GENERATION GAP IN USERS' PERCEPTIONS OF COMMUNICATION IN AN ELECTRONIC NEWSPAPER

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Abstract - Recently, the number of college students in Japan who read the newspaper has been decreasing even though thenumber of young people who access online news through major research engines has been increasing. Regarding the use ofnewspapers in the field of education, research on the use of electronic newspapers is necessary to adapt to the present situation. This paper examinesthe generation gap inusers' perceptionof communication in a community-based electronic newspaper. An online questionnaire survey was conducted for readers of Kahoku Shimpō, which focuses a regional community in the area of Tohoku in Japan. Results showed that there are certain differences between generations in their perceptions regarding an electronic newspaper such as reading it, evaluating, and sharing articles with others.

Index Terms - Community, Electronic Newspapers, Perception, Questionnaire survey, Share

I. INTRODUCTION

In Japan, the number of paper-based newspapers that are purchased has been decreasing in recent years, and "the trend of leaving behind newspapers," especially among young generation, has been pointed out with the growth of the Internet. In 2015, the voting age was lowered from 20 to 18. These social changes have had an impact on higher education, providing opportunities for students to be aware of their responsibilities as a participant in sovereignty of their nation. Although the students who subscribe to paper-based newspapers are rare for reasons related to economics, physical, and time required for reading, students often check news sites as well as articles from newspapers on the Internet consciously or unconsciously[1]. Although the number of people who use the Internet has increased year by year, and the difference between generations in using a PC as well as a smart phone is diminishing, a gap exists in how they use the Internet[2]. The percentage of people who use the Internet to access news sites is as follows:ages13 to 19,33.7%;20s,60.1%;30s,69.7;40s,67.7%;50s,63.9%; 60s and above, 48.3%. These results show that most people across all generations check news on the Internet. However, the percentage of people who use the Internet for Social Network Service (SNS) is as follows: ages 13 to 19,67.3%;20s,76.6%;30s,70.5;40s,59.0%;50s,45.4%; 60s and above,22.6%.These data indicate that there are similarities and differences among the generations regarding popular use of the Internet in terms of communication and their perceptions about using the Internet. College students are "digital natives" who were born after digital technology became widespread. Higher education needs to teach students how to critically decide what to believe or not in the enormous amount of information they read. For the development of higher education, a precise analysis of the generation gap in the use of the Internet is important to understand the base. The Fukuoka Institute of Technology has since 2012 had a program requiring students to write an essay after reading a newspaper, and interviewing and discussing with others to integrate diversified viewpoints. Thus students need to know how to read and use electronic newspapers[3], [4].This will help improve the quality of information and communication on the Internet.

The present paper aims at examining the generation gap in users' perceptions of communication in an electronic newspaper.

II. METHOD

A. Data and Procedure

The paper analyzes users' perceptions of Kahoku Shimpō, which has a regional community in the area of Tohoku in Japan. It is one of the block-newspaper companies that offeredan electronic version of the newspaper at an early stage. Kahoku Shimpōhas attracted nationwide interest since the Great East Japan earthquake(March 11, 2011), which occurred mainly in the area where the majority of users live. Since then, it has played a key role in offering information for communication mediated by articles.

An online questionnaire survey was conducted for the users of Kahoku Shimpō. The request for participants to take the survey was announced via a website(http://www.kahoku.co.jp/) and the mailing list ofthe newspaper's users, called the "Kahopyon Club," from November 13 to 31, 2017.Forty-nine participants (M=37, F=12) took part inthe survey, with 8 in their 30s, 14 in their 40s, and 17 in their 50s and 60s and above.

B. Questionnaire Items

Although the survey questionnaire included15 items, the present paper reports only the results of the following questions: Q1, Are you interested in the 10

top-shared articles?;Q2, Please describe the characteristics of articles you would like to share with others on the Internet; Q3, Do you share articles with others more often than you read articles shared by others through the Internet?; Q4, How do you read an electronic newspaper? Regarding Q1, the articles were selected before the day the survey was conducted. "Share" here means to share articles through SNS. The top 10 articles are as follows:(1) a cat at a solemn gathering, which was a memorial service for victims of the Great East Japan earthquake, (2) an interview by AsahiNewspaperwith the mother of a suicided student who was suspected of using unpermitted data, (3) sightseeing public relations in Miyagi Prefecture using YouTube with inappropriate expression, (4) support for orphans from the Great East Japan earthquake, (5) a case related to Thallium incorporation, (6) the dismantlement of a symbolic building at Sendai Station,(7) the illegal purchase of a destroyed building, (8) a junior high student in Sendai who committed suicide, (9) the retirement of the mayor of Sendai, (10) staff who donot return town has no promotion.

III. RESULTS AND DISCUSSION

A. Difference in Interest in Articles by Generation

1) The generation gap in interest

In this section, the answers to Q1,"Are you interested in the 10 top-shared articles?," are analyzed. The participants' answers to this question were ranked on an ascending risk scale of 1 to 5. The results of the average among the generationsare shown in Fig.1. The highest-ranked average articles are as follows: (8) junior high student in Sendai who committed suicide, 3.96 (SD=1.02), (6) dismantlement of a symbolic building at Sendai Station, 3.80 (SD=1.12), (4) support for orphans from the Great East Japan earthquake, 3.76 (SD=1.11). The relation between the evaluation of top-shared articles and a generation gap was analyzed. The results showeda statistically meaningful relation only for (8), junior high student in Sendai who committed suicide ($N=49$, $r=.283$, $p<.05$). This suggests that users of the older generation are more interested in this article on the suicide of a young student. The article reports that the student committed suicide due to bullying, which was revealed by the parents, although it had not been clarified at the time of the student's death. It also says that there were two similar cases of junior high school students committing suicide in 2014 and 2016 in Sendai. These facts provoked criticism that the adults around the students, such as teachers and parents, could have saved their lives by providing support. The older generation seemed to feel sad and sorry about this tragedy that was repeated of young, promising students dying. People over 50 who have children and grandchildren might feel sympathy andtherefore evaluate this article the highest out of all the others.The consequent cases since 2014 brought attention to the need to change the Japanese educational system.However, the younger generation would not have as many familymembers of their own as the older generation, and this sad case might not be as interesting to them.

2) Factor analysis

In this section, the relation between interest in the top-shared articles and the generation gap is analyzed using factor analysis. First, it was confirmed that there was no unbalance in the distribution in all the answers. The results in the previous section for article (8), which deals with a sad,systemic problem, show the difference in interest according to generation. Thus, the kinds of emotion that are connected with reading articles can distinguish readers'evaluationof articles by generation. The type of emotion can be classified into two categories. One is articles with "positive feeling," which cause users to feel happy, comforted, or relaxed. The other is articles with "negative feeling," which cause users to feel sad, uncomfortable, or angry. These factors of the "positive-feeling article group" and the "negative-feeling article group" are hypothesized. Based on this hypothesis, exploratory factor analysis (maximum likelihood method, quartimin rotation) was conducted.The resultsare shown in Table.1. Each factor is consistent with the hypothesized two factors. Factor 1 articles that correspond to "positive feeling" are six articles that deal with a healing animal, a benevolent-minded person, sightseeing after an earthquake disaster, and the future. In contrast, Factor 1 articles that correspond to "negative feeling" are four

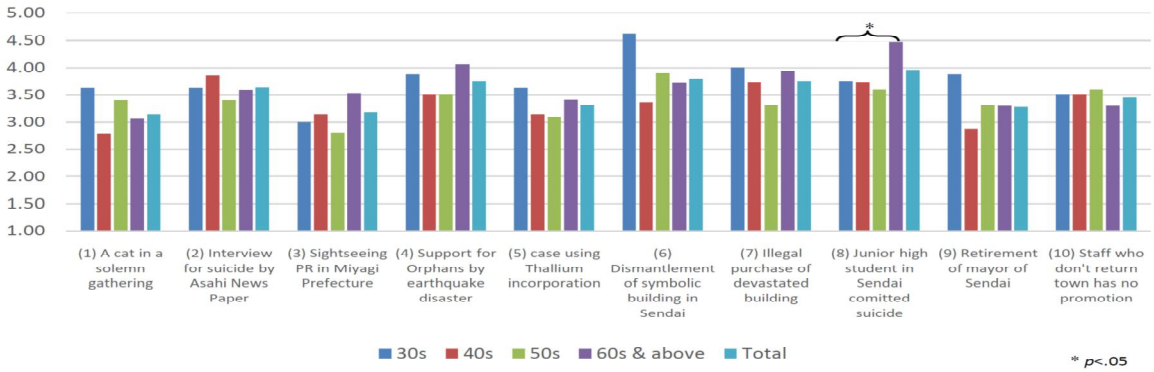


Fig. 1 Evaluation of top-shared articles by generation

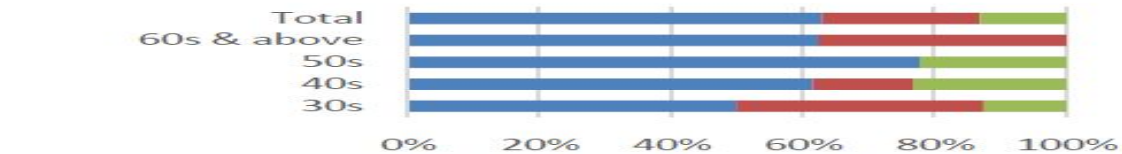
articles that deal with the suicide of young people, unjustness, and not being promoted in a job. The cumulative contribution rate is 46.96. Regarding (5), case related to Thallium incorporation, this article is high in both Factor 1 and Factor 2. The reason for the article appearing in both categories can be explained by its content. It reports on the case of a female college student who committed murder because she had the urgeto kill. The case itself inspire a feeling of sadness and anger, but the article includes discussion of apsychological change in the murderer, who said, "I want to change myself not to kill people." This article can be read as positive news about a murderer's shift in outlook, or as negative news about continual reporting on a murderer, depending on the reader's viewpoint. Deleting the deviation values of the three groups of users (40s, 50s, 60s and above), the relation between the scores of the two factors and generation was analyzed. The results showeda statistically meaningful difference between the scores of only Factor 2 and generation (N=46, df=28, χ^2=63.2, p<.001), which indicates that the older generation has more interest in the "negative-feeling article group" than the younger generation. Regarding articles with a factor score higher than .60, the "positive-feeling article group" deals with goodwill in society. (1) tells about a cat consoling the victims of an earthquake disaster. (4),support fororphans from an earthquake disaster, is also given by a benevolent-minded person. However, all the articles about suicide question the role of education in not saving young lives. The older generation might be interested in articlesthat help clarify the problems of society, whereasthe younger generation gives a higher ranking to articles reporting ongood news and people in society.These differences can be explained by where peopleof different ages are intheir lives, and their perceptions toward society are reflected in these results.

Table 1Results of Factor Analysis

	Factor 1	Factor 2	Communinality
(1) A cat at a solemn gathering	0.88	-0.48	0.78
(4) Support for orphans from earthquake disaster	0.66	0.25	0.53
(3) Sightseeing public relations in Miyagi Prefecture	0.54	0.05	0.31
(6) Dismantlement of symbolic building in Sendai	0.48	0.03	0.59
(5) Case related to Thallium incorporation	0.47	0.42	0.51
(9) Retirement of mayor of Sendai	0.42	0.12	0.24
(2) Interview on suicide by Asahi Newspaper	0.23	0.65	0.32
(8) Junior high student in Sendai who committed suicide	0.26	0.61	0.55
(7) Illegal purchase of destroyed building	0.07	0.55	0.22
(10) Staff who donot return town are not promoted	-0.08	0.31	0.09
variance	2.62	2.07	
contribution	26.23	20.73	

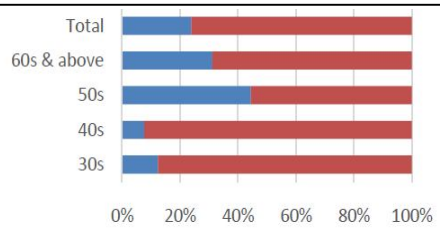
B. **How to Read an Electronic Newspaper**

The resultsfor Q4, How do you read an electronic newspaper?,are summarized based on three categories: (1) I just read newspapers, (2)I readnewspapers and discuss with others face-to-face, (3) I readnewspapers and discuss with others on the Internet. Each number and percentage, in total, is as follows, as shown in Fig.2: (1) 29, 63.0%, (2) 11, 23.9%, and (3) 6, 13.0%. Whereas 63% of users use an electronic newspaper just for reading, 34% read newspapersto discuss articles. None of users of 60s and above answered (3), although more users in their 40s and 50s chose (3) rather than (2).



	30s	40s	50s	60s & above	Total
(1) Read	4	8	7	10	29
(2) Read & Discuss face-to-face	3	2	0	6	11
(3) Read & Discuss on the Internet	1	3	2	0	6

Fig.2 How to read an electronic newspaper



	30s	40s	50s	60s & above	Total
(1) I more share than read	1	1	4	5	11
(2) I more read than share	7	12	5	11	35

Fig.3 How to read an electronic newspaper

C. How to Use an Electronic Newspaper

The results of Q3, "Do you share articles with others more often than you read articles shared by others through the Internet?," are shown in Fig. 3. Each number and percentage, in total, is as follows: (1) 35, 76.1%; (2) 11, 23.9%. There is a statistically significant correlation between the answer to this question and two groups of generation ($N = 46$, $df = 22$, $\chi^2 = 4.72$, $p < .05$). One is the group of combined 30s and 40s, and the other is the group of combined 50s and 60s and above. These results show the difference in generations in using electronic newspapers: older generations share more articles than the younger generation.

D. The Relation Between Reading and Sharing

This section analyzes users' trend of action between reading and sharing, analyzing two questions mentioned above: Q4, How do you read an electronic newspaper?, andQ3, Do you share articles with others more often than you read articles shared by others through the Internet?, using a two-way ANOVA.These questions are considered statistically significant ($N=46$, $df=2$,$f=3.81$, $p<.05$).The results show that users who share articles more often than they read shared articles have a trend toward sharing articles with others after reading them. In contrast, users who read shared articles more often than they sharethem have a trend towardonly reading articles. The former type considers reading newspapers as a communication tool and looks for a suitable topic to share with others. The latter type considers reading newspapers a pursuit of their individual interests.The analysis reveals these two types of perceptions. Next, we focusedon the generation gap among users who more often share and how they share. All users in their 30s and 40s (N=2) answered that they share on the Internet.Half the users in their 50s (N=4) answered they share on the Internet and half answered that they just read. Two users who were 60s and above (N=5) answered that they share face-to-face, and three answered that they just read. These results show that users in their 30s and 40s tend to share on the Internet.

E. The Motivation to Share With Others

In this section, the results of Q2, Please describe the characteristics of articles you like to share with others on the Internet, are analyzed.The answers were coded into three categories after precise analysis: (1) particular contents, (2) emotions and new findings, (3) others. The examples of (1), particular contents, are "information on a disaster area," "topics on common favorite talents," "information related to my family," "local information," "national defense," and so on.Examples of (2), sharing emotions and new findings,includes "articles that make me feel moved, comforted, and refreshed," "contents that amuse me," "topics that raise my spirits, such as sports," "information I never knew before," and "articles with data that give me new insight." The answers that could not be coded as (1) or (2), were included in (3), others. Examples of (3) are "articles I would like to teach someone"and "articles that are not fabricated or unfair."All answers were coded by the author and another person. When conflicts occurred, we discussed which was better.

The results of coding are: (1) particular contents, 13 (26.5%); (2) sharing emotions and new findings, 11 (22.5%); (3) others, 2 (4.1); (4) "I don't share or NR," 23 (46.9%). Excluding (4), (1), particular contents, and (2), sharing emotions and new findings,comprise the great majority and cover 50.0% and 42.3% each, respectively. Focusing on (1) and (2), the relation between the motivation to share and the generation gap is analyzed. The resultsare shown in Fig.4. There is a statistically significant correlation between the answer to questions (1) and (2), and the two generational groups: "30s and 40s" and "50s and 60s and above" ($N=24$, $t=.215$, $df=22$, $p<.05$), and "30s", "40s," and "50s and 60s and above" ($N=24$, $t=.220$, $df=22$, $p<.05$). These resultsindicate that the younger generations are motivated to share articles that focus on feelings,especially positive ones, as a communication tool for constructing a personal relationship. On the Internet, in contrast to face-to-face communication, the personal information of other users is limited, and they supplement this and seek those who can become friends by sharing their emotions.In contrast, users over 50 may share some particular content with others, which indicates that they already belong to a community and that they share information of common interest there. This generation gap can be explained by the environment in which the generations grew up. Users in their 30s and 40s are called "digital natives" and have had Internet resources available to them since their school days. Users in their 50s and over, however, use the Internet to get information from one direction, but might find it psychologically difficult to build new personal relationships on the Internet.

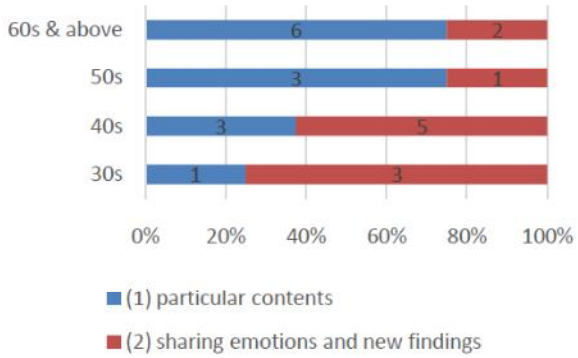


Fig.4 The motivation to share articles

CONCLUSION

In this paper, the generation gap in using an electronic newspaper was revealedat both the communication and the perception level.

1) The older generation likes to know about problems in society and are thus interested in particular topicswith specific content that they can share with others – or content-based communication.

2) The younger generation likesto know about good actionstaken by human beings and are thus interested in positive feelingsthat can be shared with others – or emotion-based communication.

In this research, only the core users of an electronic newspaper are analyzed.The target needs to be spread across awide range of users for application.

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