THE EFFECTS OF FREQUENCY OF MEDIA UTILIZATION ON DECISION MAKING OF MEDIA CHOICE

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ABSTRACT

The purpose of this study is to use the Analytic Hierarchy Process in order to identify how frequency of media use in daily life affects decision-making in media choice. 276 university students took part in this research, They were asked to prioritize their ways of obtaining information about current affairs using sets of media such as TV, books, newspapers, webpages, Twitter and Facebook. Multiple regression analysis showed a clear relationship between frequency of media use in daily life and decision- making in media choice. It was suggested that frequency of media use in daily life affects decision- making in media choice. For example, even in aspects where it would be appropriate to obtain information from books, the high web using group tends to select the web. Information about these students' tendencies is useful as meta-cognitive knowledge.

KEYWORDS

Media Literacy, Decision Making of Media choice, Meta-cognitive knowledge, AHP, Visualization

1. INTRODUCTION

In recent years, the development of Media Literacy, i.e. the ability to make judgments about the reliability, bias and accuracy of information, has been considered to be a crucial factor in media education (DCMS2001, Buckingham 2003, Buckingham 1998). The OECD (2009) emphasizes the importance of bringing critical reading skills to bear on electronic texts. Students use various types of media in the classroom, at home and in their own rooms, such as TV, books, newspapers and the Internet(Hashimoto,2011;Hashimoto et al 2011). Each type of media has its own particular characteristics, and an understanding of media characteristics is an important factor in media literacy. For example, let us consider the massive earthquake in Japan on March 11, 2011. Many different types of media provided a wide variety of information about the danger of the tsunami and the situation in the nuclear power station at Fukushima. Some people believed false information provided by Internet.

We were once again made aware of how important it is to gather information based on an understanding of the characteristics of different types of media. Sakamoto (1986) pointed out that critical viewing skills and an understanding of the characteristics of different media are the major constituents of media literacy. The DCMS (2001) emphasized the importance of being able to explain one's reasons for using a particular type of media on the basis of one's understanding of the characteristics of that type of media.

In this study the author focuses on decision-making in media choice. In our daily life we have to select various kinds of media, such as television, books, newspapers, magazines and Internet. The author used the Analytic Hierarchy Process (AHP) as a tool for simulating students' decision-making in their use of media. AHP is a structured technique for organizing and analyzing complex decisions. Using AHP, students have to define appropriate criteria and priorities for using media.

However, it became clear that there is a great deal of difference among individuals when it comes to decision-making in media choice(Gotoh,2012a;2012b;2013,2014). It was discovered that some students prioritize ease-of-use and do not prioritize accuracy in the context of obtaining information to write a report. Some students prioritize the Internet and do not prioritize books in the same context. This trend could even be called extreme in the case of certain students. The frequency of media use in daily life seems to be an influential factor. Research into media preconceptions showed that experience of media use affects preconceptions about media. For example, students at schools that are not connected to the Internet feel that

watching television is easy and using the Internet is hard, whereas students at schools that are connected to the Internet feel that both watching television and using the Internet are easy. A lack of use of specific media, such as little reading experience, seems to affect students' decision-making in media choice. Studies have been done on the relationship between experience of media utilization and preconceptions about media. However, the effects of frequency of media use on decision-making in media choice are unknown.

2. PURPOSE

The purpose of this study is to use the Analytic Hierarchy Process in order to identify how frequency of media use in daily life affects decision-making in media choice.

3. METHODS

3.1 Analytic Hierarchy Process

276 university students (pre service teacher education, physical therapy, nursing, nutrition, social welfare) took part in this research, They were asked to prioritize their ways of obtaining information about current affairs using sets of media such as TV, books, newspapers, webpages, Twitter and Facebook. Fig.1 shows AHP hierarchy.

- Objective: to identify the ideal balance in the use of different media in order to obtain information about current affairs for business and study.
- Criteria: accuracy, timeliness, enjoyment, ease-of-use and search function.
- Alternatives: TV, books, newspapers, webpages, Magazines.

Esumi Excel Conjoint Analysis/AHP Ver. 1 was used as the analysis tool. Students were asked to reply to questionnaires and the paired comparison method was used. The visualization of media characteristics can display not only average entire samples but also individual students. Students were asked to write reflective reports as they viewed their individual visualizations. Overall tendencies and some individual cases are examined on the basis of these data.
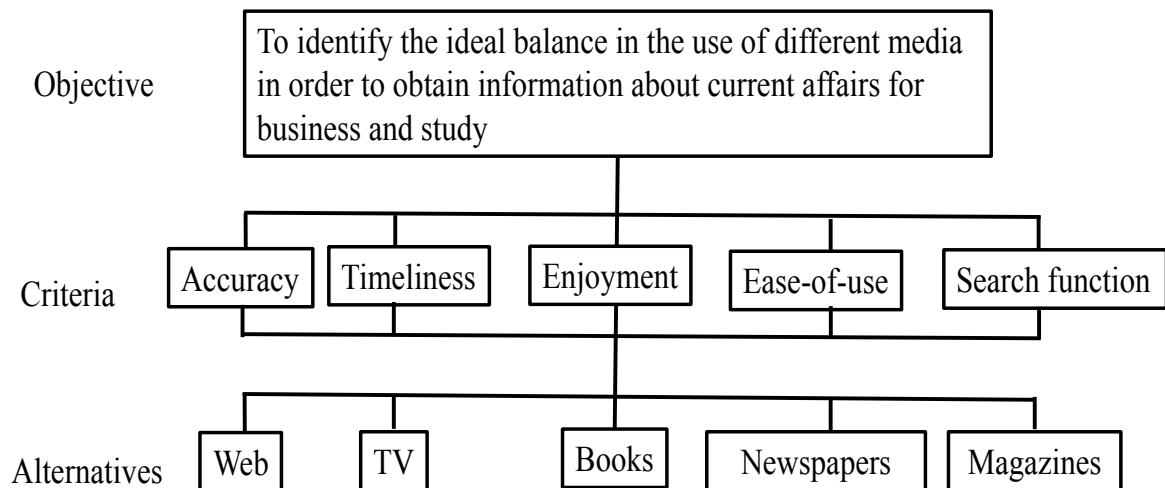

Figure 1. AHP hierarchy

3.2 Frequency of Media Use in Daily Life

Items were developed by referring to the NHK Broadcasting Culture Research Institute and to research conducted by the University of Tokyo.

- Reading books 1: never, 2: 1 or 2 books per month, 3: 3 to 5 books per month, 4: 6 books or more per month.
- Using web 1: never, 2: about 10 minutes per day, 3: 11 to 30 minutes per day, 4: 31 to 60 minutes per day, 5:1 hour or more per day.
- Watching TV 1: never, 2: about 30 minutes per day, 3: 31 to 59 minutes per day, 4: 1 hour to 3 hours per day, 5: 3 hours or more per day.
- Reading newspapers 1: never, 2: about 5 minutes per day, 3: 6 to 15 minutes per day, 4: 16 to 30 minutes per day, 5: 30 minutes or more per day.
- Reading magazines 1: never, 2: 1 or 2 magazines per month, 3: 3 to 5 magazines per month, 4: 6 magazines or more per month.

3.3 Analysis

Spearman's rank correlation coefficient was used in order to analyze the part played by frequency of media use for each type of media. To identify how frequency of media use in daily life affects decision-making in media choice, the sample in each type of media was divided into two groups, a high-frequency group and a low-frequency group. The priority of accuracy, timeliness, enjoyment, ease-of-use and search function for each type of media was totaled and used as the score for decision-making in media choice. Multiple regression analysis was used to determine the association between frequency of media utilization in daily life and decision-making in media choice.

4. METHODS

4.1 Frequency of Media Use

On the basis of the data, the entire sample was divided into two groups for each type of media. Reading books: never (62.5%) is taken as the low group, and the rest are taken as the high group for reding books. Using web: 31 to 60 minutes per day (15.5%) and 1 hour or more per day (40.1%) are taken as the high group and the rest as the low group for using web. Watching TV: 1 hour to 3 hours per day (16.6%) and 3 hours or more per day (43%) are taken as the high group and the rest as the low group for watching TV. Reading newspapers: Never (80.5%) is taken as the low group and the rest as the high group for reading newspapers. Reading magazines: Never (49.1%) is taken as the low group and the rest as the high group for reading magazines.

Spearman's rank correlation coefficient was calculated in order to view the part played by frequency of media use for each type of media(See Table 1). Statistically significant positive correlations were shown between reading books and using the web, and reading books and reading newspapers. Statistically significant negative correlations were shown between reading books and watching TV, using the web and watching TV, reading newspapers and reading magazines, and watching TV and reading magazines. The rank correlation coefficient among predictor variables is not particularly high, and there is no problem of multi-collinearity.

Table 1. Correlation coefficient between frequency of media use

	Reading books	Using web	Watching TV	Reading newspapers	Reading magazines
Reading books	1	.164**	-.208**	.142*	
Using web		1	-.151**		
Watching TV			1		.161**
Reading newspapers				1	.115*
Reading magazines					1

**p<.01, * p<.05

4.2 Decision-Making in Media Choice

C.I. (consistency index) of all samples are as follows: criteria (0.003), accuracy(0.0025) , timeliness(0.025), enjoyment (0.0052), ease-of-use (0.0136) and search function(0.0024). Each C.I. is lower than 0.15, hence there is no problem of internal consistency.

Concerning criteria, in all samples, the top priority is accuracy （0.358）, followed by ease-of-use (0.185), search function (0.184), timeliness (0.128) and enjoyment (0.144). Concerning alternatives, in all samples, the top priority is using the web (0.293), followed by watching TV (0.227), reading newspapers (0.199), reading books (0.154) and reading magazines （0.125）. These tendencies are similar to the results of previous research （Gotoh2012a, 2012b）.
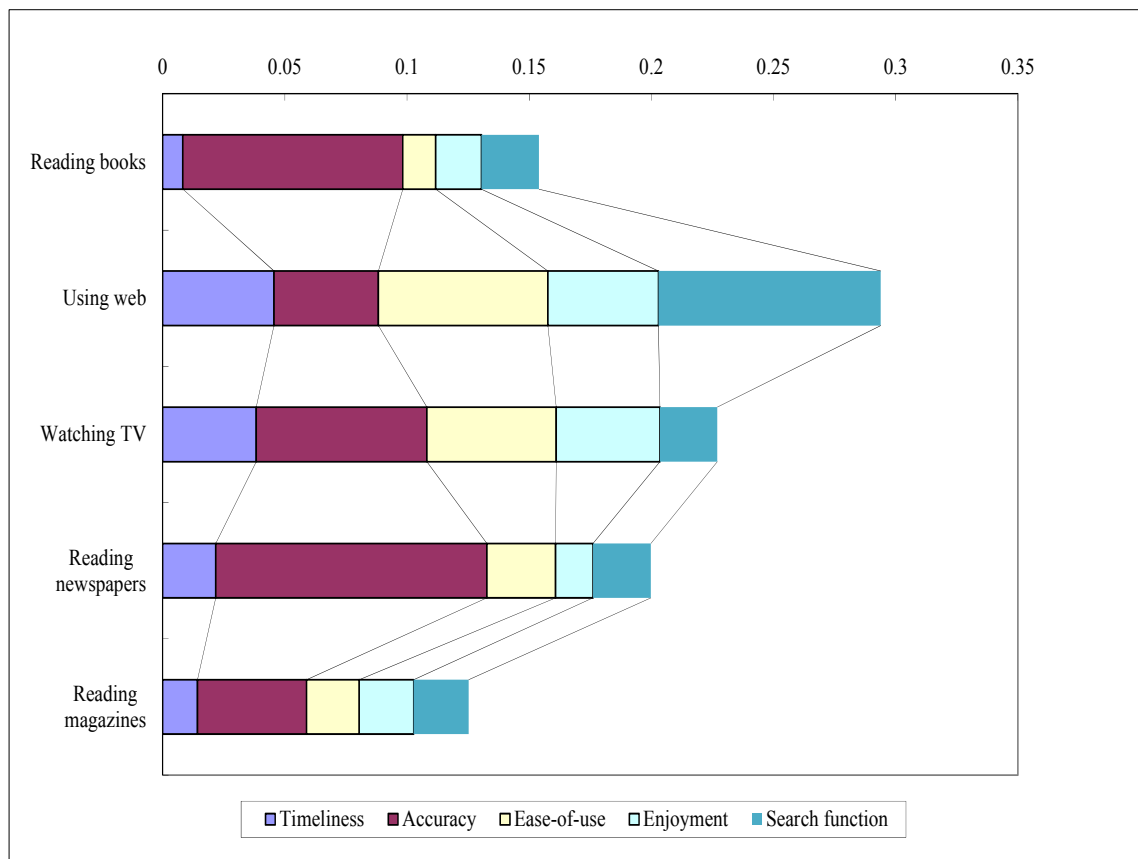

Figure 2. Decision-making in media choice (All samples)

The table2 shows the correlation coefficient between criteria. Statistically significant negative correlations were shown between accuracy and ease-of-use, accuracy and timeliness, accuracy and enjoyment, accuracy and search function, timeliness and ease-of-use, timeliness and enjoyment, ease-of-use and enjoyment, and enjoyment and timeliness. These tendencies are also similar to the results of previous research（Gotoh2012a, 2012b).

Table 2. Correlation coefficient between criteria

	Accuracy	Timeliness	Ease-of-use	Enjoyment	Search function
Accuracy	1	-.263**	-.372**	-.461**	-.473**
Timeliness		1	-.150 **	-.187**	
Ease-of-use			1	-.165**	
Enjoyment				1	-.131*
Search function					1

**p<.01, * p<.05

4.3 Relationship between Frequency of Media Use in Daily Life and Decision- Making in Media Choice

The table shows the results of multiple regression analysis and partial regression coefficient (β). Forced entry was used. The high group in reading books gives priority to reading books. The high group in using the web gives priority to using the web. The high group in watching TV gives priority to watching TV. The high group in reading magazines give priority to reading magazines. To summarize, students tend to select familiar media even in an information- gathering situation in order to write an academic report.

Table 3. Results of multiple regression analysis and partial regression coefficient (β)

	Books	*Web*	*TV*	*Magazine*	*Newspaper*
Reading books	.301***	-.031	-.268***	-.003	.055
Using web	-.064	.267***	-.11+	-.124*	-.069
Watching TV	-.108+	-.074	.227***	-.020	-.068
Reading magazines	-.221***	-.057	.080	.230***	.070
Reading newspapers	-.221	.043	.061	-.122*	.006
R^2	.178***	.085**	.197+	.075**	.013

+p<.10, * p<.05, ** p<.01, *** p<.001

5. DISCUSSION

Multiple regression analysis showed a clear relationship between frequency of media use in daily life and decision- making in media choice. It was suggested that frequency of media use in daily life affects decision-making in media choice. For example, even in aspects where it would be appropriate to obtain information from books, the high web using group tends to select the web.

Information about these students' tendencies is useful as meta-cognitive knowledge. Students use various types of media in the classroom, at home and in their own rooms in digital era. He or she will choose media without awareness. Meta-cognitive knowledge is useful appropriate media choice and reflection. Students should be aware of their media use tendencies and select the appropriate type of media without regard to frequency of media use (Gotoh,Ikuta & kurokami, 2009). Visualization of daily media utilization is also helpful. For instance, the media diary method, where frequency of media use is recorded and visualized, is helpful.

In the near future, the author wishes to develop a method which can provide meta-cognitive knowledge about frequency of media use in daily life.

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