulties for teachers, many of whom feel unprepared in using ICT in teaching (OECD, 2018a).

A further complication is that each learner, or “digital native”, will have a different background profile in terms of their own personal use of technology and of their exposure to technology in their domestic situation. While dealing with the technological needs of each person on an individual basis would be ideal, it would also be impractical in most educational contexts. General national profiles probably provide teachers with a reasonable starting point. What we know about Japan is that, according to OECD statistics, digital literacy rates lag behind several other countries at all age levels (OECD, 2018b). Schools typically have fewer computers per student (OECD, 2012), and among countries surveyed Japanese pupils had the lowest index of ICT use out of school for doing schoolwork, and the second lowest index of ICT use in school (OECD, 2018b).

Japan has a further digital profile which may be of relevance in this situation. In 2009, Japan had the highest rate of access to computers at home among G7 nations: 87.2%. By 2019, it had the lowest rate: 69.1%. This is borne out by the rates of broadband access to the internet. Japan is No.1 in mobile broadband subscriptions, but only 6th in the G7 for fixed broadband subscriptions (OECD Data, 2021). This indicates that while the number of children with access to the internet via mobile devices may be high, many children may not have access to the internet via a computer at home.

As Meyers, Erickson and Small (2013) note, “skills cannot be understood out of context; knowledge is situated and embodied in very specific ways and is often applied to directed ends.” In order to develop an understanding of what digital literacy skills are required by Japanese students, it is important to understand what their digital situation actually is.

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To go some way towards understanding that, students were asked to create short videos, something which just a few years ago required specialist skills and equipment. That is no longer the case. Even a basic smartphone now comes equipped with the hardware and software to record audio and video of a very high quality, and additionally can host the applications needed to edit and distribute digital video artefacts. In fact, video is now one of the most trafficked forms of communication on the internet (Cisco, 2021), making it an appropriate format for investigation of digital literacy.

Overview of Project

In this collaboration, students were asked to focus on the United Nations (UN) Sustainable Development Goals (SDG) (UN, 2015). In pairs, students selected one of the seventeen goals and then collaboratively produced a single, short video about that goal in connection to their own country or region. The video was then made available to students in another country via an online “noticeboard” type of application, called Padlet.

Students were able to give feedback in two ways:

- 1) directly to the Padlet site by adding a comment below the thumbnail of the video, and;
- 2) by completing a rubric designed specifically for this project which focussed on three broad areas: content, speaking skills and video production skills.

This feedback was then used by students in order to revise their video, which was then submitted to the teacher for final grading.

Before beginning the production of their videos, students were given instruction on the basics of copyright. It was hoped this would raise awareness about the topic of the ownership of digital artefacts, something which many students seem not to have a clear understanding of. Students were also given instruction in the use of several applications for recording their voices for narration purposes, for editing sound and for editing videos, though they were free to use different applications if they chose to. Due to the fact that the classes which this study focusses on were conducted entirely online, there were no stipulations made regarding devices or applications to be used. In fact, students were encouraged to make use of whichever devices they had in their possession, with efforts made by the teacher to assist them in maximising the use of those devices without incurring any financial obligations.

Hypothesis

The rationale for carrying out this project was to begin to determine what digital video making skills Japanese learners of English currently possess. It was hypothesised that what skills they had could be enhanced by having students create short videos on a particular topic – in this case on sustainable development.

To test this hypothesis, pre- and post-project questionnaires, which aimed to evaluate any changes in students' digital literacy were administered via Survey Monkey, an online proprietary survey tool. A 5-point Likert scale was used to gauge the degree to which respondents agreed (strongly agree;

agree; neither agree nor disagree; disagree; strongly disagree) with a series of eight statements regarding their ability to perform various tasks. In the pre-project questionnaire, these took the form of “can-do statements”:

- I am confident that I can produce a good video about sustainable development in my country.
- I know which applications to use to make a good video about sustainable development in my country.
- I know how to make a good recording of my voice.
- I know how to learn if a video or image I find online has copyright protection.
- I know how to edit a video.
- I can add transitions between photos or videos.
- I can arrange photos and video to tell a story.
- I can add titles and subtitles to video.

In the post-project questionnaire students were asked if they felt their ability to do those tasks had improved.

The project was undertaken in the latter half of the 2020 academic year. Pre-project questionnaires were undertaken at the beginning of October, 2020, and post-project questionnaire at the end of December, 2020.

As was noted in the Introduction, the subjects of this study were 2nd-year Japanese university students, aged 19 and 20. 31 students answered the pre-project questionnaire, and 24 responded to the post-project questionnaire.

For ease of comprehension, the results of the questionnaire are presented in percentage format.

Results from Questionnaires

In this section, student responses to the questionnaires will be analysed including visual representation with graphs. The black graphs show the results of responses to the pre-project questionnaire, and the grey graphs show the results of responses to the post-project questionnaire.

The first question in this section asked students what they thought about their ability to make a video on sustainable development (see Figure 1). As can be seen, prior to beginning the project only a quarter of the students felt that they would be able to produce a good video about sustainable development as it applies to their country. However, after completing their videos, 84% of students felt that they indeed had made a good video.

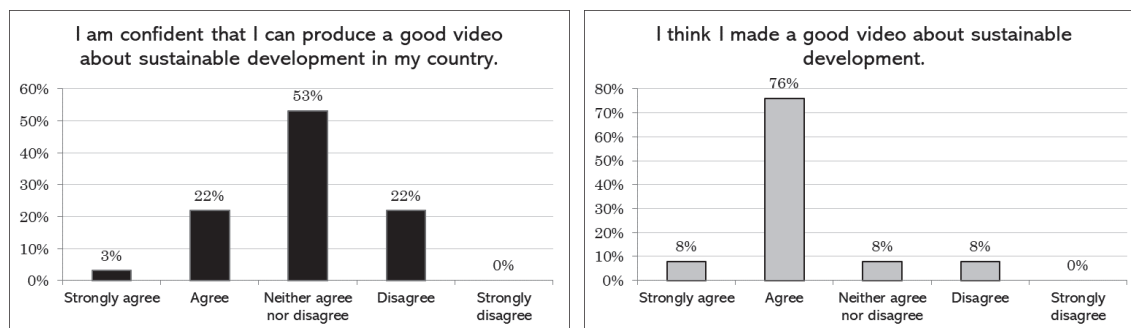


Figure 1. Impressions of the quality of the video

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This probably indicates a fear of the unknown for students. Few, if any, had made any kind of video before and probably felt that it must be a very difficult thing to do. After getting past the initial difficulties they faced, it seems most students were able to complete the task to their own satisfaction.

The next question asked students about which applications they should use, be they video editing apps, audio recording and editing apps or anything else, to make their videos (see Figure 2). Prior to starting on creating their video, around six out of ten students thought that they did not know which applications would be most appropriate. In fact, only 13% agreed that they did know which apps to use, and no students strongly agreed with that proposition.

However, after completing work on their videos 80% of students felt more positive about this, and only 4% of students disagreed that they had learnt something about this. This indicates that most students have developed their digital literacy skills in the domain of video production, and is a positive development given the importance of video for the dissemination of information in the present day (Cisco, 2021).

Following that, students were asked about making a recording of their voice (see Figure 3). Again, only a relatively small number of students felt that they knew how to make a good recording of their own voice at the beginning. This is interesting, because almost all smartphones come with an app for voice recording pre-installed, yet it would appear that many students had not tried using it, or at least not tried using its functionality to make a clear recording.

At the beginning, only a quarter of students thought they could make a good recording of their

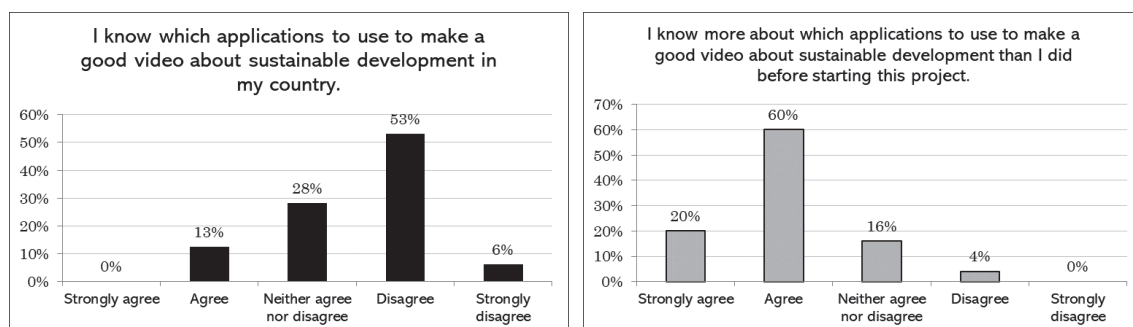


Figure 2. Use of applications to make a video

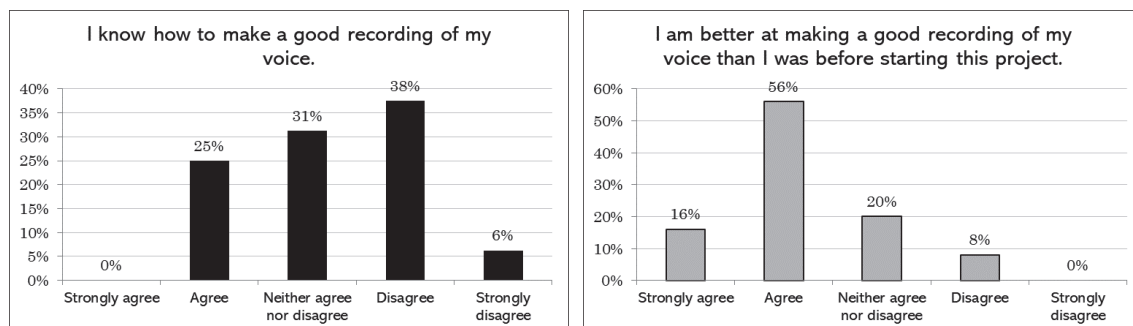


Figure 3. Impressions about recording vocal narrations for videos

own voice, but at the end almost three quarters felt that they had improved in this area.

The next question addressed the important question of copyright. As has been suggested above, many students appeared to be hazy about the issue of copyright. Some students in fact tried to use images or music in their video which obviously infringed copyright and required extra, individual instruction. As can be seen in Figure 4, initially 41% of students felt that they did not know how source images which they could use in their videos without breaching copyright.

By the end of the project, 88% of students felt that they understood the concept of copyright better. Copyright, of course, covers a broad range of concepts, not merely digital artefacts, but the ease with which images, videos, music and other digital works can be copied and re-purposed in the modern world means it is a concept which must be considered as an intrinsic part of digital literacy.

The next four questions refer to the actual creation and editing of digital artefacts, beginning with the concept of editing video (see Figures 5-8). Figure 5 shows that 74% of students did not think they were able to edit a video, and only 13% thought they could before engaging in creating a video in this project.

After completing their video, 92% of students believe they have improved in this domain, representing a huge positive change in perceived capabilities. As was noted above, video now comprises the majority of IP traffic, so it is clear that being able to participate as creators in this area gives students greater agency in the dissemination of information in the digital age. This indicates that taking the hands-on action of creating a video led to a change in impressions. As is often the case, allowing students to actively engage in creating an artefact appears to have been more effective

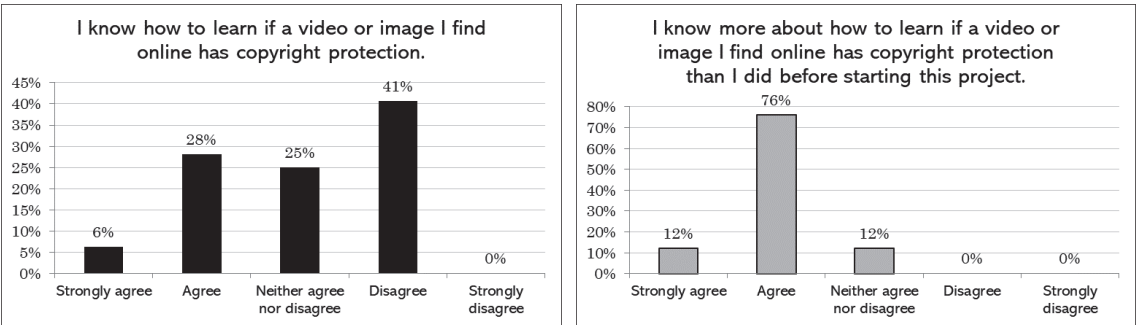


Figure 4. Understanding of copyright

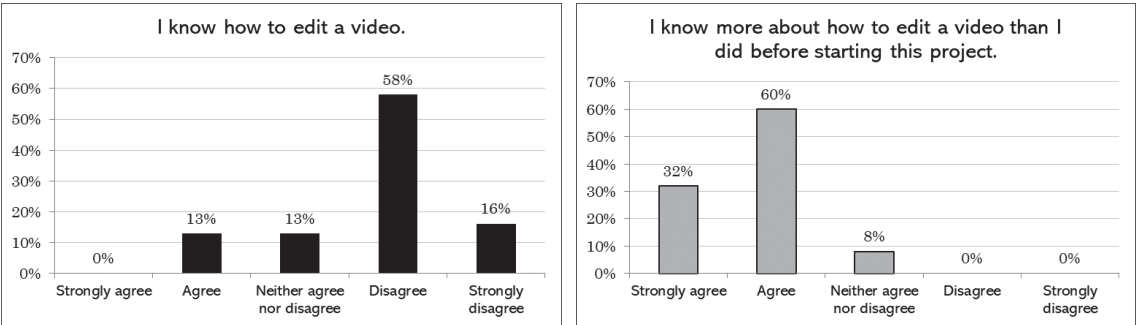


Figure 5. Impressions of ability to edit videos

than merely providing them with an explanation of how to do it.

Figure 6 shows students' impressions of their ability to create effective transitions between images and video segments within a larger video artefact. A transition is not a concept exclusive to videos or the moving image. Transitions can be an effective way of moving a storyline forward, of juxtaposing contrasting ideas and so on, and can be used verbally in oral presentations for making compelling arguments as well as in the written word. In short, transitions, if used effectively, can enhance the experience of the consumer of a product, or as in this case the viewer of a video. As might be expected, given the results of the question asking students about their ability to edit a video, a large proportion of students, exactly a half, did not think they would be able to add transitions to their video.

Yet, after completing the project, 92% of students felt that they had improved in this area, again indicating that the project has aided students in improving their digital literacy in the field of video production.

The third of the four questions about video creation asked students about their ability to arrange images in an order which would assist in conveying a message, in telling the story they wished to transmit to their viewers (see Figure 7). Interestingly, half of students agreed that this was something they could do, a much higher ratio than for any of the other questions. Further, 12% of students felt that they had not improved their ability to do this, the highest percentage of negative answers on the questionnaire. Perhaps this is because arranging images in an order conducive to storytelling might seem the least technical of the skills asked about. Nonetheless, 84% of students

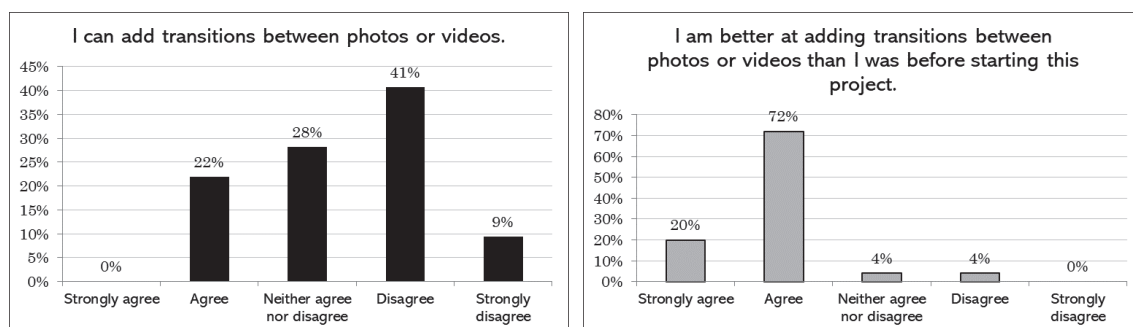


Figure 6. Impressions of ability to add transitions in video production

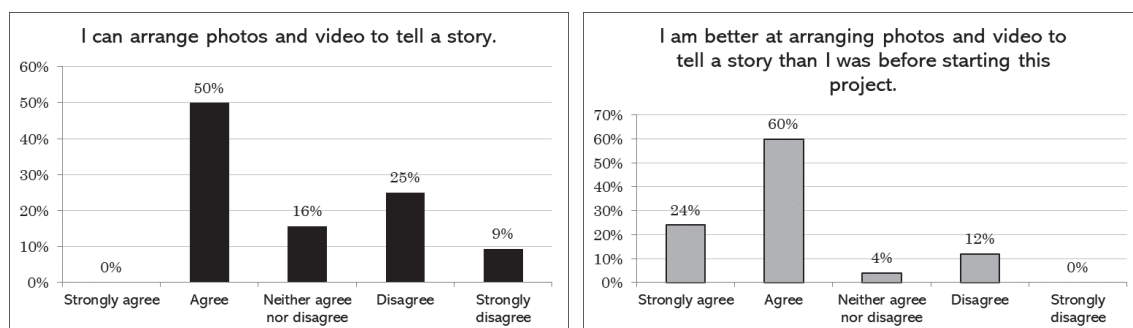


Figure 7. Impressions of ability to order images to tell a story

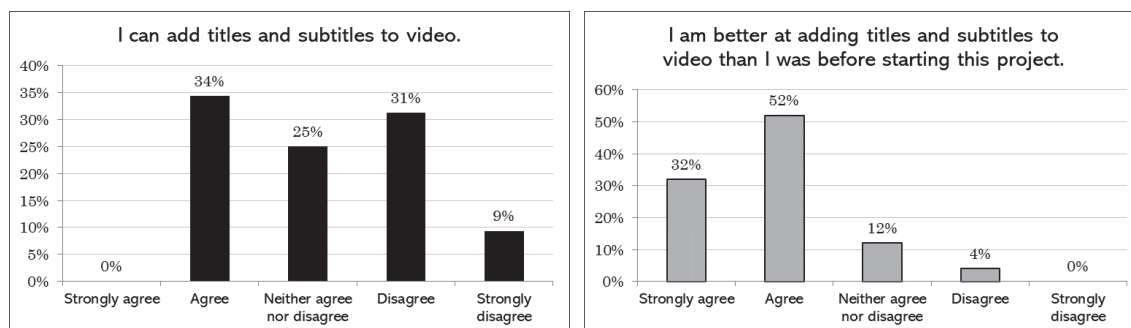


Figure 8. Impressions of ability to add subtitles to a video

believed that they had improved their ability to do so.

The final question asked about adding subtitles to a video (see Figure 8). Although this was not something that students were required to do in the context of the project, it was suggested as something students might like to consider, particularly when using words in Japanese, either as names or descriptions of specifically Japanese artefacts. Research suggests using subtitles can assist in learning a second or other language (Mitterer & McQueen, 2009; Peters, 2019). This is a theme which might be appropriate for further research in the context of language learning and digital literacy.

Prior to beginning the project, although only 13% (see Figure 5) thought they knew how to edit a video, 34% felt that they would be able to add subtitles. However, after completing the project, 84% of students said that they had improved in their ability to do this, suggesting that they may have underestimated the difficulty of the task.

Conclusion

This paper represents an initial effort to formulate a description of the digital literacy, and the digital literacy needs, of English language learners in Japan. However, the digital landscape is in near perpetual flux, meaning that digital literacy is a fluid concept and as such it requires regular reassessment and re-definition. As a new generation of telecommunications, 6G, is on the near horizon, new definitions of digital literacy will almost certainly be forthcoming. These will need to be taken into consideration in any new research.

While it is probable that in this new digital age there will be a basic level of digital literacy needed by all, it has also been noted that different groups of people most likely have different digital literacy needs. Just as before the digital revolution different people had different levels of, and needs for, literacy and numeracy, it can be expected that different cohorts of learners in the digital age will also have differing levels of digital literacy needs. More research needs to be done in order to determine just what those needs and levels are.

The project described here focussed on a specific format of digital communication –the short video, now a very common form of digital communication. What was seen is that the tasks undertaken in the project have led students to consider that their abilities in, or knowledge of, various domains

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improved because of participating in the project. This suggests, as the hypothesis at the heart of the project predicted, that students were able to add skills to their digital literacy toolkits.

It must be noted, however, that the questions asked of students in the pre- and post-project questionnaires ask only if there has been an improvement or a gain in knowledge regarding a certain aspect of digital skill. The extent of the improvement has not been measured, and this also could be a focus of attention in future investigations.

As was also noted, given the broadband subscription rates in Japan, Japanese students may have more of a bias towards using smartphones rather than computers than students in other countries. The implications of this should be investigated in future research.

Another question that could be the focus of future research is to determine if the skills involved in the project described here are transferrable to different tasks, or are they only applicable to the narrow domain of producing short videos?

As a final word, it ought to be noted that in a world which may be witnessing a rise in nationalistic tendencies, intercultural, collaborative projects across borders such as the one undertaken here are worth pursuing.

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