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The Relationships between Personal Traits and Information Morals Consciousness

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Abstract: This study discusses a relationship between personal traits affecting behavioral determinants and information morals consciousness based on the results obtained from a series of our studies. We created a hypothetical causal model about information morals consciousness and personal traits (self-esteem, abilities of understanding others, self-efficacy, social self-regulation) and, using a structural equation modeling analysis, inspected the validity of our hypothetical model. Subjects were 89 university students. As we expected, the results indicated personal traits influenced the formation of information morals consciousness. The above results suggest that teachers should use the instructional strategy appropriately and selectively by the learners' personal traits in information education.
Keywords: information morals, personal traits, structural equation modeling analysis

1. Background

There has been much discussion about how to acquire information morals in Japan during the last two decades. Lacking information moral consciousness might be the cause of some of the serious problems in our society. One example of this is cyberbullying (Harada, 2013). There are children among the victims of cyberbullying who refuse to go to school. Another example is evidence of interpersonal troubles in Social Networking Service (SNS). There are cases of people who fly into a rage upon reading content written on the web and retaliate in terrible ways in the real world. These problems have life-altering impacts. Therefore, it is necessary to explore information morals and how they are acquired, especially in the field of education. Ministry of Education, Culture, Sports, Science and Technology (MEXT) (2008) defines information morals as "a way of thinking and attitude to lay groundwork to carry out an appropriate activity in an information-oriented society." Because of the need for information morals education, we developed a whole instructional activity, including a class for ethical training, starting with an elementary school stage. A Course of Study, comprised of three components, provides instruction on information morals education. The first component is to teach the learner to consider his or her influences on others and take responsibility for his or her actions in our information-oriented society, in deference to such individual rights as human rights and the rights of intellectual property. The second component is to teach the learner to use such information as dangerous evasion in Internet use definitively and safely. The third component teaches the learner to understand the health implications of using such information terminals as computers, tablets, and mobile phones, including smart phones. These components are abridged as follows: "Respecting the Rights of Individuals," "A Safe Use of Information," and "Health Maintenance." MEXT is working to promote information morals education in each school by disseminating this curriculum.

Instruction methods to acquire information morals consciousness have been developed. The standardized methods of information morals education are classified into two categories according to the characteristics of the instruction content criteria (Tamada & Matsuda, 2004). The first is the "knowledge overemphasis type," because the evaluation is determined by whether learners acquire the knowledge. The second is the "rule-oriented type," because the contents tend to teach workarounds in a one-sided manner.

The question remains whether these instructional methods work toward the aims of a class for ethical training. Certainly, these methods promote constant knowledge and understanding for a limited topic. By contrast, Ishihara (2011) pointed out that coping with the troubles that communication technology innovation cause has become difficult. Therefore, we claim that a new frame (unlike knowledge and rules) to capture information morals education is necessary. Based on social constructionism, some researchers have established a position that the learner's viewpoint, such as their cognition and personal traits, is important to consider. For instance, Miyagawa & Moriyama (2011) investigated the relationship between moral consciousness raised in a class for ethical training and information morals consciousness. It became clear that such autonomous consciousness as "justice" and "moderation" affected information morals consciousness formation.

Attracting much attention in the field of the morality psychology, moral judgment processes became clear. In one of the models, Haidt (2001) submitted "The Social Intuitionist Model of Moral Judgment," which shows that when there is an event where a moral judgment is necessary, intuition (including an emotion reaction) is used and a person thinks to maintain the intuition. In other words, a person's cognition and emotion has a complex influence on a moral judgment. However, the relationship between the multiple effects of personal traits and information morals has been little investigated. We conducted this study in order to verify the multiple effects on learners' personal traits about information morals formation. The next section introduces a series of our previous studies.

2. Previous Research

It is clear that personal traits affect the whole information morals consciousness. From a viewpoint of this moral judgment process, Emotion Regulation was selected (Bando et al, 2014). Emotion Regulation is defined by Matsumoto (2006) as "the ability to manage and modify one's emotional reactions to achieve goal-directed outcomes." For our survey, J-WLEIS (Toyota & Yamamoto, 2011), a Japanese version of the WLEIS (Wong & Law, 2002), was prepared. This scale consists of four subscales: Self-Emotions Appraisal, Other-Emotions Appraisal, Use of Emotion, and Regulation of Emotion. A result of the Other- Emotions Appraisal revealed that there is an influence of mental mechanisms to control one's own social relations with others. Correspondingly, Use of Emotion revealed that there is an influence of mental mechanisms to get conviction from accomplishment. Based on this research, we investigated the relationship of personal traits affecting each of the concrete contents of information morals education added to a new course of study.

The first survey looked at information morals consciousness about "Respecting the Rights of Individuals" (Bando, Ichihara & Moriyama, 2014). It is necessary to perform self-regulation that is careful about the relationships between individuals connected in a network. From this approach, it is important to focus on the personal traits to try to improve the relationship between and among people in connection with information activities included in Computer Mediated Communication (CMC). In recent years, the importance of self-esteem is pointed out as one of the factors related to self-regulation in human relations. Self-esteem can be defined as how much value people place on themselves. Sociometer Theory posits self-esteem has a function to monitor relational value (Leary & Downs, 1995). A person with low self-esteem is motivated to behave so that a relationship evaluation does not decrease. In this light, there is a possibility that self-esteem level affects the information morals consciousness formation. In comparison with communication by meeting directly, CMC includes less non-verbal information. With CMC, it is difficult to guess a thought, intention, or feeling of the partner, as such non-verbal prompts as facial expression and tone of voice are missing. Judging from this, it is probable that the ability to understand another person plays an important role, and the Sociometer system helps to judge properly from limited information. As predicted, those who have low self-esteem and a high ability of understanding another person gain a higher level of information morals consciousness about "Respecting the Rights of Individuals."

The second survey involves information morals consciousness about "A Safe Use of Information" (Bando & Moriyama, 2015). Because dangers and crimes in information activities are often brought on at the individual and group levels, self-regulation in the social scene is demanded. The self-regulation in a social scene is called social self-regulation, which is defined by Harada et al

(2008) as "the ability to inhibit or to assert the self, depending on internal and external needs in a social setting, when there is discrepancy between desire, intention, and current perception." When information morals consciousness about "the safe use of the information" is pursued, the person who has high social self-regulation can recognize the gap between society and the present conditions, and choose an appropriate action. As we expected, the main effect of social self-regulation was observed. It has followed that those who have high social self-regulation are at a higher level of information morals consciousness about "a safe use of information."

Finally, the third survey dealt with information morals consciousness about "Health Maintenance" (Bando et al, in printing). The two kinds of concepts in "Health Maintenance" are physical and mental. Coping with physical fatigue and Internet dependence are included in mental health maintenance. It can be said that personal traits motivate and autonomously affect the information morals consciousness about health maintenance. One of the autonomous motivation factors is self-efficacy. Self-efficacy can be defined as "refer to beliefs in one's capabilities to organize and execute the courses of action required to manage prospective situations" (Bandura, 1995). It can be presumed from the way high self-efficacy stimulates a person that a person who has a self-efficacy higher than certain level can perform an appropriate action. As a result, self-efficacy is observed as a main factor in promoting information morals consciousness about "Health Maintenance."

These findings clearly show that personal traits have multiple effects on information morals formation. Therefore, based on these findings, we developed a hypothetical causal model about information morals consciousness and personal traits (self-esteem, understanding others, self-efficacy, social self-regulation) and then, using a structural equation modeling analysis, inspected its validity. The hypotheses of this study are as follows:

H_1: Self-esteem and the ability of understanding other people affect "Respecting the Rights of Individuals"

H_2: Social self-regulation affects "The Safe Use of Information"

H_3: Self-efficacy affects "Health Maintenance"

3. Methods

3.1 Participants

The participants of this study consisted of 89 graduate students from a university in the Kyusyu region (36 males and 53 females, validity rate: 94.7%). All participants owned at least one or more portable information terminals such as a mobile phone, a smart phone, a laptop computer or a tablet.

3.2 Instruments

The questionnaire used for this research consists of two parts. The first part asks demographics information (for example, gender, ownership of mobile information terminal, etc.). The second part consists of five questionnaires.

The consciousness of Information Morals Scale (IMS) consists of twenty items (Miyagawa & Moriyama, 2011). This scale is comprised of six domains including F1: Personal information protection awareness, F2: Prevention of unjust copying awareness, F3: Copyright protection awareness, F4: Dangerous evasion awareness, F5: Prevention of crime awareness, and F6: Health maintenance awareness. In addition, we prepared Internet Dependence (ID) as mental "health maintenance" (Kawai et al, 2011). This scale consists of eight items. Furthermore, the six factors of IMS and ID are arranged in the concrete instruction manner of three information morals listed in a course of study (Table 2). Each item was measured on a five-point Likert-type scale with 1 (strongly disagree) to 5 (strongly agree).

For assessing self-esteem, a Japanese version of the Rosenberg self-esteem scale (SE) was used. It consists of ten items (Yamamoto et al, 1982). Each item was measured on a five-point Likert-type scale with 1 (strongly disagree) to 5 (strongly agree). For assessing self-efficacy, a general self-efficacy scale (SEF) consisting of sixteen items was used (Sakano & Tohjoh, 1986). Three factors

compose this SEF, including SEF-f1: Activeness in behavior; SEF-f2: Anxiety on failure (a high SEF-f2 score expressed that feeling anxiety on failure is low); and SEF-f3: Social locus of ability. Each item was measured on a two-point scale with 0 (no) and 1 (yes). For assessing self-regulation, the social self-regulation scale (SSR) used consists of three factors, including SSR-f1: self-assertiveness; SSR-f2: patience; and SSR-f3, emotion and desire suppression (Harada et al, 2008). Each item was measured on a five-point Likert-type scale with 1 (strongly disagree) to 5 (strongly agree). For assessing the ability of understanding other people (UO), we prepared a part-of-communication scale (Enomoto, 2006). All of three items were measured on a five-point Likert-type scale with 1 (strongly disagree) to 5 (strongly agree).

Table 2: The structure of information morals consciousness in this research

Concrete contents in information morals education		Factor
Content1(C1)	Respecting the Rights of Individuals	F2, F5 ,F6
Content 2(C2)	A Safe Use of Information	F1, F4
Content 3(C3)	Health Maintenance	F3, ID

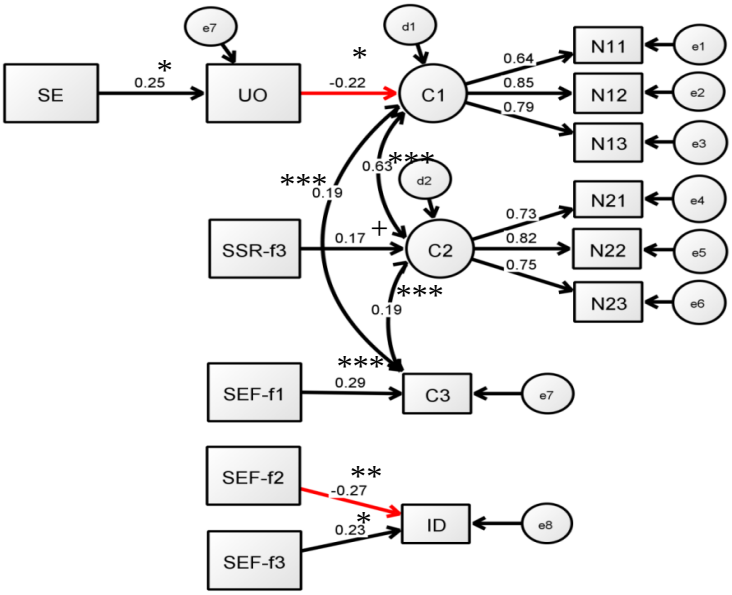
4. Results and Discussion

From what the findings of our previous studies suggested, we configured a hypothetical causal model. We can assume causation with the information morals factors from each personal trait factor because "personal traits affect the information morals consciousness." The results of the structural equation modeling analysis using this hypothesis causal model are shown in Figure 1. The list of variables used in the structural equation modeling analysis is shown in Table 3. For creating a fitting model, technique of parceling to make an observation variable was chosen (Kano, 2009). Only C3 of IMS is an observed variable because it depends on two reasons. The first reason is that it was handled in the same way in a previous study. The second reason is that parceling is not usable or C3 because it has only three items. Regarding the model fit, Hu and Bentler (1999) suggested a need to report a combination of two indices specifically in order for the test model to fit. Therefore, we chose the combination of RMSEA and SRMR (Table 4). In addition, because there are a low number of participants, the chi-square score is reported for reference (Hooper, Coughlan & Mullen, 2008). These indices are almost enough to show a good model fitting. All pass coefficients shown in this model are significant statistically. Judging from these things comprehensively, it was decided to employ this model of presenting relationships between personal traits and information morals consciousness.

This study found that SEF was significant in affecting C3 (SEF-f1: β=.29, p<.001) and ID (SEF-f2: β=-.27, p<.01; SEF-f3: β=.23, p<.05). It is evident from this finding that activeness in behavior of the action influences physical health maintenance. On the other hand, in mental health maintenance, there are the contrary negative and positive effects. In this respect, it can be presumed that those who feel anxiety on failure less are motivated to evade an unhealthy state that is Internet-dependent. In contrast, those who have a high social locus of ability are high ID. It is possible that they tend to look for the information checked as a meaningful existence for a long time (as long so as to be considered depending on the Internet), because they keep a high evaluation of themselves. These findings suggest that it is important that learners raise self-efficacy at the same time as they acquire information morals consciousness.

According to C2, only SSR-f3 (SSR-f3: β=.17, p<.1) is found marginally significant. This is agreeable in that regulation of emotion affects information morals consciousness. An intuition including emotion is the first stage of a moral judgment process. It is critical to develop SSR (especially f3: emotion and desire suppression) so as not to lead to a serious result caused by drastic judgment.

Finally, it has followed that SE (β=.25, p<.05) has a significant positive effect on UO, and UO (β=-.22, p<.05) has a significant negative effect on C1. High self-esteem influences the ability of



+ p<.1, * p<.05, **p<.01, ***p<.001

Figure 1. Result of structural equation modeling analysis

Table 4: Fit indices for the research model

Fit Indices	Values	Acceptable Threshold Levels
χ^2/df	80.08 (p=0.11)	p>.05
SRMR	0.09	≦0.09
RMSEA	0.05	≦.0.06

Hu & Bentler (1999), Hooper et al (2008)

understanding others, but increasing the ability of understanding others was shown to have a negative influence on the information morals formation finally. One interpretation of this finding is as follows: the more people understand a partner, the more they become inconsiderate of the partner. A different interpretation is that they have the thought that a partner takes good care of them, even if they do not pay attention to the partner. It should be noted that the feeling of the addressee is different from the subjectivity of a sender. It is probable that it becomes difficult to consider the rights of individuals when making a partner feel sad and unpleasant, for example, because this gap occurs. From these findings, it is important to develop self-esteem and ability of understanding others so that each other's understanding deepens. In addition, it is suggested that a learner should develop the ability to restore relations after having understood the disagreement in the field of education.

5. Conclusion

There is no doubt that such personal traits as self-esteem, the ability of understanding other people, social self-regulation, and self-efficacy can be seen as strong predictors of information morals consciousness formation. In information morals education, it is necessary to acquire knowledge about information morals and develop personal traits at the same time. A further study of obtaining greater details of information morals formation processes should be conducted by extending the study to include more participants and looking at how the changes of relationships between information morals consciousness and personal traits affect elementary, junior high, high school and university students.

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