

EFFECT OF SELF-WORTH AND PARENTING STYLE ON THE PLANNED BEHAVIOR IN AN ONLINE MORAL GAME

Jon-Chao HONG,
Department of Industrial Education
National Taiwan Normal University
tcdahong@gmail.com

Ming-Yueh HWANG
Department of Adult & Continuing Education
National Taiwan Normal University
t06013@ntnu.edu.tw

Chun-Kai WANG
Department of Industrial Education
National Taiwan Normal University
allen7310@yahoo.com.tw

Tsui-Fang HSU
Department of Industrial Education
National Taiwan Normal University
tsuifang@hotmail.com

Yu-Ju CHEN
Department of Industrial Education
National Taiwan Normal University
luludapipi@gmail.com

Chiung-Hua, CHAN
Department of Industrial Education
National Taiwan Normal University

ABSTRACT

This idea of integrating moral education to digital gaming platform had been discussed since digital and online approaches were used in teaching. Online interactive instruction was one of moral teaching forms to assist moral instruction. However, most moral-related interactive online games lacked functions for players to explore themselves while game playing, that resulted in less participation in deeper learning and decrease understanding of moral values. Therefore, we, digital game-based learning lab of National Taiwan Normal University, developed the interactive moral online game, named 'To do or not to do', to help students explore and establish appropriate moral values. Results of Partial Least Squares (PLS) analyses indicated that behavioral intention was significantly influenced by behavioral control, self-worth, attitude toward the game, subjective norm and parenting style.

Keywords: self-worth, parenting style, theory of planned behavior, game-based learning, e-learning

INTRODUCTION

Based upon previous studies (e.g. Apple, 1989, 1993; Giroux, 1983a; Gordon, 1991), Yuksel (2005) reported that there are two sorts of curricula in schools; first type refers to 'official curriculum' which consisted of well-written objective, goals and activities; the second type is 'hidden curriculum' which conveys rules, values and implied messages teachers pass to students. According to Yuksel (2005), Kohlberg, the educators and the first researcher, focused on hidden curriculum in moral education. Kohlberg believed that both formal and hidden curriculum provide a ground for the moral development of students. Students experience resolution of ethical conflicts or dilemmas which lead them to the next moral stage. The course of moral development is from a simpler idea to a more complex idea, it is a progressive development.

The internalized value has been placed an important role in children's moral decisions in different domains (Costanzo & Fraenkel, 1987). However, students are taught with values that they are demanded to learn through class lectures. Earlier study done by Pounds (1969) stated that problem solving as "choosing a model, comparing it to reality, identifying differences, selecting a difference, considering operators, evaluating consequences of operators, selecting an operator, and executing an operator"; and transforming a given situation into a desired situation or goal (Hayes, 1989). For the purpose of the study, research participants were put in a moral dilemma

which can be seen as a way of presenting problem, exploring the appropriateness of moral for an individual or a group to deal with values relating to human conduct, with respect to the rightness and wrongness of certain actions.

With concerns about the rapid increase in the incidence of misbehavior in elementary schools, researchers have turned their attention to ways parenting dimensions affect children's moral education. Past researchers had demonstrated that parents influenced children's development of cognitive belief structure (Glasgow, Dornbusch, Troyer, Steinberg, & Ritter, 1997). With the structure children possessed, they conduct their behavior and then form characteristics of themselves and others (Grusec, Goodnow, & Kuczynski, 2000). Therefore, the examination of parenting style on children's ways of thinking in a situated game which consequences-based normative moral problem-solving technique (Hooker, 1996; Lucas, 2000a) was embedded might be helpful to better understand children's insights.

Currently educators face challenge to strike a balance to the moral development of students and the academic achievement of students. How could teachers prepare students not only actively participate in the environment but also make their own choice with justness, and accuracy? How could we develop a program or a curriculum of moral education that encompass the universal morality for use in both school and family?

For the purpose of the study, an online moral game was developed to provide moral-related situations relate to students' life, and question them with different situations and events enabling them to think creatively and critically, test their tolerance, honesty, and problem-solving tendencies. We examine the relationships among self-worth, parenting style and the planned behavior by using this online moral game.

Theoretical Framework

Moral development

For researching whether moral reasoning develops in a predictable sequence, Kohlberg (1981, 1984) provided research participants with 'hypothetical dilemmas' that often put the value of life against the value of someone's life, or put the value of one individual's life against the value of several people's lives. Kohlberg concluded that moral reasoning occurs in a sequence of three levels. Each level includes two stages, for a total of six. According to Kohlberg, every child starts out at the pre-conventional level, reasoning strictly in terms of ego-centered considerations. The child initially focuses on avoidance of punishment and obtainment of rewards (Stage 1) and then on satisfaction of self-interests (Stage 2). Next follows the conventional level and a shift to group-centered considerations. Here the focus is on adhering to the norms of family and other groups to which one belongs (Stage 3) and maintaining social order (Stage 4). The third post-conventional level goes beyond both the self and one's society—reminiscent of the Piaget adolescent's perspective. Here the emphasis is on democratic procedure and social utility (Stage 5) or universal principles pertaining to justice and individual rights (Stage 6).

Self-worth

Once a person recognizes the self as an individual and separate being, he or she begins to construct a 'self-concept' which refers to how that individual perceives his or her 'self' to be in terms of ability, value, and limitations.. Hater (1990) defined self-concept as an individual's perception of the combination of different aspects of the self and thus it was viewed as a multidimensional construct.

Coopersmith (1967) proposed a construct to assess self-concept by combining an individual's self-evaluation across items of various domains. Crocker, Luhtanen, Cooper and Bouvrette (2003) identified seven Contingencies of Self-Worth Scales (CSWs) including: others' approval, appearance, family support, academic competence, virtue, competition, and God's love. Parental values might lead children to experience domains and use the structure to build and judge the content of their contingencies of self-worth.

Parenting style.

Baumrind (1967) was the first researcher developed the concept of parenting styles which she referred to authoritative, authoritarian, indulgent, and neglectful. Authoritative parents required children to follow their demands, and they recognized the flexibility as well. Authoritarian parents required children to follow their demands, but these parents were not responsive to the children's perspective. Indulgent parents did not require children be responsive to their demands, but they were responsive to the children's perspective. Finally, neglectful parents neither require children be responsive to their demands nor responsive to the children's perspective.

Past study done by Maccoby and Martin (1983) reported that parental warmth, emotional support, appropriate autonomy, and clear communication lead to positive developmental outcomes in children and adolescents.

Moreover, children who are raised in authoritative homes have high scores on social development, mental health, and self-esteem (Baumrind, 1989; 1991; 2005).

Theory of planned behavior.

Theory of Planned Behavior (TPB) was developed to state that one's behavior can be predicted by his or her intention (Ajzen, 1991). TPB focused on that intention affects human behavior, whereas attitude, subjective norm and perceived behavior control affect intention. Attitudes are the feelings of acts for likes or dislikes. Russell and William (2007) defined 'subjective norm' as "the summation of the similar relationship between the strength of one's normative belief about the likelihood that important referent individuals or groups approve or disapprove of performing a given behavior and one's motivation to comply with referents" (p. 1575). And finally, perceived behavioral control can be predicted by the summation of one's control beliefs and one's perceived power the act behavior (Russell & William, 2007). The framework of theory of planned behavior was used in this study to reveal the relationship between game playing intention and other factors, such as, attitudes, subjective norm, behavioral control, and parenting style.

Research Hypotheses

In order to explore the relationships between behavioral intentions, contingencies of self-worth, and parenting style; five major hypotheses were proposed to guide this research.

- H1: Self-worth will correlate with behavioral intention.
- H2: Behavioral control will correlate with behavioral intention.
- H3: Perceived attitude toward the behavior will correlate with behavioral intention.
- H4: Subjective norm will correlate with behavioral intention.
- H5: Parenting style will correlate with behavioral intention.

'To do or not to do' Moral Game Design

Lucas (2000b) indicated that applying complexity thinking to the world around us not only providing a difficulty to us but also giving us many new ways to think about questions and answers to the question, therefore, the hypothetic- deductive- evaluative model (Lucas, 2000a), the consequences-based normative moral problem solving technique (Hooker, 1996; Lucas, 2000a) is utilized for the game design (i.e. What happen-What you choose to do-What will happen next-What you will do next). This educational, interactive game 'To do or not to do' encourage players to consider what else would happen, what you should do, after you do what will happen, and what you will do next and so on. According to Allen (2003), hypothetico-deductivism postulates a theory of the phenomena in question in terms of a set of rules or postulates for obtaining theories, facts are not always observable, but rather by vision, accident or theories. Giving the same picture to two people, may get two different results. Furthermore, the evaluation system created in this game implies the behavior must be correct if the scores are to accord with the moral stages of Kohlberg (1984), otherwise, choice will be changed in next play.

The Model of Decision-Making Incorporating Ethical Values (Fritzsche, 1991) is the first to consider personal values as underlying "precedent of ethical behavior". There are three important parts involving game design. First of all, we consider the model of decision-making behind ethic concept and why we should include values in Part 1 of game designing. By looking at what we actually mean by objectivity, and relate this to the subjective mind that creates such a concept, we develop reductive thinking using appropriate concepts to then show that ultimately 'ought' becomes appropriate, allowing players to solve the problem based on normative concepts. In Part 2, we examine what we mean by game scoring and look at what we must do to incorporate the values of Part 1 into the moral game. We outline the hypothetic- deductive-evaluative model (i.e. what happen – what you will do – after you do what will happen- what you will do next after that happen, and so on.) which brings the integrating ideas of complexity thinking into play in order to clarify moral value based upon meta-cognition. Lastly, in Part 3, we consider how we can use a game to make social choices in different situations, and allow us to regard conflicting values and contextual variation within a level of cognitive development.

When considering game scenario design, the problem solving model focused exclusively upon morality by Rest (1986) was adapted. Therefore, four psychological processes must occur prior to moral behavior: (1) interpret situation and create alternative actions; (2) choose alternative based upon considerations; (3) prioritize the moral vale choice above amoral values and associate choice; and (4) intend to act. The game develop the moral reasoning ability by choosing the right 'ought' to the fulfillment of these needs and desires within a self-directing self. This game is free to make the choice from many alternatives while the self is restricted by concerns with inflicting harm on himself or herself, or other individuals, interfering on their rights. Through a developmental lens, we could gain insight into some common patterns for how children and adolescents develop

morally, and into issues of relevance for how children and adolescents define morality as well

To explore whether moral reasoning develops in a predictable sequence, Kohlberg (1981, 1984) provided ‘hypothetical dilemma’ that often put the value of life against the value of one’ life to participants who were involving in his research. Kohlberg concluded that moral reasoning occurs in a sequence of three levels in which each level contained two stages. Kohlberg believed that every child started out at the pre-conventional level in terms of ego-centered considerations. The child focused on avoidance of punishment and obtainment of rewards (Stage 1) and then on satisfaction of self-interests (Stage 2). Then, the child go to group-centered considerations which the norms of family and other groups to which one belongs was focused (Stage 3), and social order was maintained (Stage 4). The third level, post-conventional level, goes beyond both the self and one’s society, the emphasis is on democratic procedure and social utility (Stage 5) or universal principles and individual rights (Stage 6).

METHOD

This study was conducted using a survey research design. The first step of the study design procedure was to develop a set of survey questions regarding self-worth, parenting style, and theory of planned behavior based on the review of document and literature. Second, the initial questionnaire was given to an expert panel to evaluate. Third, the revised pre-test questionnaire was given to the study sample before starting the game. Fourth, the post-test questionnaire was given to participants immediately after the game. Finally, Partial Least Squares (PLS) was used to measure the path relations of hypotheses.

Participants and settings

This study was conducted in four elementary schools in Taipei, Taiwan. The target population was made up of elementary students. The selection process in this study was a challenge, thus, a convenient sampling was used in this study. A total of one hundred and twelve 5th and 6th grade students (60 males and 52 females) from four elementary schools were invited to involve in this study. Their ages were around 10 to 12 years old; they have never played “To do or not to do” before; and most of them knew how to use computer. Each child was assigned a computer for playing the game.

Instrumentations

To develop an appropriate self-report instrument, the questionnaire of this study was derived from literature review, existing document, and other existing questionnaires by other researchers, such as Baumrind (1967), Crocker and Knight (2005), Crocker, Luhtanen, Cooper, and Bouvrett (2003), Lamborn, Mounts, Steinberg, and Dornbusch (1991), Sessa (1992), and Ajzen (1991).

1. Self-worth inventory

The first instrumentation of the questionnaire was a 13-item self-report inventory adapted from the studies of Crocker and Knight (2005), and Crocker et al. (2003). Participants were asked to rate the extent to which they strongly agree or strongly disagree with each item pertaining to beliefs regarding positive self-worth, and negative self-worth, by selecting one of five points on a Likert scale. This five-point scale read 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, and 5=strongly agree.

Positive self-worth questions listed in the questionnaire, such as, Item 1 (When I feel I am attractive, I feel good about myself), Item 2 (Whenever I follow my moral values, self-satisfaction will be increased), and Item 3 (Knowing my academic performance is better than others, I feel good about myself). Negative self-worth questions, such as, Item 4 (Doing something wrong, I feel ashamed), Item 5 (If I can’t follow moral values, I could not respect myself), and Item 6 (If my academic performance is not good as expected, I feel bad about myself).

2. Parenting style inventory

The second instrument, adapted from the study done by Lamborn et al. (1991), and Sessa (1992), was a 3-item self-report measure. Students volunteers were asked to rate their beliefs associated with parenting style. Items are self-rated on a five-point Likert scale where 1 representative strongly restrict, and 5=strongly open.

Parenting style questions were related to parents’ attitude toward buying snacks (Item 14), and attitudes toward helping others voluntarily but causing me in a misunderstanding (Item 15), and attitudes toward caring about others but causing me in a misunderstanding (Item 16).

3. Theory of planned behavior inventory

The third inventory, in the post-post survey, was adapted from the study done by Ajzen (1991). It contained 5

items regarding perceived attitudes toward the behavior, 3 items regarding subjective norm, 3 items regarding behavioral control, and 4 items regarding behavioral intention. Participants were asked to rate these items on a 5-point scale where 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, and 5=strongly agree.

Item examples regarding the theory of planned behavior are provided as follows. Attitudes toward the behavior questions, such as, playing ‘To do or not to do’ make me feel happy. Subjective norm questions, such as, I play ‘To do or not to do’ because teacher’s request. Behavioral intention questions, such as, I will skip my dinner for playing ‘To do or not to do’ at home. And behavioral intention questions, such as, I will play the game all the time or whenever I can when the ‘To do or not to do’ competition is coming.

Procedure

After providing the explanations of the purpose of the study and the instructions of the ‘To do or not to do’ game to the participants, the volunteer student participants completed the self-report pre-test questionnaire regarding self-worth and parenting style before playing the game. All participants were invited to complete the post-test questionnaire associated with the theory of planned behavior such as attitude toward the game, subjective norm, and behavioral intention after playing the game.

DATA ANALYSES

Measurement model

We expected that each component of the pre- and post-test questionnaires except for background information section would make contributions to behavioral intentions. To test this idea, a confirmatory factor analysis was performed to examine the measurement model. The Partial Least Squares (PLS) method, one of Structural Equation Modeling (SEM), was chosen because it presumes no distributional form for measured variables, nor does it posit strong requirement on large sample sizes (Chin, 1998; Chin et al., 1996; Chin et al., 2003). The sample size of 112 was pass the recommended minimum of 40 for model testing (Wixom & Watson, 2001).

Reliability and validity of the survey

To ensure the content validity of the questionnaire, an expert panel including 10 people who are experts in this field was asked to evaluate the initial questionnaire developed based upon previous studies and literature review. The final questionnaire after the evaluation of the expert panel was administrated to study sample.

Beside the evaluation of an expert panel, the reliability and validity of the survey were assessed in several ways. According to Fornell and Larcker (1981), internal consistency can be assured by examining the composite reliability of the constructs; therefore, composite reliability was examined. Furthermore, Cronbach Alpha value was measured as well. Table 1 shows the results of composite reliability and Cronbach alpha values. All composite reliability values in this study ranged from 0.810 to 0.930, surpassing the suggested threshold value of 0.7 (Nunnally, 1978; Hair et al., 1998), though the alpha value was slightly below 0.7 in parenting style section, it is very close to 0.7, and as we will see later in this article, this parenting style section had adequate factor loading (greater than 0.5), therefore, no changes were made in parenting style section. Convergent validity in this study was evaluated by checking whether the factors loadings of each item are significant and greater than 0.5 (Nunnally, 1978). In this study, the factors loadings ranged from 0.51 to 0.91 indicating acceptable convergent validity.

Table 1: Results of composite reliability and Cronbach alpha values

Construct	Composite Reliability	Cronbach Alpha
Negative Self-Worth	0.84	0.78
Positive Self-Worth	0.83	0.74
Parenting style	0.81	0.65
Perceived attitude toward the behavior	0.93	0.91
Subjective Norm	0.89	0.82
Behavioral Control	0.89	0.80
Behavioral Intention	0.84	0.75

Last, to assess the discriminant validity, the square root of AVE of each construct was computed and compared with the correlation between constructs. In Table 2, all square roots of AVE were larger than the correlation coefficients between constructs, indicating that each construct was more closely related to its corresponding measurement items than to those of other constructs. This again supports the discriminant validity of the measures. In summary, the evidence showed good reliability and validity of the survey.

Table 2: Correlation Among Variables and Square Root of AVE

	Negative Self-Worth	Positive Self-Worth	Parenting	Perceived	Norm	Control	Intention
Negative Self-Worth	0.66						
Positive Self-Worth	0.29	0.67					
Parenting	-0.01	-0.01	0.77				
Perceived	0.05	0.10	-0.25	0.85			
Norm	0.05	0.11	0.27	-0.06	0.86		
Control	0.07	0.03	0.31	0.02	0.50	0.85	
Intention	0.17	0.21	0.20	0.40	0.47	0.6	0.75

Structural model.

The test of the hypotheses involved estimation of the structural model’s path coefficients indicating the strength of the relationship between the dependent variable, independent variables, and the R-square values, which indicate the amount of variance explained by the independent variables. The study used the single-tailed t-test, and the criteria were as follows: * $p < .05$, $t > 1.66$; ** $p < .01$, $t > 2.36$; *** $p < .001$, $t > 3.37$. The bootstrap re-sampling procedure was used to examine the stability of the Partial Least Squares (PLS) estimates (Chin, 1998). There were 111 re-samples. The structural model analysis was presented in Figure 1. The results showed all hypotheses were supported.

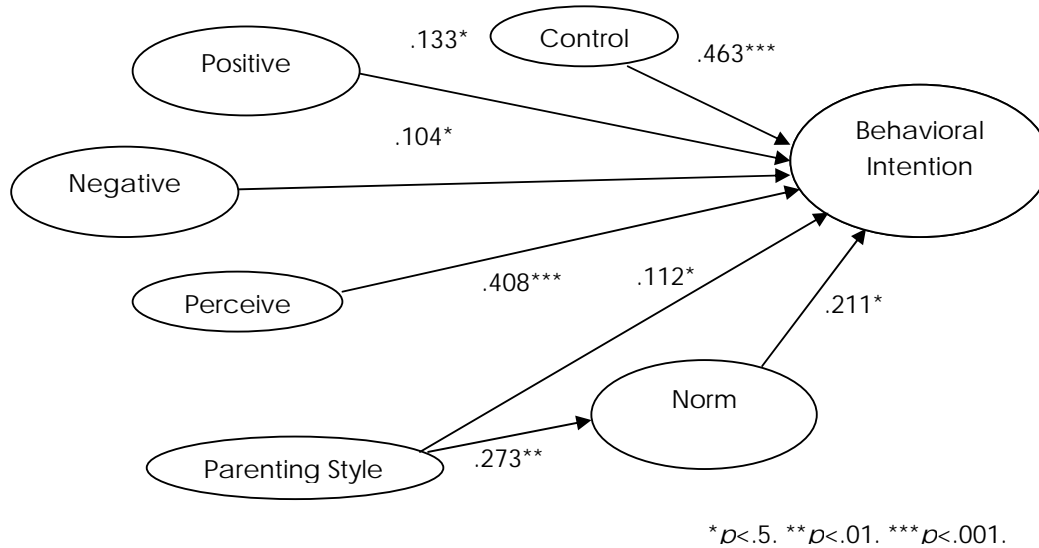


Figure 1: Structural Model Analysis

CONCLUSIONS

The present study was designed to use PLS to further investigate the relationship of behavioral intention, parenting style and the planned behavior. We had hypothesized that: (1) self-worth directly influences participants’ willingness to play our game; (2) behavioral control also influences participants’ willingness to play the game; (3) participants’ attitudes toward playing the game positively associated with their willingness to play the game; (4) participants’ subjective norm also positively associated with their willingness to play the game; and (5) participants’ willingness of playing the game develop as a direct result of parenting style.

The structural model testing indicated that all hypotheses were confirmed. (1) The path direction indicated that positive self-worth positively related to children’s willingness to play ‘To do or not to do’ ($p=.13$, $t=2.24$), and negative self-worth also related to their willingness to play the game ($p=.10$, $t=1.71$). (2) The result suggested that children’s behavioral control significantly influenced playing ‘To do or not to do’ intention ($p=.46$, $t=5.83$). (3) Children’s perceived attitudes toward playing ‘To do or not to do’ significantly influenced their playing intention ($p=.40$, $t=7.18$). (4) The subjective norms children possessed influenced their intention to play ‘To do

or not to do' ($p=.21$, $t=2.31$). (5) Parenting styles was investigated as one of factors influencing children's intention to play 'To do or not to do' ($p=.11$, $t=1.89$). Moreover, the result indicated that parenting style significantly influenced children's subjective norms ($p=.27$, $t=3.12$).

Briefly, the results indicated the self-worth, parenting style and theory of planned behavior measurements, factor loading were fit >0.5 and p values were <0.05 which fit in with research hypotheses referring to the behavioral intention was significantly influenced by behavioral control, self-worth, perceived attitude toward the game, subjective norm and parenting style. These results mirror the results of prior studies (Ajzen, 1991; Russell & William, 2007) regarding the theory of planned behavior, which reported that individual's attitude, subjective norm, and behavior control affected individual's intention. In addition, the results highlighted the importance of parenting style, which was consistent with earlier studies (Maccoby & Martin, 1983; Baumrind, 1989; 1991; 2005). Furthermore, subjective norm in this study was influenced by parenting style which in line with previous studies (Grusec, Goodnow, & Kuczynski, 2000; Lucas, 2000a) which proclaimed that children's cognitive belief structure/ways of thinking can be influence by their parents.

According to the descriptive analyses, it is exciting to find out that majority of all students rated this game was interesting and would like to play it again. Interest has been seen as an emotion or an affective variable (Dai & Sternberg, 2004; Meyer & Turner, 2002), a powerful motivation to trigger participants to play. In this regard, the evidence of the descriptive analysis is especially revealing because it implies that interest to play the game has a positive influence on their choices to involve in the game again (Hidi & Renninger, 2006), this form of self-interest is one way to ensure that their interest will survive. Students could either play the game at home or school to learn moral education.

During the growth of moral development, people go through various different stages of moral development. Previous studies found that younger children often use the concepts from Stage 1 (avoidance of punishment and obtainment of rewards) and Stage 2 (satisfaction of self-interests) of moral development theory, while the concept of Stage 3 (belongings) became common among adolescence (Kohlberg, 1984; Snarey, 1985; Walker, 1989). This study was in line with the moral development theory, several evidences we saw were students were extremely excited when the demonstrations were offered to them, and eager to involve in the moral online game 'To do or not to do' which the punishments or rewards system was well-established to keep students remaining in the game.

Caution must used when interpreting the findings of the study and generalizing the results of the study due to the limitations related to internal validity. The first limitation was selection bias and sample size. Participants selected for this study from four different elementary schools in Taipei, Taiwan. Because of the limited access, the results of this study may have been influenced. In addition, participants in this study might not truly represent the populations in elementary schools. Caution must be used when generalizing the results of this research to children who did not involve in this study; however, the findings are applicable to those children involving in this study. The second limitation was the use of PLS can only test the relative path of the given causal model to the existing data set, though the PLS results consistent with our hypotheses, longitudinal studies were encouraged. The third limitation might was instrumentation; participants may be affected by the wording or misunderstood the questions since these questions were adapted from English articles which could have influenced the results. The final limitation was the measures used in the present study largely emphasized the self-worth scales. Therefore, future studies should attempt to balance the content of each construct.

In summary, despite the shortcomings, the present study is consistent with previous work suggesting links among self-worth, parenting styles, and the planned behaviors. The next important step would be to conduct longitudinal studies to the structural model described in Figure 1.

IMPLICATIONS AND FUTURE STUDY

The major implication of the study is directed toward identifying ways to improve outcomes of e-learning or digital learning for students in Taiwan. The results of this study showed that participants like to play this online moral game which implied that attitudes or changes that needs to be occurred in either school or at home, (1) policy makers should consider setting up an e-learning classrooms where students and teachers enjoy e-service in each classroom, (2) school administrators, or teachers may put more emphasis on e-learning by providing a variety of e-learning, and interactive courses to vitalize the instruction, (3) other professionals who cares about education, such as, e-learning web site designer, could construct a variety of e-learning platforms to attract students.

This study is unique in that it is the first to explore whether factors, such as, self-worth, parenting style and planned behavior, influence children's intention to play online moral game called 'To do or not to do' which created by digital game-based learning lab of National Taiwan Normal University, Taiwan. Thus, the online moral game itself is unique and may be useful to future researchers interested in a deeper understanding regarding e-learning issues. For example, the result did not tell us whether children's game-based online learning experiences positively affect their outcome of academic regarding moral values or not. Thus much more research is needed in comparing the moral value learning outcome between face-to-face classroom and the online educational game, especially using 'To do or not to do'.

The research approach used a quantitative research design. Interviewing a large pool of students or parents in a reasonable time frame would have proved difficult. Gathering a large data from parents regarding their parenting style would allow more in-depth analysis. Furthermore, gathering data from teachers who had used the 'To do or not to do' game in teaching moral education might be helpful to improve the study or the game we developed. Due to time restriction, and limited access, further research is needed to involve in different phases of students, and compare the similarities and differences on the planned behavior in either 'To do or not to do' game or other e-learning games, not only in Taipei, but in other counties of Taiwan. Improvements can be made to improve this research and hopes are that educators who work in e-learning area will consider this research for future study.

The researcher offers the following examples for future study: (1) Refine the survey instruments to identify new variables which might strengthen the analysis; (2) Broaden the scope of the research to different cities or counties to enhance understanding the influences that shape students' decisions; (3) This study was limited to the scope of 5th and 6th students. It should be broaden to include multiple grade students in the study to gather a large pool of data for analysis; (4) Include teachers and parents in the study might be helpful to gather valuable data for analyses; (5) Research other influential factors such as student achievement. This would broaden the understanding the role of the game.

ACKNOWLEDGEMENT

We give very high appreciation to the sponsor for this research from National Science Council (NSC 99-2631-S-003-003 and NSC 99-2631-S-003-013-CC2)

REFERENCES

- Ajzen, I. (1991). The theory of planned behavior, *Organizational Behavior and Human Decision Processes*, 50, 179-211.
- Allen, K. (2003). Linguistic metatheory. *Language Sciences*, 25(6), 533-560.
- Apple, M. W. (1989). Cultural politics and education. New York: Teachers College press.
- Apple, M. W. (1993). Official knowledge: Democratic education in a conservative age. New York: Routledge.
- Baumrind, D. (1967). Child care practices anteceding three patterns of preschool behavior. *Genetic Psychology Monographs*, 75, 43-88.
- Baumrind, D. (1989). Rearing competent children. In: W. Damon, (Ed.), *Child development today and tomorrow* (pp. 349-378). San Francisco: Jossey-Bass.
- Baumrind, D. (1991). Parenting styles and adolescent development. In J. Brooks-Gunn, R. Lerner and A.C. Petersen, (Eds.), *The encyclopedia of adolescence* (pp. 746-758). New York: Garland.
- Baumrind, D. (2005). Patterns of parental authority and adolescent autonomy. *New directions for child and adolescent development*, 61-69.
- Chin, W.W. (1998). The Partial Least Squares Approach for Structural Equation Modeling. In Marcoulides, G. A. (Eds.), *Modern methods for business research* (pp. 295-336). Mahwah, NJ: Lawrence Erlbaum Associates.
- Chin, W. W., Marcolin, B.L. & Newsted, P. R. (1996, December). A Partial Least Squares Latent Variable Modeling Approach for Measuring Interaction Effects: Results from a Monte Carlo Simulation Study and Voice Mail Emotion/Adoption Study. Paper presented at the Seventh International Conference on Information Systems, Cleveland, OH.
- Chin, W. W., Marcolin, B.L. & Newsted, P. R. (2003). A Partial Least Squares Latent Variable Modeling Approach for Measuring Interaction Effects: Results from a Monte Carlo Simulation Study and an Electronic-Mail Emotion/Adoption Study. *Information Systems Research*, 14 (2), 189-217.
- Coopersmith, S. (1967). *The antecedents of self-esteem*. San Francisco: Freeman.
- Costanzo, P. R., & Fraenkel, P. (1987). Social influence, socialization, and the development of social cognition. In N. Eisenberg (Ed.), *Contemporary topics in developmental psychology* (pp. 191-215). NY: Wiley & Sons.
- Crocker, J., & Knight K. M. (2005). Contingencies of Self-worth. *Current Directions in Psychological Science*. 14(4), 200-203.

- Crocker, J., Luhtanen, R.K., Cooper, M.L., & Bouvrette, A. (2003). Contingencies of self-worth in college students: Theory and measurement. *Journal of Personality and Social Psychology*, 85(5), 894-908.
- Dai, D.Y., & Sternberg, R.J. (2004). Beyond cognitivism: Toward an integrated understanding of intellectual functioning and development. In D.Y. Dai, & R.J. Sternberg (Eds.), *Motivation, emotion, and cognition: Integrative perspectives on intellectual functioning and development* (pp. 3-38). Mahwah, NJ: Lawrence Erlbaum.
- Fornell, C., & Larcker, D.F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, 18 (1), 39-50.
- Fritzsche, D. J. (1991). A model of decision-making incorporating ethical values. *Journal of Business Ethics*, 10(11), pp. 841-922.
- Glasgow, K. L., Dornbusch, S. M., Troyer, L., Steinberg, L., & Ritter, P. L. (1997). Parenting styles, adolescents' attributions, and educational outcomes in nine heterogeneous high schools. *Child Development*, 68, 507-529.
- Giroux, H. A. (1983a). *Theory and resistance in education. A pedagogy for the opposition*. New York: Bervin & Garvey.
- Gordon, D. (1991). Neo-Marxist approach. In A. Lewy (Eds). *The international encyclopedia of curriculum* (pp. 28-31). Oxford: Pergamon Press.
- Grusec, J. E., Goodnow, J. J., & Kuczynski, L. (2000). New directions in analyses of parenting contributions to children's acquisition of values. *Child Development*, 71, 205-211.
- Hair, J. F., Ronald, L.T., Rolph, E.A. & William, B. (1998). *Multivariate Data Analysis*, Englewood Cliffs, NJ: Prentice Hall.
- Harter, S. (1990). Issues in the assessment of the self-concept of children and adolescents. In: La Greca AM (Ed), *Through the eyes of the child: Obtaining self-reports from children and adolescents*. Needham Heights, MA: Allyn & Bacon.
- Hayes, J. R. (1989). *The complete problem solver* (2nd ed.). Hillsdale, NJ: Erlbaum.
- Hidi, S., & Renninger, A. (2006). The four-phase model of interest development, *Educational Psychologist*, 41(2), 111-127.
- Hooker, J. N. (1996). Three kinds of ethics. <http://web.tepper.cmu.edu/jnh/papers.html>.
- Kohlberg, L. (1981). *The philosophy of moral development*, Harper & Row, San Francisco.
- Kohlberg, L. (1984). *The psychology of moral development*. San Francisco: Harper & Row.
- Lamborn, S.D., Mounts, N.S., Steinberg, L., & Dornbusch, S.M. (1991). Patterns of competence and adjustment among adolescents from authoritative, authoritarian, indulgent, and neglectful families. *Child Development*, 62 (5), 1049-1065.
- Lucas, C. (2000a). Value metascience and synergistic choice. Retrieved from <http://www.calresco.org/cs2000/meta.htm>.
- Lucas, C. (2000b). The philosophy of complexity. CALResCo. <http://www.calresco.org/lucas/philos.htm>
- Maccoby, E., & Martin, J. (1983). Socialization in the context of the family: Parent-child interaction. In: E.M. Hetherington and P.H. Mussen, (Eds.), *Socialization, personality, and social development Socialization, personality, and social development* (pp. 1-101), New York: Wiley.
- Meyer, D. K., & Turner, J.C. (2002). Discovering emotion in classroom motivation research. *Educational Psychologist*, 37(2), 107-114.
- Nunnally, J. (1978). *Psychometric Theory*, New York: McGraw-Hill.
- Pounds, W. F. (1969). The process of problem finding. *Industrial Management Review* 11, 1-19.
- Rest, J. R. (1986). *Moral development: Advances in research and theory*. New York: Praeger.
- Robbins, R.W., & Wallace, W.A. (2007). Decision support for ethical problem solving: A multi-agent approach. *Decision Support Systems*, 43 (4), 1571-1587.
- Russell W. R., & William A. W. (2007). Decision support for ethical problem solving: A multi-agent approach, *Decision Support Systems*, 43, 1571-1587
- Sessa, F.M (1992). *Family structure, parenting, and adolescent adjustment* (Unpublished doctoral dissertation). Temple University, Pennsylvania, U.S.A.
- Snarey, J.R. (1985). Cross-cultural universality of socio-moral development: A critical review of Kohlbergian research. *Psychological Bulletin*, 97(2), 202-232.
- Solomon, R. C., & Greene, J. K. (1999). *Morality and the good life: An introduction to ethics through classical sources*. New York: McGraw-Hill.
- Walker, L. J. (1989). A longitudinal study of moral reasoning. *Child Development*, 51, 131-139.
- Wixom, B. H., & Watson, H. J. (2001). An empirical investigation of the factors affecting data warehousing success. *MIS Quarterly*, 25, 17-41.
- Yuksel, S. (2005). Kohlberg and hidden curriculum in moral education: An opportunity for students' acquisition of moral values in the new Turkish primary education curriculum. *Educational Sciences: Theory & Practice*, 5(2), 329-338.