Japanese Pre-Service Teachers’ Manga Digital Storytelling

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The Japanese can easily think of many popular manga characters, such as Doraemon, Hatsune Miku, and Detective Conan. They can see manga everywhere in Japan. Japanese take trains every day, which are an important means of transportation. Sometimes trains will be painted with manga characters (Figure 1). Children and adults read manga books on trains (Figure 2).

Figure 1: Train with a manga character
Figure 2: Children reading manga on a train

Manga is everywhere in Japan, so even when you are walking in a street, you will see some boards with colorful manga characters as advertisements. Some cities and baseball teams have their own manga images. These images not only appear on the packaging of goods in stores, but do also on television for advertising and commercial messages (Figure 3). On the top left of Figure 3 is an image of Nara city. Nara is famous for its Buddhist temple and deer; thus its image is a monk with antlers on his head. On the bottom left is an image of Kumamoto prefecture, showing a black bear called Kumamon. It is popular in Japan and in other parts of the world. On the top right, a white dog is the publicity image for the cell phone carrier, Softbank. On the bottom left, a village in Koganei City. The residents are able to speak Japanese.

Figure 5 is an advertisement style can draw more attention than boring slogans. The image in the center is posted in homes, or posted public places (Figure 6). The result is that people will be exposed to the role of propaganda messages on media literacy.

Figure 5: An advertisement
Softbank. On the bottom right, “Peko” symbolizes the famous snacks manufacturer FUJIYA. People may not know these brands in detail, but they may have seen these images somewhere. The image in the center is “Trakky”, which means “To Lucky”, for the Hanshin baseball team. Japanese have seen this image even if they are not interested in baseball at all. These manga propaganda images have a publicity effect as they are somewhat attractive. They not only play the role of propaganda, but are also used as decorations, stickers and other related products.

Manga has been used for public instructions (Figure 4). This picture is the homepage of Koganei City. The signs are straightforward and easy to understand. Even if people are not able to speak Japanese, they can find the information they need.

Figure 4: Instructions of Koganei City

Figure 5 is an advertisement for the Japanese army Jieitai. This cartoonish advertising style can draw more curiosity and attention from people better than tedious text posters with boring slogans. These advertisements and posters made of manga are also mailed to people’s homes, or posted prominently on streets and buildings. Japan is an earthquake-prone island, so the Japanese government made a lot of efforts to give earthquake-evacuation guidance in great detail. The resultant guidebook is a free asylum guide for residents who live in Tokyo (Figure 6). The Tokyo government published this book in September 2015. It mentions all kinds of actions that should be taken when an earthquake such as one depicted with all of the text con-

Figure 5: An advertisement for Japanese Army, Jieitai

Figure 6: An asylum guide to earthquake emergency
tent of Manga strikes. The Japanese have made a great contribution to spreading the culture of Manga to the world. It is obvious that the Japanese make full use of manga, at which they are especially good, and have infused it into every part of daily life.

For the Japanese, it is very easy to buy many kinds of manga books. Manga books are not only sold in bookstores as in other countries, but they are also available in convenience stores. There are more than 50,000 convenience stores in Japan. Every one of them sells manga books and they are placed in a prominent place. People can see customers standing in the store reading the latest manga magazines. Moreover, manga books can be read in many places in Japan. Some restaurants provide manga books for free reading to attract more customers. They provide a bookshelf of manga books and the customers can freely read all of them. Internet cafes stock many manga books and so are called manga cafes.

According to an Internet research on manga by NTT.com (2012), 74.4 percent of respondents aged from 15 to 44 like manga, while 32.7 percent of them like manga very much. It is clear that most Japanese like manga.

Japanese manga also has great impact on foreign countries. The manga character, Doraemon, is not only well known in Japan, but also can be recognized in other countries. In fact, Japanese manga has a good international reputation and a large world market. In China, since the Internet advanced and cultural exchanges increased between China and Japan, a wide variety of Japanese manga has come into China. Japanese manga has been very popular there since the Japanese manga Astroboy was broadcast in mainland China in the 1980s. After that, Pokemon, Doraemon, and Slum Dunk went into China and all of them were great successes. They have succeeded in attracting Chinese audiences, especially young people. In fact, many of those born after the 1980s grew up with Japanese manga and its influence is easy to find. For example, influenced by Slum Dunk, many Chinese teenagers become interested in basketball (Zheng & Ye, 2013). Besides, some Chinese teenagers become interested in Japanese culture and society as a result of watching or reading Japanese manga, since this may be the most Japan-related thing in their life.

From all of this, it can be found that manga has great effects on Japanese daily life. Therefore, we would like to discuss how it plays an important role in improving media literacy in Japan.

Many studies have examined media literacies in manga (Anime, Comic) in Japan, because the Japanese have been reading, drawing and learning manga since Chōju Giga was drawn in the 12th century. National Treasure Chōju Giga, Flocking Animals, is perhaps Japan’s most-famous set of illustrated scrolls (Tokyo National Museum, 2015). Some Japanese waited for four hours to see Chōju Giga in the Tokyo National Museum in July 2015.
Japanese books are valued at $13.8 billion in the world market and 24.1% ($1.5 billion) of the content is manga (Ministry of Economy, Trade and Industry, 2015). The sales of books are worth $4 billion and manga was worth $1.8 billion in 2013 (The Research Institute for Publications, 2015). The sales of digital comics were valued at $500 million in 2014 in Japan (Impress, 2015). The sales of printed manga have been decreasing but those of digital comics have been increasing every year.

In the Japanese national curriculum, secondary-school art has been used in this picture. The art textbook explains that Choju Giga is the original modern manga expression: a speed expression for Nodame Cantabile, Iji Dozu Gaho (a composition method used to show successive events within a united background) for Meitantei (Detective) Konan and voice expression for Jungle Emperor Leo (Figure 7).

![Figure 7: Choju Giga in 2nd and 3rd year Arts textbook in secondary school, by Sakai et al. (2002). Mitsumura Publishing, p. 43.](image)

Most students have drawn many kinds of manga in their notebook. Everybody could draw Doraemon with Doraemon’s song. Children have drawn Pokemon, Meitantei Konan, Sauske, Heart Catch Pre Cure and Yokai-Watch. It is important for children to draw manga well. Undergraduate students have learned natural science through manga books on the theory of relativity, molecular biology, and organic chemistry.

Japanese have read many kinds of manga books. There are 1,500 kinds of manga books on Amazon. We can buy 10 kinds of manga books teaching the Chinese language. We can buy two kinds of them for Le Capital au XXI e siècle by Thomas Piketty, too. Manga has been used in formal and informal education. Talking on smartphones is forbidden on a train but people read manga or play games on their smartphone with it.
Manga on Formal Education

There is a lot of manga in the textbooks for elementary and secondary school. They are published by private companies but the Japanese Ministry of Education censors them. Teachers do not hesitate to use manga in their classrooms. Students draw manga with Tezuka’s manga: Atomic Boy and Phoenix, in the arts textbook. They make a story with manga in their Japanese language textbook to increase composition ability. Manga characters, uniformed high school students, explain the contents of a textbook: mathematics, Japanese language, science, history, geography in secondary school.

Manga on informal education

Students have learned many things informally through manga. We learned history by Hadashi no Gen (The atomic bombing of Hiroshima) and Japanese history and literature by Asaki Yumemishi (Genji Story), Chinese history and literature by Sango Zhi (三国志, Sangooku-shi) and Qin Shi Huang (Kingdom) and Sun Wukong (孙悟空). Many athletes read manga and have a high motivation: Kei Nishikori, the most famous tennis player has seen Tennis no Ova (なoles, the prince of tennis). Baseball and football players have seen many kinds of manga: Rising Star (巨人の星), Touch, Captain Tsubasa, Inazuma Eleven. Children have learned how to live their young lives through manga: Doraemon, Pokemon, Meitantei (Detective) Konan and Youkai (Specter) Watch.

Study of Manga and education

Many studies have examined the effects of manga on education (Iejima & Tamada, 2013; Matsumoto & Iejima, 2013; Yamada & Sugaya, 2013; Kubota et al., 2014. Iejima & Tamada (2013) reported teaching with manga. A growing body of evidence suggested manga’s effects on teaching from 1980. Many studies examined the effects of manga as teaching materials. In one study, manga’s effects are only on a certain area. There are some researches on a correlation between manga exposure and some abilities, content analyses on TV manga and teaching manga copyright in information ethics. Matsumoto & Iejima (2013) reported career education using manga. They insist that it is very important for career education to use manga, because it supplies models for people. The character and story of manga are very attractive. Manga reports a reality to young people and gives them active learning. It is important that we supply well-established evidence that manga is effective material for teaching contents and objectives. Students pay attention when the teacher uses manga for teaching, but they see manga as fun and resist learning manga. Yamada & Sugaya (2013) reported using manga for art educa-
Art teachers use manga instrumentally for an expression in the national curriculum. They taught 100 lower-secondary-school students to draw Four-Frame Manga. The students have never drawn Four-Frame Manga and some students stopped drawing manga for character design, story boards and pictures. They finished the manga and had such positive attitudes as when they drew other manga. Kubota et al. (2013) examined an improvement of lesson plans using Manga-based teaching simulation and effects of the improvement process on pre-service teacher training. Students’ activity of reviewing manga which they created themselves helped them to understand the manga comprehensively and it offered an opportunity to examine the conventional teacher-centered lessons as students’ opinions began to be accepted so that the teaching plan would be improved. Creating manga was a fundamental activity to improve the teaching plan since the class heard free voices from teachers and students. In order for students and teachers to improve their teaching plans, it was necessary to conduct manga-based teaching simulation and review it.

Some researchers studied the effects of digitalized manga on education (Takeuchi, 2010; Kojima & Sugaya, 2010; Shumura & Yanagisawa, 2010; Funaoi & Suzuki, 2010). Takeuchi (2010) has developed software for using manga digital textbooks. The software enabled scanned manga to divide into frames. Takeuchi compared print manga with digital manga. Manga textbooks covered a history of films. Undergraduate students in the print manga reading group (N=20) and students in the digital manga reading group (N=20) read the manga and answered a question on the history of films. He reported that students who read digital manga read more slowly and had more knowledge than students who read print manga. There were no significant differences between the digital manga group and the print manga group in their ability to recall a manga character. Kojima & Sugaya (2010) researched digital manga. Eighty-two undergraduate students answered a questionnaire on an experiment of, media of, usage style of, images for, and attitudes toward digital manga. Sixty-three percent of the students had read digital manga and they did so on computers and mobile phones and in books. They thought digital manga was difficult to read, but they could read it everywhere; it was easy to try to read, charging is troublesome, “my eyes get tired;” it was not bulky. They answered that they would read free digital manga. Two undergraduate students participated in an experiment. They read print manga and they read digital manga on their iPads. There were no significant differences between digital manga and print manga in its understandability. Shumura & Yanagisawa (2010) assessed manga textbooks used in university. One hundred forty-six undergraduate students learned statistics with a manga textbook, manga statistics, and they answered a questionnaire on their attitudes toward a manga textbook. They were apprehensive that they had to learn statistics from a manga textbook in the first lesson, but they never
showed displeasure with the manga textbook. There was no difference in attitudes between the high-grade group (N=32) and the low-grade group (N=41), but the low-grade group used the manga textbook for preparations more than the high-grade group. There were no differences in the attitudes of both genders, but the males liked the textbook more than the females. Fur-naoi Suzuki (2010) examined the effects of manga design on presentations. Six undergraduate students drew manga illustrating issues on the relocation of Marine Corps Air Station Futenma. They used the manga for designs of their presentations. And they made PowerPoint (PPT) presentations of those issues. Two students put new contents (half of the manga) in PPT. Three students did not have strong feelings about PPT. Two students lost logical coherence in PPT. They found that manga designs used in presentations caused some problems.

**Manga, advertising, violence and stereotypes**

In 1997, 3.45 million Japanese children saw the Pokemon TV program, Densou Senshi Porygon. Seven hundred fifty children had photosensitive epilepsy (PSE) and 135 children were hospitalized. The Ministry of Health and Welfare (1998) researched 9,209 children and 4,026 of them saw that program and 417 children had PSE. This incident was referred to as the “Pokémon Shock” by the Japanese press. After the incident, TV stations ran a telep, “Please turn the light and watch at a distance” on animation programs.

Many studies show that manga is associated with violence, stereotypes and advertising for children (Buckingham, 2011; Linn, 2010; Bandura, 1965; Sado et al., 2004; Sasaki, 1996; Fujita, 1996). Buckingham (2011) explained Pokémon in the contemporary children’s market as follows:

“At its peak in 2000, Pokémon was undoubtedly the most profitable children’s “craze” all-time: in that year, it reputedly generated over $7 billion worldwide. Beginning as a computer game, quickly followed by a TV series, a trading card game, feature films, books, magazines, toys and a plethora of other merchandise, Pokémon is the paradigm example of contemporary “integrated marketing”. …Different types of products were also targeted at different age groups – soft toys for younger children, TV cartoons for 6- to 8-year-olds, computer games for older children – allowing children to “graduate” from one to the next. (Buckingham, 2011, p. 92)

Linn (2010) criticized the commercialism in children’s lives. A product placement (advertising put into products) and brand licensing (products with manga characters) have been increasing. A character’s marketing was $16 billion in Japan in 2014 and $9.6 billion were for children. She explains how advertising hurts kids in the following ways:

Marketing to children is unfair
It undermines parents

It glorifies
It encourages
It sexualizes
It stigmatizes
It distorts
It’s insensitive

And she suggests what these parents can do:

Carve out non-commercial time
Limit screen time
Reclaim personal space
Call out advertising
Learn more
Speak up
Choose wisely
Work for change
Celebrate friendship
Join the movement

The TOYOTA role of Doraemon
We have had a brand

There is commercial.A post-exposure analysis of imitative behavior
A post-exposure analysis of imitative behavior performed significant differences. Children model-punished, model-unpunished, and model-random violence
It glamorizes greed
It encourages unhealthy eating
It glorifies violence
It sexualizes kids
It stifles imagination
It distorts body image
It’s inescapable it’s getting worse

And she suggested 10 things that we can do to reclaim childhood from corporate marketers; they are:

- Carve out commercial-free time
- Limit screen times
- Reclaim your school
- Call out the worse
- Learn more
- Speak up
- Choose to be commercial-free
- Work for the local state
- Celebrate screen-free weeks
- Join the Campaign for a Commercial-Free Childhood (cefc, 2015)

The TOYOTA Doraemon car commercial has been broadcast since 2011. Juan Reno plays the role of Doraemon in *After 20 Years Doraemon.*” This commercial is for the Doraemon generation. We have had a brand loyalty to Doraemon and TOYOTA took advantage of that.

There is consistent evidence that certain anger induces violent behavior (Bandura, 1965; Sasaki, 1996; Sado et al., 2004). In an early classical study, groups of children observed an aggressive film-mediated model either rewarded, or punished, or left without consequences. A post-exposure test reveals that responses to the model produced differential amounts of imitative behavior. Children responding to the situation in which the model was punished performed significantly fewer matching responses than children responding to the other two situations. Children responding to all three treatment conditions were then offered attractive reinforcements contingent on their reproducing the model’s aggressive responses. The introduction of positive incentives completely wiped out the previously observed performance differences, revealing an equivalent amount of learning among children in the model-rewarded, model-punished, and the no-consequence conditions (Bandura, 1965). Sasaki (1996) reported random violence: There is much outbreak of violence in manga; people die and revive soon;
it lacks reality and characters are personified animals and goods. He examined a relationship between random violence and TV violence exposure. Four hundred seventy-three secondary-school students answered a questionnaire and a positive relationship was observed between random violence resulting from TV program exposure and violent behavior (r=.29, p<.01). Sado et al. (2004) studied a content analysis of pro-social and antisocial behavior in Japanese TV programs. They analyzed violence and pro-social behavior shown in TV programs of 280 hours in one week, using analysis levels that are based on the National Television Violence Study (1996-1998). Fifteen of 18 manga TV programs contained violence. Violent behaviors predominated in one manga program. Six of 18 manga TV programs contained pro-social behavior. Pro-social behaviors also predominated, though to a lesser extent than violent behaviors, in a manga program.

Prior research has suggested that a character belonging to a manga gender is a stereotype. Fujita (1996) analyzed the descriptions of women and men in TV manga programs to examine a broader gender issue in mass media in relation to children. She chose 13 TV manga programs that pre-school and elementary-school children seemed to like. Nine of the programs were televised in the 1990s and two in the 1980s. An analysis was as follows. The proportion of male and female characters and their occupations are examined. The characteristics of child characters are analyzed. An analysis of gender as a “relationship” in the story is conducted. In this analysis, comparison of the program televised in the 1990s was conducted with those of a previous period for reference. The findings were as follows: Male characters appeared more than female ones in most programs. Most of all the adult male characters had an occupation. Many adult female characters were housewives or mothers. 1990s female characters’ occupations were more diverse than those in the 1980s and 1990s. Female child characters were Kawaii (pretty), but some 1990s female children were strong. Male child characters were of two types: handsome and tender, and ordinary boys who often made mistakes. Boys were stronger than girls and some 1990s girls are stronger than boys. The strong girls behaved Kawaii in front of her boyfriends.

Many video movies show a difference between Japanese manga and the USA’s. We can see Japanese One Piece and USA’s on YouTube (rikukh5, 2013). Japanese One Piece contains much violence, sexuality, alcohol drinking and smoking, but USA One Piece got rid of those situations. One Piece is a good area from which to learn representations on media literacy.

Critique of media literacy and digital storytelling

There are several main methods to learn media literacy through Manga: design, production and critique. Media researchers and teachers have conducted a very large number of studies and implemented media literacy practice in an elementary and secondary school. Students who wrote stories from the literary texts as a starting point, they produced manga stories based on the National Television Violence Study (1996-1998). They created manga storyboards in order to demonstrate intertextuality for reading manga and anime stories.

Marsh (2006) showed that nursery engaged in manga storyboards were related to the development of the storytelling skills developed in the activity. It has implications for educational implications for children of different age groups. He analyzed the content of the stories and then the films. He analyzed the development of the children’s characters storyboards throughout the storyboards and understand the nature of the children’s learning in the storyboards.

Banister et al. (2010) showed that the use of stories, diagrams, animation, or the making of comics, many years, recorded in children’s storyboards. Twenty-first century learning through this type of literacy allows children to understand media narratives and to inform communicators in the future. Media producers in media-production should be aware of this in designing virtual worlds and media literacy.

Toyoda & Kawasaki (2009) showed that “Gongitsune (a spirit) and others” in Japanese language.
studies and implementations on plans and productions of manga, and have systematically addressed media literacy in Manga (Chandler-Olcott & Mahar, 2003; Marsh, 2006; Banister et al., 2010; Toyoda & Nishimura, 2004; Sano, 2012; Fuse et al., 2010).

Chandler-Olcott & Mahar (2003) examined a case study using fan fiction writing as a literacy practice in the context of multiliteracies. Data were obtained from two adolescent students who wrote fan fiction, described as the raiding of mass culture by fans who use media texts as a starting point for writing that was inspired by the Japanese manga, *The Shrine for Vegeta in Dragon Ball Z*. Results derived from the use of a multiliteracies framework show that the students’ fan fictions were texts that were influenced by cultural artifacts and social discourses. They show that the fan fictions were multimodal on a number of levels, demonstrated intertextuality, and were of a hybrid nature in that they combined various discourses and genres. Implications of the results for teachers are presented.

Marsh (2006) outlines a research project in which three- and four-year-old children in one nursery engaged with editing software to create short animated films. Research questions were related to the knowledge and understanding of multimodal texts that the children developed in the activity, the skills they demonstrated in undertaking the animation work and the implications for curriculum development. Qualitative data were collected over an academic year as children were observed (using field notes and video cameras) planning and producing the films. He analyzed some of the knowledge and understanding of multimodal texts developed throughout the project and suggested that early childhood educators needed to understand the nature of new authorial practices if they were to provide appropriate scaffolding for children’s learning in the new media age.

Banister et al. (2010) explained that effective educators had incorporated media (images, diagrams, animations, simulations, audio, video, etc.) into their classroom instruction for many years, recognizing that these elements supported student learning in powerful ways. Twenty-first century teaching and learning emphasizes media literacy as an integral skill and this type of literacy is multifaceted. Teachers and students must be able to interpret and understand media messages, as well as design their own media messages in order to be relevant communicators in our media-rich world. The study documented the positive growth in media-production skills gained by teachers who participated in a two-week intensive experience in designing virtual field trips for their specific classrooms. Data indicated that significant gains in media-production skills were achieved in a short time.

Toyoda & Nishimura (2004) made four grades of children images and animations of “Gongitsune (a story of an old man and a fox)”, a unit of a textbook used in four grades of Japanese language in elementary school. The Japanese language teacher and Drawing and
Handicraft teachers collaborated in the classroom. Children needed imaginations and drawing abilities to deeply understand the characters’ emotion and to concretize a story situation. The children understood many kinds of expression and media characteristics. They improved their expression and media-literacy abilities.

Sano (2012) investigated what instruction is effective for teaching animation production in media-literacy education. To address this, she attempted to demonstrate the effect of this form of media-literacy education by creating educational strategies and a learning environment that would motivate students to produce animations, and posited the experimental quality of their work as an index to measure their motivation levels. To verify this hypothesis, she described the learning environment for teaching animation production. Specifically, 1) identified the equipment, 2) identified the educational strategies, and 3) identified a diverse range of styles. She provided a detailed analysis of the work produced by the students, assessing each piece for its experimental quality. Nine pieces of the students’ work produced during a two-year period were analyzed. Rather than examining the technical skills that were used, the analysis focused on the forms of experimental expression that the students were able to achieve and identifies how motivated they were to transmit the information. The majority of the students reported that they enjoyed being able to express themselves freely, without any restrictions on how they should produce their work. She could therefore infer from these results that the established educational strategies and learning environment were systematically structured for effectively teaching animation production. The study aimed to discover what type of instruction is effective for teaching animation production in media-literacy education. She believed that it enabled students to give concrete forms as expression experimentally to all kinds of personal experiences. This includes things and events around them, or images inside their head that were not constricted by reality. Students spend their days in the educational arena of the university. One reason for attending classes was to gain the credits they needed to graduate; however, being able to express experimentally unites the self -- as a student and as an individual -- and immersed one in the play, which went beyond the simple requirement for credits. By producing pieces that creatively present the self, students allowed themselves to be evaluated by their friends as well as people from all over the world via YouTube. This was where she saw the real effect of animation production on media-literacy education. She would like to conduct further research to investigate the results and issues surrounding the learning experience with the goal of demonstrating the usefulness of teaching animation production as part of media-literacy education. It showed that undergraduate students produced animations and developed information-transmission skills in media literacy.

Fuse et al. (2010) examined an effect of drawing One-Frame Manga on media literacy in university. One student described it as “a revolution of communication society.” They estimated the media literacy level of students based on the data they analyzed. Students who deeply understood the message conveyed by the story were categorized as the “effective group.” The empirical analysis of the group was conducted in three studies. The first study involves empirical research is discussed in detail.

Digital Storytelling explains DS as follows.

Digital Storytelling (DS) is a multimedia representation of events, spoken word. Lessons from real life, a flow of ideas, imagination, aesthetics, and multimedia tales can be expressed in one story. It can pass many topics. It is an array of software that helps to store complex data, such as text, image, sound, music background, and animation. The students usually expressed a story of how to make that story realistic into a multimedia story around the written story.

Susono and Takahashi (2008) observed the informative power of DS and multimedia tales and conferences. They explored the design of multimedia tales by taking the DS scenario into consideration. Sano et al. (2008), and Fuse et al. (2010) have developed their own stories for DS and multimedia tales. (Fuse et al., 2011). And the students’ works continue to be presented on pre-service teacher’s conference, online presentation, and, importantly, reflect the students’ personal and social experiences and evidence for critical thinking.

Taken together, these studies explore the potential of multimedia and media literacy. Information and communication technology (ICT) is an important tool that is shared in the society.
in university. One of the researchers, a manga artist, made One-Frame Manga, on an "information society," and he deleted words from the manga. Eighty-nine undergraduate students estimated the manga artist’s intentions for the manga and wrote words on the manga. Students analyzed other students' words. The students understood a diversity of audiences. And they deeply understood the characteristics of information that said that the comprehension of a message depended on a situation that the audience put in and a lesson theme. To date, few empirical analyses evaluating implementation of a critique of manga are available. Thus, additional research is needed to clarify whether a critique of manga contributes to media literacy.

Digital Storytelling (DS) seems to be a way to teach media literacy. Frazel (2010) explains DS as follows:

Digital Storytelling is a process that blends media to enrich and enhance the written or spoken word. Leaders in the field have called digital storytelling a new twist to storytelling -- multimedia tales are the modern expression of an ancient art. Digital Storytelling can encompass many topics beyond the classic story, take many forms, and employ an ever-expanding array of software applications. A digital story may have a narration overlay and sometimes a music background; it may combine, in any number of ways, images, audio, and video to tell a story of how to make a factual presentation. In many cases, sound, music, and images surround the written or narrated content (Frazel, 2010, p. 9).

Susono and his colleagues made many kinds of Digital Storytelling (DS) to children of elementary school, secondary school and pre-service teachers. Those kinds of DS are letter to myself (Susono et al.,2010; Ikawa et al.,2010a, 2010b, Kagami et al., 2011), Mottainai (Susono et al.,2008), book (Susono et al.,2009), and blue eye’s doll (Nishimura et al.,2012). They have developed systems of DS (Susono, 2010; Suono, 2012a; Susono et al, 2006; Susono et al., 2011). And they made DS to pre-service teachers and found many effects of creating DS on pre-service teachers: self-cognition, expression of multiple intelligences, media literacy, presentation, collaborating learning and humanity (Susono, 2012b; Susono et al., 2013). Importantly, reflection on Digital Storytelling (DS) has provided some of the most convincing evidence for critique on media literacy (Susono et al., 2013).

Taken together, the preceding evidence suggests that manga DS develops an ability in media literacy. DS is known for seven components (Lambert, 2013). They are: 1. It is self-revelatory, 2. It is personal with a first-person voice, 3. It has a lived experience, 4. photos, 5. a soundtrack, 6. length and design, 7. intention. Points 1 and 7 apply to media literacy. Lambert explains the points as follows:

Self-Revelatory – The stories feel as if the author is aware of a new insight that is being shared in the story, giving the story a sense of immediacy and discovery.
7. Intention – And this is less about form than function, but it can be said that the CDs (Center of Digital Storytelling) workshop privileges self-expression and self-awareness over concerns of publication and audience: process over product. The products may achieve a larger impact on the audience, but the honoring of each individual’s process of authorship, and the resulting control over the context of the story being shown, is critical. The storyteller ideally owns the stories, in every sense. This perspective informs all choices about participation, ethics-in-process, as well as distribution. (Lambert, 2013, pp. 37-38)

The self-awareness of DS leads to the prediction that students’ manga DS will reflect their manga exposure and help them to learn media literacy. The goal of this article was to investigate the effects of manga DS on media literacy.

**Method**

**Learner**

Forty-four pre-service teachers, computer science majors, second years at Tokyo Gakugei University, made mass-media DS in the information course unit. Their ages ranged from 19 to 20. Twenty-eight of the teachers were male. All teachers had laptop computers and smartphones (iPhones).

**Learning materials and tasks**

The teacher’s task was to make mass-media DS in collaboration work. DS was 2 or 3 minutes and mp4 made by Movie Maker/iMovie or PowerPoint. They were asked for a short report on the DS as an assignment of the unit. Teachers took four lectures and two workshops for DS in the classroom in university. They learned UNESCO’s “media and information literacy curriculum for teachers” (Wilson et al., 2011) and understood media representations and languages in the first and second lectures. They saw many kinds of DS in the third lecture: last year’s teachers’ DS, ABC Open, “How to make DS” and “DS process.” They saw some Internet DS videos (Susono, 2010; Neff, 2013; Okahashi, 2012) in the fourth lecture. Teachers made groups and decided the theme of DS in workshop 1. In workshop 2, they made a plan for DS. They made DS for one month in year-end and the New Year holidays.

Teachers made 15 kinds of mass-media DS (Table 1) and five of 15 DS were manga. Eighteen of 44 teachers made five manga DS. Five teachers made 3 minutes’ DS of Weekly Shonen Sunday (comics magazine) from elementary to lower and upper secondary school. They picked up 8 manga such as Konan. Shonen Sunday was one of three major comics magazines and the others were Weekly Shonen Jump and Weekly Shonen Magazine. Eight kinds of movie and thirty minerals and ten of Japanese anime (Heisei Tanuki Gang, Princess Mononoke, Return), Haru no gake no ue no monarch, Gake no ue no monarch Arrietty). From 1983 to 2010, they had seen four kinds of manga, Sunday morning and Sunday evening. They they described that comments on DS that comments on
magazines and that was published in 1959 by Shogakukan. The price of the manga is 270 Japanese yen and an elementary-school child can buy it every week. Three teachers made one minute and thirty seconds’ DS of a top one movie from 1992 to 2010. This DS contained 20 movies and 10 of them were manga that Studio Ghibli made: Kurenai no Buta (Porco Rosso), Heisei Tanuki Gassen Pon-Poko (PONPOKO), Mimi wo Sumaseba, Mononoke Hime (Princess Mononoke), Sen to Chihiro no Kamikakushi (Spirited Away), Neko no Ongaeshi (Cat Returns), Hawl no Ugoku shiro (Hawls’ Moving Castle), Gedo senki (Tales from Earthsea), Gake no ue no Ponyo (Ponyo on the Cliff by the Sea), Kari-gurashi no Arrietty (The Borrower Arrietty). Two teachers made three minutes’ DS of manga, Armored Trooper Votoms, from 1983 to 2011. This manga was a science fiction and robot manga. Teachers picked up eight kinds of manga of Votoms. Two teachers made three minutes’ Superhero TV show on Sunday morning in TV Asahi station from 2004 to 2014. They picked up 12 programs that they had seen from 4 years in elementary school. Four of the 12 programs are manga: Heart Catch Pre Cure! Two teachers made three minutes’ animation of a guide for classical music. It was DS that teachers drew animation of classical music’s history with photos and made it into a three-minute film. Teachers showed their DS in the class and commented on DS in BBS (Bulletin Board System). After the lesson, the teachers completed an essay in which they described their DS. We analyzed 119 comments from manga DS on BBC and 36 essays that comments on manga DS.

Table 1  Kinds of DS that teacher made

<table>
<thead>
<tr>
<th>Manga</th>
<th>Weekly Shonen Sunday</th>
<th>Top one movie from 1992 to 2010</th>
<th>Armored Trooper Votoms</th>
<th>Superhero TV show</th>
<th>Animation for classical music</th>
</tr>
</thead>
<tbody>
<tr>
<td>video game</td>
<td>Pokemon</td>
<td>NINTENDO CM</td>
<td>Smash brothers</td>
<td>Game boy</td>
<td>Game console</td>
</tr>
<tr>
<td>movie/drama (no manga)</td>
<td>Harry Potter</td>
<td>My favorite drama &amp; movie since elementary school</td>
<td>Young girl’s idol</td>
<td>iPhone</td>
<td></td>
</tr>
</tbody>
</table>

Note. N=44. a: manga can be a magazine, a drama or a movie.
Results and Discussion

Analysis of comments and essays

The findings of comments and essays showed that teachers looked back on their manga exposure. Most of the teachers enjoyed making DS. There was very strong nostalgia for them. A teacher wrote:

Reflecting on my experience of media exposures, I felt nostalgic about some manga. I remembered a lot of manga that I had read in my childhood. I enjoyed making manga DS that reminded me of my good days.

Another teacher wrote about manga movie DS that he made.

I enjoyed making DS. Our group made DS, the top movie from 1992 to 2010. Fifteen of 18 movies are manga and I was apprehensive that 10 of the 15 movies were Gibli's. I understood that Gibli movies had been popular and felt nostalgic. I was surprised that Howl’s Moving Castle was the top movie for two years. I was very happy that I made this DS.

There was very strong nostalgia for them. Many teachers empathized with their DS because they had seen the same manga in their childhood. A teacher wrote a report as follows:

Every manga DS is very nostalgic for me because I grew up with the manga. We searched for a degree of popularity of Gibli’s movie and were surprised at the high popularity of Gibli’s. I had seen every Gibli’s movie and these movies were very nostalgic for me. DS of Superhero TV show was strongly nostalgic for me, because I had seen the manga every Sunday morning. I had seen “Heart Catch Pre Cure!” since 2004. I saw changes of that manga and remembered my childhood.

A teacher recognized sympathy and an effect of manga on his life.

Sympathy was an effect of DS. We were raised in different environments and we took it for granted that teachers had different media exposure. There was no obscure DS and all teachers sympathized with all DS. I felt big effects of media on our life. Popular cultures as manga, TV and video games have an intimate relationship with advertising and media that teachers look back on their manga as

A teacher has developed a critical perspective on advertising and media that his colleagues and others attach to their memories from childhood. A teacher thought about their childhood media.

Teachers study of media literacy in the classroom is a way to think about how to make lessons meaningful and thought about their childhood media. A teacher thought about Sagas and teaching media literacy.

A teacher has developed a critical perspective on teaching media literacy in the classroom:

Teachers study of media literacy in the classroom is a way to think about how to make lessons meaningful and thought about their childhood media. A teacher thought about Sagas and teaching media literacy.

The teacher learned and developed critical perspectives on media literacy in the classroom.

“Intention” is developed in the classroom. Lambert, 2014. Teachers did not know how to teach media literacy in the classroom. Teachers did not know how to teach media literacy in the classroom. Teachers did not know how to teach media literacy in the classroom.
with and are essentials for our lives. We feel nostalgic for media because we have exposed the media and jumped on the bandwagon. We had fanned the same media everywhere in Japan. Media had carried out their intentions. We recognized that media had a big power.

A teacher had a complex attitude to media.

We have lived with many kinds of media from our childhood and remembered those media. I knew that every teacher had enjoyed media individually. I am happy to know that all my media exposures were not the same as others. My parents and other adults had criticized a media exposure that affected children. I do not agree that all media exposure has an evil influence on children. I’m proud of the mass media that had extended my possibility, teach various viewpoints and bring me up.

A teacher thought of how to teach mass media to children in a classroom.

Media has taken root in our lives because images and sounds of mass media were still vivid in our memories, and media had impacts on our lives. Information and media exist together. We learned from this lesson that we have to think more deeply about the effects of media when we teach information in computer science in the classroom. How we should teach media to children responsibly? How we teach children the way they generate media. We should teach Media and Information education as we focus on the effects of media.

Teachers saw manga DS and look back on their exposures to manga, but they did not criticize specifically any manga. Some teachers recognized the effects of media on their lives and thought about how to teach children media. The teachers did not describe media violence, advertising and gender stereotyping.

**Discussion**

The teachers selected their favorite manga; therefore, they did not criticize manga. DS has developed in the USA. People are required to “appeal” to themselves in their daily lives. “Intention” is one of the components of DS and privileges self-expression and self-awareness (Lambert, 2014). DS contains no critique and has some possibility of expressing narcissism. Teachers did not describe media violence, advertising and gender stereotyping. They have
lived in Japan for 20 years and they have never been to a foreign country. There are 120 foreign students in the teacher’s university but foreign students are graduate students and teachers had no communication with them. Teachers live in one small culture. The Japan National Curriculum does not have media literacy, but rather computer literacy. The teacher had no chance to learn to criticize violence, advertising and gender stereotyping in media literacy. The results from this study contribute to the education of media literacy production. Several limitations concerning this study require consideration. A limitation of the study was its reliance on production. DS was not for critique, but for production in media literacy. Despite these limitations, the study provides support for the notion that DS is a tool of media-literacy education. A question worthy of future research is how manga DS relates to critique of media literacy. This study has demonstrated that DS is particularly valuable for research on media-literacy education.

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