

(A) Study on the Development of a Class Model of Computer Ethics Based on TPB

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Abstract: Because of the development of information and communications technology, Computer-Ethics education, which is desperately needed emphasizes only necessity, but the real education in school has simply the adverse effect and has fragmentary education to deal with it. For the result, students have a gap between perception and action by not reaching the purpose of Computer-Ethics education which can have a change on the values and attitude. For it, our research with middle school students' information judges what is right or wrong, but by considering the theoretical basis which can explain the reason of inactive Computer-Ethics action, we try to develop the class model for the class. Therefore, we consider planned behavior theory and study Computer-Ethics class model development by deriving the strategy which reinforces the power of the practice of the incomplete actions in the theory that we know but have not been done.

Keywords: Information Ethics, Theory of Planned Behavior, Class Model Development

Introduction

Increasing use of information and communication technologies (ICTs) help individuals to solve several everyday problems. Even though ICTs provide individuals with many advantages, they might also serve as grounds for several societal and ethical problems that include easily accessible filthy and violent media, identity theft, copyright infringement, Internet addiction, etc [1]. However, the most serious problem is that these reverse functions have a negative influence on the middle school students whose identities are not fully established. In fact, according to a survey on the Internet addiction actual condition by National Information Society Agency (NIA) released in 2008, it has shown that the Computer Ethic Behavior (CEB) has yet to catch up with the high level of the Computer Ethic Awareness (CEA) [2]. This is because a fundamental work not only to clarify the reason why inappropriate conducts are done but also to apply to the teaching methods of CE hasn't been carried out in most previous researches and studies despite relating inappropriate behaviors of students related to CE and uncontrollable conducts that students realize results of their own behavior of themselves but cannot control [3]. Therefore in this paper, we would like to present a concrete teaching program to achieve a goal of CE education by developing CE teaching model based on TPB to improve computer ethical behaviors that have yet to catch up with the high level of the Computer Ethic Awareness (CEA).

1. Literature Review

1.1 What's Computer Ethic (CE)

The CE can be defined as a yardstick that can be used to handle ethical issues in information-oriented societies; It defines the basic moral standards-right and wrong, good and evil, and moral and immoral-to attain the most desirable behavior while living in and information-oriented society as well as handling computer and communication devices [4].

1.2 The Four basic principles of CE

In this research, the scope and contents of the CE is classified into four categories as shown below [5].

Table 1: The Principles and Fundamental Concept of the CE

Principles	Fundamental concept
Moderation	Considering current situation, properly control one's behavior based on the decision criteria – what's right and wrong, and what's good and bad.
Respect	Value and admire others as well as oneself; regard others as human beings with dignity by caring for their identity and cherishing their self-esteem.
Responsibility	Predict the outcome of one's behavior onto others and be liable for possible loss and/or sanctions from it.
Participation	As an independent information user, offer help to others while abiding by the responsibility and eager participation. Also create / present valuable information and vigorously contribute to various cyber activities.

1.3 Theory of Planned Behavior (TPB)

The TPB is an extension of Ajzen and Fishbein's theory of reasoned action (TRA). The TRA identifies 3 key constructs that influence behavior: intention, attitudes, and subjective norms. According to the TRA, intention reflects motivation to perform the behavior and is the most proximal determinant of whether the behavior will be performed. Attitude represents the positive or negative evaluation of the target behavior, whereas subjective norms reflect the perceived social pressures to perform the behavior. The theory posits that people are more likely to intend to perform a behavior if they evaluate it positively and believe that other important people think they should perform it. However, the caveat for the TRA is that it is limited to volitional behaviors, exempting any external factors that may be or are perceived to be beyond the control of an individual. The TPB addresses this issue with the inclusion of the perceived behavioral control variable. Perceived behavioral control represents the beliefs that an individual has about the presence of factors that may enable or hinder his or her performance of the behavior and about the perceived degree of control he or she has over these factors, exerting both direct effects on behavior as well as on behavioral intentions [6]. Figure 1 shows the TPB model.

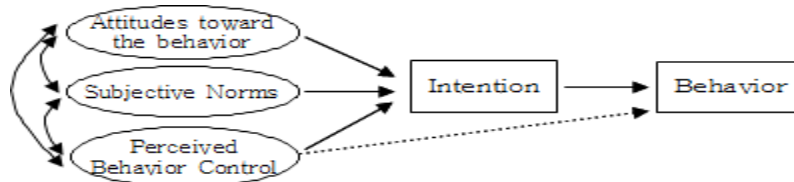


Figure 1: Theory of Planned Behavior Model

2. Methodology

2.1 The Process of Class Model Development

Search various class model development method theories and establish the level of class model development for the systematic and concrete class. Most of the processes of class model development are rectilinearly connected with the minor steps, such as analysis, design, development, implementation, evaluation, and have evaluation, modify steps after implementation. However, the Dick & Carey Model [7] follows the same steps as shown below but tends to have a more flexible and streamlined structure.

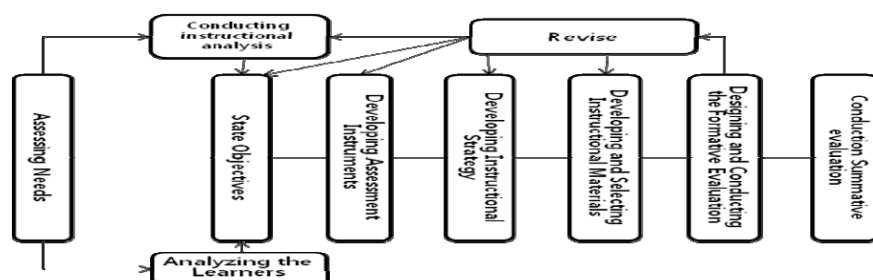


Figure 2: Dick & Carey Model

2.2 Extraction of the Teaching Strategies based on TPB

Extract concrete class strategies and activities of Computer-Ethics class model by searching the theory on the reason why students have computer ethical or unethical behaviors. First, to do an action, the purpose of the strategy of the attitude on an action for improving the power of execution is to have a positive mind. To do so, first of all, people should have confidence what certain result will generate if they do an action for a certain goal, and should give the value of the result. Second, the purpose of subjective norms for improving the execution is to have high norms. To do so, people have to realize that someone, who is very important to you, support the action for certain goal, and should have mind that people try to meet their expectation. Third, the strategy of perceptive behavioral control for improving execution is to have high behavioral control. To do so, by supporting the technique or information for the target action, they can practice and have confidence in their actions.

3. Summary and Results

Because of the development of information and communications technology, computer ethics education is desperately needed. However, our analysis has found the result that the education in school emphasizes recognition itself without any certain and clear class program, and schools do not have any class model about what the action will basically generate. Therefore, on this research, based on the reason of ethical action, we expect that we can reach the purpose of basic Computer-Ethics education which we can fix and complete depending on situations in the middle of the process in the field. However, our research has the limitation that we cannot earn the effect by applying the class model to the field which is for improvement of sense of Computer-Ethics. On follow-up research, we have to reach the point that we can verify the effect with the model by the process of application and modification.

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