
Juvenile delinquency continues to plague American society. There are several established and effective counseling interventions which address the psychological and behavioral origins of adolescents’ dysfunctional beliefs and behavior choices. Moral dilemma discussions groups have been shown to be an effective intervention in improving the levels of moral development for adolescent offenders. At times, moral dilemma discussion groups have not only increased the levels of moral reasoning for group participants, but also assisted in the improvement of their overall behavior. In addition, computer-based instruction has been proven through repeated rigorous analyses as an effective teaching method. Interactive simulated gaming has also recently been utilized to expand the field of computer-based learning. This research tests the content validity of an original computer-based behavioral intervention, Ethos, which is intended to serve as a simulated moral dilemma with the future purpose of increasing game players’ levels of moral reasoning. A panel of four experts reviewed Ethos and unanimously determined that it has the necessary qualities to be considered an effective moral dilemma. This research is innovative in laying the foundation for computer-based behavioral interventions being available as effective counseling tools.
Ethos: An Original Moral Dilemma Computer Game and the Testing of its Content Validity

by
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DEDICATION

To my son, Vasili. I began this program so I could better support you; and as I complete this journey, I thank you for all the love, support, and inspiration you have given me throughout this process. I am so proud of you. You are my favorite Study Buddy😊
BIOGRAPHY

Sophia Dorton Caudle is a licensed professional counselor, consultant, and school counselor in North Carolina. Dr. Caudle primarily works with children, adolescents, and their families. She also consults with school systems to develop effective programs and efficient management systems for the benefit of all students. Her areas of expertise include, but are not limited to, moral development, social skills, anger management, gang issues, anxiety, depression, substance abuse, abuse/neglect, trauma, crisis management. She is published under her former last name, Claypoole, in the Journal for the Specialists in Group Work and has also been awarded Best Article in Group Work from the American Counseling Association in 2000. Dr. Caudle’s current research interests are in the field of computer-based behavioral interventions.
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CHAPTER 1
Introduction

Trends in Juvenile Crime

The social problem of juvenile delinquency continues to afflict American society. An overwhelming portion of our nation’s young people choose to behave within a subculture of violence which reflects an overall lack of respect for society and its norms.

Although minors comprise approximately 12% of the United States population; they commit an overrepresented 22% of the total crime index in America as well as 14% of all violent crimes (National Youth Violence Prevention Resource Center, 2007). In addition, young people are much more likely to be arrested for property crimes than violent crimes (National Academies Press, 2001). For instance, over the past 30 years, between one quarter and one third of all juvenile arrest rates were for index property crimes including burglary, larceny, theft, motor vehicle theft, and arson (National Academies Press, 2001). However, juvenile arrest rates for offenses where a weapon was involved doubled between 1985 and 1993 (National Academies Press, 2001).

Additionally, in 2000, American students aged 12-18 were victims of approximately 1.9 million acts of violence or thefts at school (National Youth Violence Prevention Resource Center, 2007). Students in this same age range were also victims of 128,000 violent crimes at school such as rape, sexual assault, robbery, and aggravated assault (National Youth Violence Prevention Resource Center, 2007). Moreover, homicides committed by minors under 18 years of age accounted for 10.1% of all homicides reported in 1999 (National Youth Violence Prevention Resource Center, 2007). Furthermore, in 1999, there was an estimated
840,500 youth gang members active in the United States (National Youth Violence Prevention Resource Center, 2007).

While males continue to commit most juvenile offenses, females are increasingly more involved in adolescent crimes (Claypoole, Moody, & Peace, 2000). Girls account for more than one-quarter of all youth arrest rates (National Youth Violence Prevention Resource Center, 2007). Further, females’ arrest rates for both property crimes and violent crimes have been steadily increasing over the past two decades (National Youth Violence Prevention Resource Center, 2007). Typically, girls have been arrested for larceny and running away from home (National Youth Violence Prevention Resource Center, 2007). However, the arrest rates for adolescent females for violent crimes have increased more than the rates for adolescent males for violent crimes; 120% between 1981 and 1994 as compared with 60% for males (Perrone, & Chesney-Lind, 1997; Snyder & Sickmund, 1999).

Moreover, while juvenile crime pervades all aspects of American society, it is particularly overwhelming in the African American community. There is a disproportionate representation of African American youth involved in the juvenile justice system (National Academies Press, 2001). In 1997, African American youth represented approximately 15% of the U.S. population ages 10-17, however, they also represented 26% of all juvenile arrests, 30% of juvenile justice referrals, 46% of juvenile cases referred to adult court, and 40% of youths incarcerated for long-term periods in institutional settings (National Academic Press, 2001). Consequently, the proportion of African Americans involved in the juvenile justice system is more than double its representation in the overall U.S. population.
Statement of the Problem

It is obvious that juvenile delinquency is a serious problem in American society. Research on adolescent offenders has proven that they are immature in their development of moral judgment. According to Kohlberg (1984) there is a direct association between an individual’s stage in moral development and their moral behavior in society. Moral dilemma discussion groups have been found to be effective in increasing juveniles’ levels of moral reasoning with the intention of improving their overall behavior (Arbuthnot & Gordon, 1986; Claypoole, Moody & Peace, 2000; Kohlberg, 1969). However, an effective moral dilemma discussion group intervention is a very time consuming process in terms of each group session’s length as well as for the intervention’s duration. For instance, an ideal moral dilemma group intervention may meet one to two times per week for 60-90 minutes over a 10 to 12 week period. Because an effective research design for a moral dilemma discussion group intervention requires a significant time commitment for both the researcher and the participants, this type of intervention can only be completed in an institutional setting where scheduling and regular group participation are not issues. For these reasons, moral dilemma discussion groups are very difficult to conduct in the school or private setting which, in turn, is the ideal location to utilize the moral reasoning training as a preventive intervention for adolescents’ overall behavior improvement.

Purpose of the Research

The purpose of the present study is to create Ethos, an original computer-based moral dilemma intervention and test its content validity. Ethos is a moral dilemma computer game that is intended to serve as an intervention to increase the levels of moral reasoning for those who play the game. Because Ethos is in its first stage of development, there is only one
dilemma situation to test for content validity at this time. Results of this investigation will be utilized in the creation of Ethos’ future dilemmas. It is hoped that Ethos will ultimately be appropriate for use in public or private settings in order to stimulate moral reasoning training in an effective, implementation via a friendly and affordable manner.

**Significance of the Study**

According to Kohlberg’s (1969) theory of moral development, an individual’s moral development progresses in a progressive, invariant sequence with each moral stage more complete and refined than the previous stage (Copeland & Parrish, 1979). An individual’s moral reasoning stage is a conceptual schema for interpreting social relationships and personal responsibilities (Rest, Cooper, Coder, Masanz, & Anderson, 1974). Further, Gilligan (1974) and Ratvich (1973) found that inmates in correctional institutions are delayed in development of their moral reasoning. It has also been revealed that delinquent youth are arrested in levels of moral development (Fodor, 1972; Jurkovik, 1980; Kohlberg, 1978; Niles, 1986).

It is believed that one’s moral-cognitive stage is related to his or her overall behavior in society (Blasi, 1980; Moody, 1994). Blasi conducted a meta-analysis of over 74 studies and found that 78% of the studies found a relationship between individuals’ moral reasoning scores and their socio-moral behavior.

There also appears to be a strong relationship between moral reasoning stages and the overall behavior of delinquent youths. Juvenile delinquents consistently demonstrate that their levels of moral development are less advanced than non delinquent youth. Blasi (1980) investigated the hypothesis that juvenile delinquents typically demonstrate less mature moral development than non delinquent youths and found 10 of the 15 studies indicated there were
significant differences between the two groups’ levels of moral development in the expected direction.

Moral dilemma discussion groups have been found to be effective for increasing the moral reasoning levels of some of the participants (Arbuthnot & Gordon, 1986; Claypoole et al, 2000; Fleetwood & Parish, 1976). However, moral reasoning groups are very time consuming and therefore conducted most often in institutional settings as an intervention after the fact. Ideally, moral reasoning groups should be utilized in the school or private settings as a preventive intervention prior to adolescents committing crimes. Due to the significant time commitment necessary to conduct an effective moral reasoning group, it is not likely that schools will allow their students to miss the amount of instructional time required for this type of intervention. It is also difficult to ensure regular group participation of an intervention with such a significant time commitment in a private practice setting. However, schools have found much value in computer-based academic instruction and encourage students to spend large amounts of time on computers because it is both an effective and enjoyable learning tool.

While computer use for academic purposes has become more prevalent in American schools during recent years, it is essential to understand the effectiveness of computer-based instruction (CBI). According to Kulik (1983), early research regarding computer-based instruction in the elementary school setting indicated that it is effective for increasing student achievement, especially when used in conjunction with traditional classroom teaching strategies. Similarly, Burns and Bozeman (1981) used meta-analysis to examine the effectiveness of CBI via achievement test data in both elementary and secondary schools. Concisely, the researchers determined that achievement test scores increased a significant .45
standard deviations with computer-based tutorials and .34 standard deviations with computer-based drill and practice (1981).

In addition to the widespread computer use among American children there is also the common observable fact that children spend a significant amount of their time playing computer games, also called gaming. According to current research data, more than one third of children in the United States spend more time gaming than they did two years previously (NPD, 2007). Additionally, among all child gamers, approximately half game five hours per week or less and the other half game six to 16 hours per week (NPD, 2007). The gaming life cycle begins with child oriented games, usually transitions to computer games, and then as a game-interested child matures he/she may transition to a gaming system such as Nintendo, wii, or Play station (NPD, 2007).

The purpose of the present study is to create phase one and test the content validity of an original computer-based moral development intervention game called Ethos. This research will begin the testing process to determine if computer-based Ethos can serve as an effective moral reasoning intervention for adolescents to improve their overall behavior. This research will also expand knowledge in the field of computer-based behavioral interventions.

The Research Questions

The research questions are as follows: (a) Does ‘JD’s Offer’, the dilemma in Ethos, have the qualities necessary to serve as an effective moral dilemma? (b) Do the dilemma’s choice options, with accompanying feedback throughout game play, provide an effective simulated experience for the gamer that can teach him or her to make better choices in real-life? (c) Do the items in the ‘Things to Consider” sections provide an effective simulated experience for the gamer that can teach him or her to consider the consequences of his or her
behavior prior to making a choice in real-life? (d) Do the “Things to Consider”, Timelines, and game outcomes provide an effective simulated experience for the gamer that can teach him or her to consider the law and others in society while making his or her own choices in real-life? (e) Does the expert panel believe Ethos will be an effective moral reasoning intervention upon its completion?

Definition of Terms

For the purposes of this study a list of pertinent terminology is provided to facilitate better understanding of the research as well as contribute to the field of computer-based behavior interventions.

**Computer-based instruction.** Instruction that is administered and conducted on a computer rather than through traditional teaching methods such as whole group, classroom, or individual person to person instruction.

**Computer gaming or gaming.** The act of playing games either for recreation or education on a computer.

**Content validity.** Explains the degree to which the content accurately matches the domain.

**Ethos.** Literally, the Greek word meaning ‘character’. Also, the original computer-based behavioral intervention game this research is based upon. The purpose of the computer game Ethos is to serve as a moral reasoning behavioral intervention.

**Gamer.** One who plays computer-based or electronic games.

**Moral development.** A term coined by Lawrence Kohlberg (1969). A successive transformation in the way which an individual views cooperative social relationships and arrangements. Each moral development stage is more advanced than the previous stage in
conceptualizing social interrelationships and personal responsibilities. The definition for moral development is synonymous with moral reasoning and moral judgment.

**Moral dilemma discussion group.** The practical application of Kohlberg’s theory, where moral dilemmas are presented and the students engage in debate and discussion in order to promote higher levels of moral reasoning in a group setting.
CHAPTER 2

Literature Review

Introduction

The information for this review of the literature was obtained from the author’s previous research in the field of moral development and a current search in this area as well as an extensive exploration into the effectiveness of educational gaming. Sources were obtained through online search engines and databases at North Carolina State University, Duke University, and the University of North Carolina at Chapel Hill. The following database search engines were used to obtain the information; NC Live, EBSCO, ERIC, Psych Lit, and MEDLINE. In this chapter the following will be discussed; (a) problems of juvenile offenders, (b) purpose of the research, (c) Moral development, (d) effectiveness of moral reasoning training for adolescent offenders, (e) effectiveness of computer-based instruction and gaming (f) exploration of computer-based behavior interventions.

Problems of Juvenile Offenders

The social problem of juvenile delinquency continues to plague American society. Minors comprise approximately 12% of the Unites States population; however they commit an overrepresented 22% of the total crime index in America as well as 14% of all violent crimes (National Youth Violence Prevention Resource Center, 2007). While males continue to commit most juvenile offenses, females are increasingly more involved in the juvenile court system (Claypoole, Moody, & Peace, 2000). Further, in 2000, American students aged 12-18 were victims of approximately 1.9 million acts of violence or thefts at school (National Youth Violence Prevention Resource Center, 2007). Additionally, students aged 12-18 were also victims of 128,000 violent crimes at school such as rape, sexual assault, robbery, and
aggravated assault (National Youth Violence Prevention Resource Center, 2007). Also, homicides committed by minors under 18 years of age accounted for 10.1% of all homicides reported in 1999 (National Youth Violence Prevention Resource Center, 2007). Furthermore, in 2009, there was an estimated 400,000 youth gang members active in the United States (National Gang Intelligence Center, 2009).

**Purpose of the Research**

The purpose of this research is to test the content validity of phase one of an original computer-based moral dilemma intervention called, Ethos. Ethos is a moral dilemma computer game with the intention of serving as an intervention to increase game players’ levels of moral reasoning. As Ethos is in its first stage of development, there is only one comprehensive dilemma situation for the expert panel to test for content validity at this time. Results of this research will be utilized in the creation of Ethos’ future dilemmas towards the completion of the game intervention. Ethos will ultimately be appropriate for use in any public or private setting in order to stimulate moral reasoning training in an effective, timely, and affordable manner.

**Moral Development**

Jean Piaget’s (1932) cognitive development theory presented a framework for understanding the morality of children. Piaget stated that the moral development of a child is an age related sequence where mature moral ideologies transpire from premoral concepts (Prentice, 1972). Piaget claimed that the cognitive schemas and structures of moral development are innate, invariant, hierarchical, and culturally universal.

Following in the tradition of Piaget, Lawrence Kohlberg expanded on the theory of moral development by using a sample size which was much larger and more socially diverse

A moral stage is a cognitive framework, which directly relates to a person’s behavior in society (Gibbs, Arnold, Ahlborn, & Chessman, 1984). Kohlberg’s stages of moral judgment identify the characteristics of morality that change with a person’s development. As people progress through the stages of development, how they perceive social relationships and their responsibilities to their communities also change (Rest, Cooper, Coder, Masanz, & Anderson, 1974).

In Kohlberg’s (1969, 1981, 1984) theory of moral development, the first component is the preconventional level, which consists of stage one and stage two. At this level, socio-moral rules and values are perceived as “do’s” and “don’ts” for behaviors which are associated with punishment (Moody, 1994). Children aged 9-11 as well as juvenile offenders are commonly characterized as being included in level one (Jennings, Kilkenny, & Kohlberg, 1983).

Stage one is called the obedience and punishment orientation where the individual obeys rules in order to avoid punishment. Stage two is the naively egoistic orientation where the individual changes his or her behavior in order to receive rewards. More specifically, the right action is whatever successfully satisfies one’s own needs and may or may not occasionally satisfy another’s needs. There is also a relative awareness of others’ needs and values concerning certain issues and situations. In this stage, the individual also naively believes in the exchange and reciprocity of behaviors (Kohlberg, 1984).
Level two is the conventional level, which consists of stages three and four. Typically, most adults and adolescents function at level 2. The individual understands and attempts to uphold the values and rules of society while adhering to authority (Kohlberg, 1984).

Stage three is called the “good boy” or “good girl” orientation where the individual concentrates on gaining approval from his or her immediate peer group. The individual also changes his or her behavior in order to avoid disapproval from others.

Stage four is called the law and order orientation where correct behavior consists of doing one’s duty and showing respect for authority and following the social order. There is also a high regard for earned expectations of others (Kohlberg, 1984).

The last level of Kohlberg’s theory of moral development is the post conventional level, which consists of stages five and six. In this level, the individual examines the rules and values of society in relation to universal well being (Kohlberg, 1984).

Stage five is called the contractual legalistic orientation where an individual’s duties are determined by agreements and respect for others’ rights. Emphasis is placed on equality, democratic rights, and order. There is also an increased appreciation for others’ needs and values when attempting to reach a consensus. Finally, stage six, the conscious or principle orientation involves the individual respecting the rules of social order as well as personal choices where universal well being is a priority. These stages are based on various ways of considering moral issues and situations. Kohlberg (1984) established that, as one moved through these stages of moral development, the decision making process regarding moral conflict shifted from a focus on self to a universal well being.
Most often, moral reasoning develops in a successive, invariant sequence of stages where each subsequent stage is more complete and superior to the previous stage (Gibbs et al., 1984). According to Kohlberg (1969), a moral stage can only be entered into after the previous stage has been successfully mastered. Finally, Kohlberg regarded the theory as both psychological and philosophical in nature, therefore moral education should be designed to stimulate moral development rather than teach fixed moral rules.

**Effectiveness of Moral Reasoning Training for Adolescent Offenders**

Kohlberg assessed levels of moral development through the administration of hypothetical moral dilemmas. Dilemmas typically involve choice conflicts between something which would be beneficial for self rather than other (Jurkovic, 1980). Dilemmas such as this are designed to stimulate reasoning which focuses on life, rules, authority, duty, contract, and ethical universality (Kohlberg, 1969). Participation in moral dilemma discussion groups has been found to increase the ability of participants to utilize higher level moral reasoning skills (Kohlberg, 1969, 1981, 1984).

Gilligan (1974) and Ratvitch (1973) have suggested that inmates of correctional institutions are inferior in their levels of moral development. Also, according to McDavid and Schroeder (1956), juvenile delinquents are severely lacking in their abilities to discriminate between positive and negative consequences of events. Further, adolescent offenders are often delayed in their moral development (Jurkovic, 1980; Prentice, 1972). Antisocial behavior in children may be linked to immature levels of their moral development (Jurkovic, 1980; Prentice, 1972). There is also strong evidence linking severe childhood antisocial behavior throughout adolescence with an increased risk for persistent misbehavior (Bailey, 1995).
Also, it is believed that children who do not experience adequate role taking opportunities will have difficulty developing their own sense of moral judgment. This can result in a difficulty handling situations where there is a conflict of interest between themselves and others (Gibbs et al., 1984). Moral dilemma discussion groups can assist adolescents to experience different roles in a safe environment with the intention of improving their overall behavior (Claypoole, Moody, & Peace, 2000).

There are studies which demonstrate that participation in moral dilemma discussion groups can increase youth offenders’ levels of moral reasoning as well as improve overall behavior (Claypoole et al., 2000; Bailey, 1995). Research conducted by Arbuthnot and Gordon (1986) established that high risk behavior disordered youth demonstrated increases in their levels of moral reasoning as well as behavior improvements such as a decrease in behavior referrals, tardiness, court contacts, and an increase in academic performance due to their participation in moral dilemma discussion groups. The 48 participants, consisting of 35 males and 13 females, were identified by their teachers as ideal for the intervention based on their school behavior and performance needs. Participants attended moral dilemma discussion groups that lasted 45 minutes and continued for 16-20 weeks. The mean scores for both the treatment and control groups were analyzed by analysis of covariance on the outcome data. Stage of moral reasoning for the experimental group increased almost half of a stage to 249.94, and the control group declined in stage to 206.78. Also, group participants’ average office referrals declined to nearly 0, and the control group’s office referrals increased to 2.29. In addition, average tardiness of the experimental group declined to .69, and tardiness of the control group increased to 4.08. Furthermore, grade point average for the group participants increased to 1.68 while the control group declined to 1.29. Finally,
police contacts between the two groups were considerably different with the experimental group declining to an average of .04 and the control group increasing to .45. Arbuthnot and Gordon (1986) concluded that at-risk adolescents can improve both their levels of moral reasoning and behavior by participating in moral dilemma discussion groups.

Niles (1986) examined the effect of moral reasoning groups on delinquent and predelinquent males. Niles’ (1986) sample consisted of 59 males. Twenty-seven participants were in an institution and 32 were at a special education day program. Niles utilized treatment, control, and placebo groups. The treatment and placebo group groups met twice a week for 16 weeks. Both groups participated in moral dilemma discussion groups, however, only the experimental group received consensus values clarification while the placebo group only heard a values explanation. The control group received no treatment at all. The results indicated that six out of the seven participants in the experimental group moved from stage one to stage two, and all experimental group participants who were already at stage two remained at stage two. The participants in the control and placebo groups did not move to stage two; some participants even decreased to stage one if they were on the cusp of the two stages. The results indicated that moral discussion groups can stimulate the moral development of its participants. Niles also stated that the improvement of the participants’ moral development may also improve their socio-moral choices and behavior in society.

Effectiveness of Computer-based Instruction and Gaming

Due to the fact that there are differing opinions regarding which teaching method is more effective, traditional or computer-based, it is important to understand which method produces the most significant learning outcomes. Fortunately, Vogel, Vogel, Cannon-Bowers, Bowers, Muse, and Wright (2006) conducted a meta-analysis which compared the
effectiveness for cognitive learning between traditional teaching methods and computer gaming and interactive simulations. Two effect sizes were collected for the overall results. First, Vogel et al examined a sample size of 8549 ($z = 6.051$, $p < .0001$), and observed that significantly higher cognitive gains were recorded with participants utilizing interactive games as opposed to traditional teaching methods. The second main effect observed attitude ($z = 13.74$, $p = .0001$, $N = 2378$), which indicated that attitudes towards learning were significantly more positive when utilizing computers than through other traditional teaching methods. Vogel et al. also included several additional variables to examine such as gender, age, and type of activity, in order to determine which teaching method was most effective. Consistently, the analyses demonstrated that, for all of these indicators, computer-based gaming influenced significant cognitive growth in the participants as opposed to traditional teaching methods.

Needless to say, the overall meta-analysis indicated that those participants who utilized computer-based simulated gaming reported higher cognitive gains as well as more positive attitudes towards learning than those participating in traditional teaching methods (Vogel et al., 2006). Additionally, these results also coincide with the consensus that increased student interest and motivation influences increased academic achievement.

In another study, Gee (2005) examined why video games are effective for learning at the beginning of the simulated educational computer gaming era. First, Gee (2005) established that there are various types and sophistication levels of video games. Gee also discovered that there is much educational research which demonstrates that video games can be quite beneficial to learning (Gee, 2005; Kulik, 1983). However, not all video games are interesting or effective learning tools. At the outset, primarily due to budget constraints,
educational games are customarily at the lower end of the sophistication spectrum and normally used to teach basic academic skills. Consequently, once students have mastered the fundamentals, there does not appear to be continued interest to play the games. Additionally, most educational games are not capable of changing and evolving as the students grow smarter and master the basics (Gee, 2005).

Gee (2005) stated that games which incorporate simulated ‘virtual worlds’ are not only interesting but also effective instructional tools because the players must learn to adapt and problem solve inside the game which includes ever-changing variables. In essence, Gee stated that the player’s surrogate, which is inside the game, controls the virtual world. Then, the player identifies goals within the game and utilizes his/her surrogate to problem solve by utilizing the rules of the virtual world. Gee further explained that the player must distinguish between what is right and wrong in the context of the game in order to achieve the goals, and ultimately, achieving the goals is the same as a ‘winning’ the game.

Moreover, Gee (2005) stated that there are several factors that contributed to simulated video games being beneficial learning tools. Most importantly to the fields of counseling and psychology, the world of virtual realities offers humans an opportunity to feel empathy in a complex simulated system. However, even though Gee clarified that simulated video games are not the same as reality, he still asserted that in the appropriate circumstances games can foster empathetic attitudes.

In addition, video games are the most effective mode of technology available to replicate sophisticated scientific thought processes (Gee, 2005). Further, video games and simulations can be used to prepare us for our behavior in actual events. For instance, according to Gee, players can role play or test actions and consequences while playing the
game prior to real-life circumstances. Effective problem solving can also be attempted and mastered in a video game simulation prior to an actual experience. Finally, behavior generalizations are then formed and they can become a natural learning tool for the gamer to transfer to his or her real-life.

Smart tools are another aspect of video gaming that Gee (2005) asserted is beneficial to increase learning. Smart tools help video game players behave successfully inside the virtual world. Expanding, smart tools encourage player persistence and participation within the rule structure as a method to gain competence through trial, error, and feedback in order to win the game.

Another positive asset of gaming is the fact that the cross functional affiliation of gaming teams simulates society’s teams in the workplace and other situations where people must work together (Gee, 2005). Gee believes that certain games such as City of Heroes simulate learning communities and help players develop group skills for knowledge acquisition and communication.

A final reason Gee (2005) considers video games to be helpful learning tools is that sophisticated video games embody language to be placed in different dialogues, contexts, experiences, images, and actions. Additionally, this language characteristic is an optimal opportunity to increase vocabulary as well as knowledge about a life experience. In the end, it has been demonstrated through research in the specific area of reading comprehension that the combined language acquisition gaming process is more effective than a student simply reading text.

Computer-based instruction has repeatedly been proven to be an effective method of teaching academic information (Kulik, 1983). In addition, simulated gaming is a
sophisticated and interactive expansion of computer-based instruction which also seems to provide a significant motivation factor that encourages students to want to continue to play the game and therefore continue learning (Gee, 2005).

**Exploration of Computer-based Behavior Interventions**

There is a plethora of research supporting the effectiveness of computer-based instruction, however the field of sophisticated simulated gaming as educational or behavioral interventions is quite new and there is limited research available.

In spite of the fact that behavioral intervention gaming is still in the early stages of development and validity evaluations, the military has proven to be quite innovative in their use of interactive gaming for various training purposes (Curtis, Thomas, & Ritter, 2008). For instance, the Army, Navy and Air Force are constantly creating and using various simulated games in order to reduce training time and costs as well as increase mission preparedness for future actual events. Curtis et al. identify Falcon 4.0 as one such game that the Air Force utilizes for pilots to practice their flying skills during deployments. However, as educational sophisticated gaming is still in its early stages, thorough evaluation findings tend to be limited. Currently, the military is just now beginning to conduct repeated empirical quantitative data analyses for the simulated training games that have been implemented. In the recent past, the majority of the data that the military has generated to measure the effectiveness of its simulated training games was qualitative interview responses. It remains to be seen at what level of rigor the military’s future data analyses will be in regards to its simulated training games.

In the social sciences, there are a handful of simulated gaming programs aimed at changing behavior which also claim effectiveness through interactive gaming such as Fear
Not! and Carmen’s Bright Ideas. However, similar to the military’s simulated game training program evaluation results, thorough empirical evaluation data are somewhat limited for these gaming interventions as well (Aylett, Louchart, Dias, Paiva & Vala, 2005; Marsella, Johnson, & Labore, 2003).

For instance, Fear Not! appears to be a quality virtual game that attempts to reduce the frequency and continuation of bullying in the schools (Aylett et al., 2005). Fear Not! professes to foster empathy and generate coping skills for the victims of bullying to use in the school setting. However, even though there have been numerous studies examining Fear Not, the results regarding learning gains tend to be speculative.

Likewise, Carmen’s Bright IDEAS is a worthwhile and well-intentioned game that endeavors to teach health intervention skills to mothers of pediatric cancer patients (Marsella et al., 2003). Gamers control Carmen’s decisions as she learns to problem solve the many issues related to parenting a sick child. Similar to Fear Not!, Carmen’s Bright IDEAS has been the focus of clinical trials, but results have been limited to a large degree as well.

Another computer-based behavioral intervention entitled S. S. Grin Interactive Social Training System by 3-C Institute for Social Development is currently in its first phase of development (3-CISD). However, there are no data available at this time.

In contrast, there are several educational gaming projects currently being developed at various universities such as Harvard’s River City, University of Indiana’s Quest Atlantis, and North Carolina State University’s Crystal Island that are receiving rigorous and regular monitoring and assessment (Barab, Thomas, Dodge, Carteaux, & Tuzan, 2005; McQuiggan, Rowe, Lee, & Lester, 2008). Crystal Island is a good example in of the level of rigor necessary to test for program effectiveness in this new field, as there is much research
available which specifically applies to Crystal Island (McQuiggan et al.). Crystal Island is a narrative-centered learning environment (NLE) targeted to increase eighth grade science achievement. A NLE is an educational game that combines story contexts and academic support strategies to instruct specific course content in an effective and interesting manner.

One of Crystal Island’s first effectiveness analyses investigated the influence of the NLE on the learning outcomes and experiences of eighth grade public school students based on the expectations of the North Carolina Standard Course of Study science curriculum (McQiggan et al., 2008). The sample of 179 male and female eighth grade students was divided into four randomly assigned groups with three varying treatment groups and one control group. One week prior to the students playing the Crystal Island game intervention, the entire sample was administered science self-efficacy and aptitude assessments as well as several specially designed Crystal Island assessments intended to measure specific instructional methods of the NLE. The 50 minute treatment consisted of three equal groups within the sample playing three versions of the Crystal Island game; the control group received no intervention. Immediately after the intervention, a post-test of all assessments were administered to the sample.

McQuiggan et al. (2008) found two main themes. First, it appears that, overall, the students who participated in the Crystal Island intervention demonstrated more significant gains in their learning outcomes than the control group. Also, students answered more questions correctly on the pre-test than the post-test. Further, matched pairs $t$ tests which compared the pre and post-tests revealed significant gains overall. It is also worthy to note that there were significant gender differences. On average, within the treatment groups, male
participants scored an additional 1.3 problems correct than females on post-test results (McQuiggan et al., 2008).

Another significant theme that McQuiggan et al. (2008) uncovered in the data analysis was the outcome of presence. Presence depicts a gamer’s feeling of genuine participation in the game itself. For example, the more narrative version of Crystal Island correlated with significantly higher presence reports. There was also a significant correlation of higher interest and higher reports of presence. Likewise, students with higher self-efficacy also reported higher levels of presence than their counterparts.

Overall, the initial evaluation of the Crystal Island simulated gaming intervention and NLE established that narrative-based interactive and sophisticated gaming is an effective instructional method and it will benefit future game creators to have additional current research based on this project.

The implications for the future of computer-based behavioral interventions are obvious; it may very well be the case that research-based behavioral computer games could be as or more effective than time consuming person to person counseling for the improvement in overall behavior in society. It is also possible that traditional counseling used in conjunction with behavioral gaming may be the most thorough method for meeting clients where they are and how they are accustomed to learning as computers are prevalent in young peoples’ lives for education as well as communication. The present study explores one moral dilemma’s content validity for the purpose of better understanding how to create an effective moral development computer game.
Chapter 3

Method

Participants

The participants for the present study were a panel of experts consisting of a combination of counselors, psychologists, and researchers. It was necessary that all experts have extensive experience in at least one of the following areas: child and/or adolescent development, adolescent psychotherapy, moral development, moral dilemma discussion groups, or ethical decision making. Expert eligibility was determined from professional referrals and local university web sites for related areas of focus. The panel was also to have access to a personal computer, be computer literate, and be located near the researcher in the event that technical support was needed. This study has been approved by the Internal Review Board (IRB) at North Carolina State University (see Appendix A).

Instrumentation

Ethos. At this time, Ethos consists of one comprehensive moral dilemma. Ethos was created for the purpose of serving as a dissertation research project for a doctoral student, who will be referred to as the researcher, in the Counselor Education program at North Carolina State University. In order for Ethos to be created, it was necessary for the researcher to hire a team of computer scientists. The team consisted of one doctoral and three undergraduate students from the same university whose contributions were as follows. The researcher created the dilemma as well as all content information in Ethos and co-managed the project. The doctoral student who served as the project consultant, game designer, and co-manager was from the computer science department. The undergraduate students were
also from the same computer science department; they provided the game’s programming, graphic art, and music.

Prior to the beginning of the project, the researcher and project consultant met in order to determine if the game concept was possible with the budget the researcher had available. After the researcher and consultant determined the scope of Ethos that was possible to create within the budget, the researcher advertised in the computer science department to find programmers. Soon, the programmer was interviewed and hired, and, as a result of the programmer’s networking, the graphic and music artists were located, interviewed by the researcher and then hired.

Next, the researcher and project consultant met several times in order to determine the goals and next steps of the project. After the moral development goal was defined, it was time for a game type to be chosen. The team played as many various types of video games as possible in order to determine the most effective and entertaining game to model for Ethos. Once the type of game was determined, the researcher wrote the dilemma to match the game type for the team to read and begin planning the programming, art, and music. After the programming began, the team consultant instructed the researcher to create many more dilemma choices for the game in order to make the dilemma as comprehensible as possible so game play could continue as well as be educational and interesting at the same time. This process of additional writing and programming occurred for two months. Also during this time, music and sounds were created, finalized, and programmed into the game. Eventually, the programming was complete and the test phase occurred for two weeks, so bugs could be found and corrected. After a total project development time of eleven months, Ethos was completed and fully functioning with its own installation web site.
**Development of Ethos survey.** The Ethos survey was developed for the panel to complete at the end of game play. The survey was created by researcher in an attempt to measure Ethos’ content validity. The researcher identified the main qualities of previously utilized and accepted dilemmas in order to develop specific questions for the Ethos survey.

**Ethos survey for expert panel.** An Ethos survey was created in order to measure the moral development content validity of phase one (see Appendix B). The Ethos survey has 19 questions which are a combination of yes-no and open-ended responses. The survey was completed by the expert panel after they have played Ethos for the standard time of two weeks. The Ethos survey allowed panelists to assess how well they believe Ethos could serve as an effective moral dilemma upon its completion. The specific qualities of Ethos the panel assessed on the survey are as follows: consideration of behavior choices, consideration of behavior consequences, consideration of others in society, and consideration of the law in society.

**Procedure**

**Data collection.** The first step in the data collection process was to recruit panelists (see Appendix C). Ten prospective panelists were contacted. Three people did not respond back at all and three people said they would participate and then decided not to. In the end, this study had four expert panelists. The initial contact email introduced the primary researcher, explained the purpose of the study, and provided a general description of what was required to serve on the panel. If a prospective panelist was interested in participating on the panel, then he or she was instructed to open the letter of informed consent, read, electronically sign, and then email it back to the researcher (see Appendix D).
The second step in the data collection process focused on the game itself. Instructions were for the panel to install Ethos. The Ethos game installation instructions were available from the Ethos web site (see Appendix E). See Appendix F for a screen shot of Ethos. Ethos was created to be played only on a Windows personal computer, not a Mac. After the Ethos installation link was emailed to panelists, one of the panelists attempted installation and his computer was unable to display the graphics. Also, the three other panelists who agreed to participate did not attempt installation even though they all stated they would soon try. Due to the fact that installation was proving to be a challenge and time was passing, the researcher purchased three inexpensive computers to install with Ethos and take turns giving to panelists over a three week period. Once the panelists had their computers with Ethos, game play could begin and the experts could then provide their expert opinion at the end of the two week period. There were standard game instructions for the study. Standard instructions were to play Ethos for at least four, 30 minute sessions, during a two week period. Participants were welcome to play more than two hours if they chose. At the end of the two week time period, participants completed the survey. The researcher created the standard instructions so the panelists would have ample time to play several complete games and form their opinions without having the experience be too time consuming.

The third phase of data collection was the administration, completion, and submission of the Ethos survey. The Ethos survey was both emailed to panelists as well as hand delivered when computers were delivered. The panel had the option of completing the survey either via online or by hand. The researcher communicated both written and verbal instructions to the panel to complete the survey only at the end of the standard two hour minimum time of game play. Instructions for the survey are included at the beginning of the
survey (see Appendix B). The Ethos survey contains 19 questions. At the completion of the survey, panelists were to either email the survey back to the researcher or store the completed survey with the computer for pick up by the researcher.

**Data analysis.** Panelists’ responses from the Ethos survey were analyzed using descriptive statistics. The mean scores, median, mode, range, standard deviation, and common themes were described from the responses. The primary investigator examined the data and consulted with faculty advisors in order to analyze panelists’ responses. The data analysis goal was to identify and rate the favorable and unfavorable responses as well as better understand the responses that were mid range.
CHAPTER 4

Results

The purpose of the present study was to create Ethos, an original computer-based
moral dilemma intervention and test its content validity. Ethos is a moral dilemma computer
game that is intended to serve as an intervention to increase the levels of moral reasoning for
those who play the game. The researcher surveyed a panel of experts to determine the
content validity of Ethos. The proposed research questions for this study were as follows: (a)
Did ‘JD’s Offer’, the dilemma in Ethos, have the qualities necessary to serve as an effective
moral dilemma? (b) Did the dilemma’s choice options, with accompanying feedback
throughout game play, provide an effective simulated experience for the gamer that could
teach him or her to make better choices in real-life? (c) Did the items in the ‘Things to
Consider” sections provide an effective simulated experience for the gamer that could teach
him or her to consider the consequences of his or her behavior prior to making a choice in
real-life? (d) Did the “Things to Consider”, Timelines, and game outcomes provide an
effective simulated experience for the gamer that could teach him or her to consider the law
and others in society while making his or her own choices in real-life? (e) Did the expert
panel believe Ethos would be an effective moral reasoning intervention upon its completion?

Analysis of Survey Data

Panelists.

The panelists for this study consisted of four experts in the fields of moral
development and adolescent psychotherapy. Panelist number one was a Caucasian female, 50
years of age, a licensed professional psychotherapist and substance abuse counselor currently
working primarily with adolescents, but who had also worked in the school and other agency
settings. Panelist number two was also a Caucasian female, aged 43, and a professor at a local university who has conducted extensive research in moral development with adolescents. Panelist number three was a Caucasian male, aged 43, also a professor at a local university who has conducted extensive research with adolescents in moral development. Finally, panelist number four was an African-American male, aged 40, who has only worked in the private setting as a licensed professional psychotherapist with children and adolescents as a large portion of his practice’s focus. Panelists number four is also a gamer.

Survey Results.

Overall survey results indicated that all four expert panelists believed JD’s Offer demonstrated the content validity necessary to be an effective moral dilemma. The panel also reported that Ethos had the necessary qualities to be an effective moral dilemma game intervention upon its completion. All four expert panelists responded the same answer, ‘yes’ for each of the five closed-ended questions on the Ethos survey pertaining to aspects of effective moral dilemma content validity. The mean, median, and mode responses were all ‘yes’. There was no standard deviation or range since all panelists’ responses were ‘yes’.

The first question of the Ethos survey asks panelists if they believe JD’s Offer, the comprehensive dilemma in Ethos, has the qualities of an effective moral dilemma, and all four panelists unanimously responded affirmative. See Table 1 for a summary.
Table 1

*JD’s Offer has Qualities Necessary to Serve as Effective Moral Dilemma*

<table>
<thead>
<tr>
<th>Panelist (P)</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>Yes</td>
</tr>
<tr>
<td>P2</td>
<td>Yes</td>
</tr>
<tr>
<td>P3</td>
<td>Yes</td>
</tr>
<tr>
<td>P4</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Panelist number two reported “I believe it has all of the traits for a solid moral dilemma…..a moral/ethical conflict where one has to critically think and exercise some value related judgment.” JD’s Offer is a dilemma similar to other previously accepted and utilized dilemmas where the dilemma requires the gamer to consider his or her personal values within the context of social laws and norms while making an important decision usually having both short and long-term consequences.

The second question of the Ethos survey asked panelists if they believed the choice options and immediate feedback in JD’s Offer were effective simulated experiences for the gamer to make better life choices, and again, all panelists responded, ‘yes’. The purpose of the choice options and immediate choice feedback was to simulate discussion and further thought processes that would occur in effective moral dilemma discussion groups. Panelist
number one stated, “the simulated experiences helped gamers learn how to predict the consequences of their future actions.” See Table 2 for a summary.

Table 2

*Choice Options with Immediate Feedback Provide Effective Simulated Experience to Help Gamer Improve Behavior Choices in Life*

<table>
<thead>
<tr>
<th>Panelist (P)</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>Yes</td>
</tr>
<tr>
<td>P2</td>
<td>Yes</td>
</tr>
<tr>
<td>P3</td>
<td>Yes</td>
</tr>
<tr>
<td>P4</td>
<td>Yes</td>
</tr>
</tbody>
</table>

The third question on the Ethos survey asked panelists if they believed the game’s “Things to Consider” provided an effective simulated experience for gamers to consider the consequences of behavior prior to making choices in real-life. All panelists responded in the affirmative. The ultimate purpose of an effective procession through a moral dilemma is to improve future overall behaviors through the increase in moral reasoning levels. It was imperative that the expert panel believed Ethos was capable of simulating this aspect of an effective moral dilemma discussion group. Panelist number four stated the “Things to Consider” was “like a little conscience helping you make or evaluate your decisions.” See Table 3 for a summary.
Table 3

_The Things to Consider Sections are an Effective Simulated Game Experience that Can Teach the Gamer to Consider Choices in Real-Life_

<table>
<thead>
<tr>
<th>Panelist (P)</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>Yes</td>
</tr>
<tr>
<td>P2</td>
<td>Yes</td>
</tr>
<tr>
<td>P3</td>
<td>Yes</td>
</tr>
<tr>
<td>P4</td>
<td>Yes</td>
</tr>
</tbody>
</table>

The fourth question on the Ethos survey asked panelists if they believed the game’s “Things to Consider”, timelines, and outcomes provided an effective simulated experience for gamers to consider others and the law when making future behavior choices in real-life. Again, all panelists responded in the affirmative. During a typical moral dilemma discussion group, the group facilitator’s role is to provide appropriate questioning which will hopefully lead group members to consider future consequences of their behavior as well as how their actions affect others. In order to establish the content validity of JD’s Offer, it was essential the expert panel believed Ethos could influence gamers to improve their overall moral behaviors in society. See Table 4 for a summary.
Table 4

*The Things to Consider, Timelines, and Game Outcomes Provide an Effective Simulated Experience for the Gamer to Consider the Law and Others in Society While Making Life Choices*

<table>
<thead>
<tr>
<th>Panelist (P)</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>Yes</td>
</tr>
<tr>
<td>P2</td>
<td>Yes</td>
</tr>
<tr>
<td>P3</td>
<td>Yes</td>
</tr>
<tr>
<td>P4</td>
<td>Yes</td>
</tr>
</tbody>
</table>

The final closed-ended question on the Ethos survey asked panelists if they believed Ethos would be an effective moral reasoning intervention upon its completion. This question was perhaps most important for the expert panel determining the content validity of Ethos, because if the majority of the panel believed Ethos could serve as an effective moral reasoning intervention then the panel obviously believed Ethos had valid content validity as a moral dilemma. Once again, all panelists responded in the affirmative. See Table 5 for a summary.
Table 5

*Ethos will be an Effective Moral Reasoning Intervention Upon its Completion*

<table>
<thead>
<tr>
<th>Panelist (P)</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>Yes</td>
</tr>
<tr>
<td>P2</td>
<td>Yes</td>
</tr>
<tr>
<td>P3</td>
<td>Yes</td>
</tr>
<tr>
<td>P4</td>
<td>Yes</td>
</tr>
</tbody>
</table>

There were also several open-ended questions on the Ethos survey, so panelists would have the opportunity to elaborate further regarding their opinions of Ethos. The first open-ended question asked panelists how many comprehensive dilemmas they believed should be included in a completed Ethos. The experts’ responses varied. Panelists’ responses are in Table 6.

Table 6

*Number of Comprehensive Moral Dilemmas to be an Effective Intervention*

<table>
<thead>
<tr>
<th>Panelist (P)</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>3-4</td>
</tr>
<tr>
<td>P2</td>
<td>2</td>
</tr>
<tr>
<td>P3</td>
<td>5</td>
</tr>
<tr>
<td>P4</td>
<td>10</td>
</tr>
</tbody>
</table>
It is possible that the panelists’ responses ranged from two to 10 moral dilemmas due to the panelists differing professional counselor expertise. The panelists who reported the highest number of dilemmas worked in the private practice setting only.

The second open-ended question on the Ethos survey asked the panelists how many times they believed each dilemma should be played in order for it to serve as an effective moral reasoning intervention. Panelists’ responses are in Table 7.

Table 7

*Same Comprehensive Moral Dilemmas Should be Played X Number of Times*

<table>
<thead>
<tr>
<th>Panelist (P)</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>4 times</td>
</tr>
<tr>
<td>P2</td>
<td>1-2 times</td>
</tr>
<tr>
<td>P3</td>
<td>4-5 times</td>
</tr>
<tr>
<td>P4</td>
<td>4 times</td>
</tr>
</tbody>
</table>

The third open-ended question on the Ethos survey asked panelists how much time they believed gamers should play effective computer-based behavior interventions. Panelists’ answers are in Table 8.
Table 8

*Amount of Time Should Spend Playing Effective Computer-based Behavior Interventions*

<table>
<thead>
<tr>
<th>Panelist (P)</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>30-60 Minutes for 2-3 Days per Week</td>
</tr>
<tr>
<td>P2</td>
<td>30-60 Minutes for 2 Days per Week</td>
</tr>
<tr>
<td>P3</td>
<td>60 Minutes for 3 Days per Week</td>
</tr>
<tr>
<td>P4</td>
<td>30-45 Minutes for 3 Days per Week</td>
</tr>
</tbody>
</table>

The next open-ended question on the Ethos survey asked panelists if they believed Ethos could serve as a standalone moral reasoning intervention. All panelists replied in the affirmative, however if accompanied with counseling or processing. Table 9 provides a summary.

Table 9

*Can Ethos, if Completed, be a Stand-alone Intervention*

<table>
<thead>
<tr>
<th>Panelist (P)</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>Yes, with Therapy</td>
</tr>
<tr>
<td>P2</td>
<td>Yes, with Counseling</td>
</tr>
<tr>
<td>P3</td>
<td>Yes, with Counseling</td>
</tr>
<tr>
<td>P4</td>
<td>Yes, with discussion or processing</td>
</tr>
</tbody>
</table>
It seems that the expert panel appreciated the possibilities of Ethos being effective, but each panelist was in favor of some type of processing as part of the intervention.

The last open-ended question on the Ethos survey asked panelists in what settings they believed Ethos would be appropriate. The panelists’ answers are in Table 10.

Table 10

*Ethos Can be an Effective Intervention in the Following Settings*

<table>
<thead>
<tr>
<th>Panelist (P)</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>Home, School, Therapeutic, Juvenile Justice</td>
</tr>
<tr>
<td>P2</td>
<td>Home, School, Therapeutic, Juvenile Justice</td>
</tr>
<tr>
<td>P3</td>
<td>Home, School, Therapeutic, Juvenile Justice</td>
</tr>
<tr>
<td>P4</td>
<td>School</td>
</tr>
</tbody>
</table>

It is interesting that three panelists believed Ethos would be appropriate for most settings and P4, who only worked with clients in a private practice setting, believed Ethos would be appropriate only in the school setting.

**Common Themes from Qualitative Analysis**

The Ethos survey was also analyzed via qualitative analysis. Common themes from the open-ended questions were identified and categorized by the researcher. The common themes that the expert panel wrote about in their responses clearly matched their quantitative responses. The consistency of the panels’ quantitative and qualitative responses gives weight to the overall consistency and impact of the results. A larger sample of panelists may have
resulted in a more meaningful research study, however, experts in the fields of moral development, child development, ethical decision making, and adolescent psychotherapy who were also willing to participate in this study were not abundant in this geographical area.

There were several common themes found among all four panelists’ responses which demonstrated their unanimous opinion that Ethos has sufficient content validity to be an effective moral dilemma. The first theme the panelists wrote about most often in the Ethos survey was that the dilemma, JD’s Offer, was very realistic. The panel reported that it was believable for many adolescents either to have the ability or know someone who has the ability to hack into school computers and this was a scenario that most gamers could relate to. All panelists agreed that the realistic nature of this dilemma is the main quality that makes it effective for adolescent gamers so they will be able to participate fully in the game learning experience. Panelist number one stated that, “the dilemma represents a realistic scenario an adolescent would encounter and asks the individual to make choices about things an adolescent would encounter regularly in real life.”

The second most common theme among panelists’ responses was that, as with previously accepted effective moral dilemmas, JD’s Offer gives game players a clear choice with extreme consequences. The panel stated that effective moral dilemmas have clear choices with rewards and consequences that affect the individual within society’s norms and laws. For instance, panelist number three stated, “A clear choice. A real situation. Extreme consequences either way.” Also, often times, moral dilemmas offer short-cut solutions with socio-moral implications. For instance, one can accept JD’s offer and pay to have the grade changed, but it is an illegal and unethical action that could have severe consequences if caught. Conversely, if the grade is not changed, then the class is failed. Panelist number two
reported “I believe it has all of the traits for a solid moral dilemma…..a moral/ethical conflict where one has to critically think and exercise some value related judgment.”

Another main theme all panelists specifically wrote about in the survey was that the game atmosphere encouraged game players to choose and experience various consequences in a safe environment without the harm of real-life choice exploration. The panel also stated that a single player video game was non-threatening and gamers could try various choice options without others judging them as opposed to a moral dilemma discussion group setting where judgmental behavior among group members has the possibility of occurring.

Another theme the panelists believed added to Ethos’ effectiveness as a moral dilemma intervention was the ability of the game to provide immediate choice feedback. In Ethos, each time a gamer makes a choice; he or she receives visual feedback for various life categories such as grades, behavior, popularity, and money. Each panelist specifically wrote how the immediate feedback of each choice in Ethos was an effective tool to communicate consequences both present and long-term to the gamer. In moral dilemma discussion groups, the future consequences of choice options are discussed in the group setting and this was a crucial component to be included in Ethos’ game simulation. Panelist number three wrote that, “perhaps the gamer is able to see how one bad choice leads to another and increasingly more severe consequences.” And, panelist number four stated, “the game predictions about the gamers’ future based on the responses allow the gamer to consider choices more closely.”

Another theme each panelist recorded as an effective aspect of Ethos was the ‘Things to Consider’ (TTC). The TTC section provided important choice considerations for the gamer to have brought to his or her attention while making the decision. The TTC were
intended to be discussion points that may occur in a moral dilemma discussion group as the group discusses to a final consensus.

*The final and perhaps most important common theme among the expert panel was the opinion that all panelists stated they believed Ethos, if completed, could serve as an effective intervention if combined with appropriate follow-up discussion or counseling.* In follow up conversations regarding Ethos, all panelists reiterated the opinion that Ethos should be completed and available for clients’ use.
CHAPTER 5

Discussion

The Purpose of the Study and Summary

The purpose of this research was to develop Ethos, an original computer-based moral dilemma intervention and test its content validity. Ethos is a moral dilemma game that is intended to serve as an intervention to increase the levels of moral reasoning for those who play the game. Ethos has only one comprehensive dilemma situation to test for content validity at this time. Results of this investigation will be utilized if future dilemmas are created for Ethos. Ideally, Ethos may ultimately be appropriate for use in public or private settings in order to stimulate moral reasoning training in an effective, implementation via a friendly and affordable manner.

First, a team of fellow students from the computer science department at North Carolina State University were hired to assist the investigator in transforming her knowledge from conducting research in the area of moral development into a computer-based moral development intervention; what is now known as Ethos. The team consisted of a consultant/game designer, programmer, graphic artist, sound artist, and the researcher. The researcher spent several months writing and editing the dilemma, JD’s Offer, as well as all content information in Ethos. The team had regular meetings throughout the process of creating Ethos. Once a final plan for Ethos was determined, the programming phase began. The entire programming phase lasted four months. After programming was completed, the test phase began. The team played Ethos as much as possible for two weeks in order to uncover and fix all bugs.
Once Ethos was complete, 10 prospective expert panelists were contacted to participate in the research study. In the end, there were four experts panelists who participated in the research. Two panelists were professors of counselor education at local universities and had conducted extensive research in moral development. The other two panelists were locally-based licensed professional psychotherapists who had adolescents as a large portion of their clientele. The content validity of Ethos was tested by having the expert panel play Ethos for a minimum of two hours as well as complete a survey. Follow up interviews were also conducted to further clarify the survey.

**Research Design Analysis and Research Limitations**

It is clear that this panel of experts believed that Ethos had the potential to serve as an effective behavioral intervention. All four panelists responded positively throughout the survey regarding Ethos’ content validity and potential to serve as an effective moral reasoning intervention. The research design was sufficient, but it may not have been the best option for a small panel. There was no variation in the panelists’ responses to the yes-no questions on the Ethos survey. The present study may have been more informative if the expert panel was larger. It is also possible that the Ethos survey could be improved in order to obtain more detailed feedback from the panelists.

The researcher believed it was important she be located nearby panelists in the event that technical support was needed. It was much more difficult to obtain expert panelists than the researcher anticipated prior to the study. First, there were not many local experts in the field of moral development. Second, there were also not a large number of nearby psychotherapists whose focus was primarily in adolescents’ issues. The goal was to have a larger panel of experts, but of the 10 prospective panelists, only four participated in this
study. If a more affordable and reliable download process for Ethos was available, prospective panelists could have been recruited from around the country and thus the panel would have been larger. Testing computer-based programs will be more efficient if a broader range of panelist candidates can be contacted even if they are not located nearby the researcher.

A second limitation to this research design was that all four panelists were unable to successfully download Ethos and the researcher had to purchase three laptops in order to conduct the study. Of the four panelists, one attempted to download Ethos and his computer was not capable of running it. The other three panelists agreed to participate in the study, but were unable to take the first step in downloading Ethos. During the follow up interview, none of those three panelists could give a reason for being unable to attempt the Ethos download. As soon as it was known that the panelists were all unable to download Ethos successfully, and too much time was passing, three inexpensive computers were purchased to install Ethos and then distribute to the panelists. The panelists were all very appreciative to receive computers with Ethos already installed on it. P2 and P3 even apologized for not being able to successfully download Ethos. As soon as the panelists received their computers, they began to play Ethos and reported playing the game frequently. It was beneficial for the completion of this study that the researcher was located near the panelists in order to provide technical support. The study would have cost less if the programmer had been paid to build a more user-friendly download for Ethos.

The study of Ethos’ content validity may also have been more meaningful if there were already a valid and reliable assessment to test the content validity of new behavioral software as compared with traditional counseling methods. Since an Ethos survey was
created for this study, this was the first time it was used and it is not known if the survey is the best measure of Ethos’ content validity.

**Summary of Results and Other Limitations**

Overall, the expert panel reported very positive results about Ethos. The panel unanimously stated that Ethos demonstrated strong content validity. Each panelist also believed that JD’s Offer had the necessary qualities to serve as an effective moral dilemma. Each panelist also indicated that if completed, they believed that Ethos could serve as an effective moral development game. This is very promising information for Ethos as well as the future of computer-based behavioral interventions.

Even though the expert panel reported positive affirmations about Ethos, the field of computer-based behavioral interventions is very new and this is also one of its greatest limitations. Behavioral gaming is not in wide practice yet, but rather, still in its early stages of research and development, and very little is known about it among most mental health professionals. It was very difficult at times to explain the concept of computer-based behavioral interventions to colleagues when it is still such a foreign topic. The lack of previous awareness of behavior gaming was a limitation to successfully enlisting more panelists.

Additionally, some mental health professionals resisted the notion of computer-based behavioral interventions and this was obviously a limitation when requesting prospective panelists. It appeared to be difficult for some mental health professionals to appreciate the value in computer-based behavioral interventions when our field is based on human interaction rather than humans interacting with computers. A few professionals even expressed disbelief in the possibility of artificial intelligence being able to be as effective in
changing human behaviors as other humans even though there is a plethora of published and well-known research confirming the effectiveness of computer-based instruction. Further research would allow mental health professionals to understand that behavioral gaming can be another tool to utilize with clients rather than be threatened at its existence.

Another limitation to this study was that the expert panel did not consist of typical gamers. Further relevant information regarding the playability of Ethos may have been discovered if average gamers were asked to play Ethos and respond to the survey.

A final limitation to this study was the expense involved. The project was funded entirely by the researcher. Funding for computer-based research is typically awarded for projects much larger than Ethos. If behavioral gaming can break into the field of counseling, then possibly more research can be conducted on a smaller scale in order to benefit new innovations in mental health practice. Even though the creation of behavioral software requires one initial investment, one behavioral game can assist far more clients than one counselor conducting individual or group counseling.

**Recommendations for Future Research**

It is clear from the review of the literature, as well as the challenges experienced when attempting to obtain expert panelists, that the field of computer-based behavioral interventions is very new. There is much research to be conducted in order to add to the knowledge base. Since behavior gaming is such a new field, it would be wise for researchers to take small steps when conducting future research, so they can be purposeful in gathering knowledge and build upon one another’s new information. It is also very important for the early stages of research to have some successes as this is imperative to this innovation continuing on instead of ending before it can really begin.
It also seems logical to completely understand existing research in computer-based instruction for the purposes of creating effective behavior games. There is already a great deal of research that explains the necessary qualities of effective academic games and it would be useful for mental health professionals to be aware of this knowledge.

Finally, it is crucial that counselors and computer scientists spread the news of the potential for computer-based behavior interventions, via professional publications and conferences, so further research can be conducted and ultimately utilized to create effective behavioral intervention games. Effective behavioral gaming can be a useful tool to improve lives and benefit society. As it has always been the intention of counselors to ‘meet clients where they are’, computer-based behavioral interventions and gaming are the next innovative method of serving our clients in the medium we all operate within on a daily basis: computers.
REFERENCES


scores of juvenile delinquents and their inclusion in a moral dilemma discussion group. *Psychological Reports*, 39, 1075-1080.


APPENDIX A

From: Carol Mickelson, IRB Coordinator
North Carolina State University
Institutional Review Board

Date: November 18, 2010

Title: Ethos: The Study of the Content Validity of Ethos: An Original Computer-based Moral Development Game

IRB#: 1743

Dear Ms. Caudle:
The research proposal named above has received administrative review and has been approved as exempt from the policy as outlined in the Code of Federal Regulations (Exemption: 46.101. b.2). Provided that the only participation of the subjects is as described in the proposal narrative, this project is exempt from further review.

NOTE:

1. This committee complies with requirements found in Title 45 part 46 of The Code of Federal Regulations. For NCSU projects, the Assurance Number is: FWA00003429.

2. Any changes to the research must be submitted and approved by the IRB prior to implementation.

3. If any unanticipated problems occur, they must be reported to the IRB office within 5 business days.

Please forward a copy of this letter to your faculty sponsor, if applicable. Thank you.

Sincerely,

Carol Mickelson, NC State IRB
ETHOS SURVEY

DIRECTIONS: Please complete the following survey regarding Ethos and email your completed survey to sophiadc1@aol.com as soon as possible. If you have any questions, please contact Sophia Caudle at the email above or (919) 698-7061. Thank you.

I believe JD’s Offer, the dilemma in Ethos, has the qualities necessary to serve as an effective moral dilemma. (Circle One)

YES

NO

Please explain your professional opinion of the above answer in the space provided:

_________________________________________________________________________

_________________________________________________________________________

In your professional opinion, what are the specific qualities necessary for an effective moral dilemma?

_________________________________________________________________________

_________________________________________________________________________

I believe the dilemma’s choice options, with accompanying feedback throughout game play, provide an effective simulated experience for the gamer that can teach him or her to make better choices in real-life.

YES

NO

Please explain your professional opinion of the above answer in the space provided:

_________________________________________________________________________

_________________________________________________________________________
I believe the items in the ‘Things to Consider” sections provide an effective simulated experience for the gamer that can teach him or her to consider the consequences of his or her behavior prior to making a choice in real-life.

YES

NO

Please explain your professional opinion of the above answer in the space provided:

___________________________________________________________________________

___________________________________________________________________________

I believe the “Things to Consider”, Timelines, and game outcomes provide an effective simulated experience for the gamer that can teach him or her to consider the law and others in society while making his or her own choices in real-life.

YES

NO

Please explain your professional opinion of the above answer in the space provided:

___________________________________________________________________________

___________________________________________________________________________

I believe Ethos will be an effective moral reasoning intervention upon its completion.

YES

NO

Please explain your professional opinion of the above answer in the space provided:

___________________________________________________________________________

___________________________________________________________________________

I believe Ethos should have at least ____________ comprehensive dilemmas to be considered an effective moral development intervention. (Insert number above)

Please explain your rationale to your answer above in the space provided:

___________________________________________________________________________

___________________________________________________________________________

In your professional opinion, how many times should a gamer play the same comprehensive dilemma in order for the dilemma to be effective? ___________Times

Please explain your rationale to your answer above in the space provided:________________________________________________________

________________________________________________________
In your professional opinion, how much time do you believe an effective computer-based intervention would be required to last?

_________minutes or _________hours or ________days or ________days/week or ________weeks

In your professional opinion, do you believe Ethos, if completed, could serve as a standalone intervention or should Ethos be combined with psychotherapy? Please explain:

___________________________________________________________________________

I believe Ethos could be an effective intervention in the following settings: (Please circle all that apply)

Therapeutic  Juvenile Justice  School  Home

None
APPENDIX C

Prospective Panelists Initial Contact

Dear [Name],

My name is Sophia Caudle and I am contacting you to request your service as an expert panelist in a research study for my dissertation in the Counselor Education department at North Carolina State University. My research topic is moral development. As a panelist, you will be asked to play an original computer-based moral development game, called Ethos, on your personal computer and then provide feedback regarding the game’s moral development content validity. At this time, Ethos consists of one comprehensive dilemma. It is the intention that Ethos can be improved and possibly completed with the assistance of your participation and valuable feedback. Upon its completion, Ethos is intended to serve as a moral development behavioral intervention for adolescents.

The estimated total time for installing Ethos on your personal computer, playing Ethos, completing the brief survey, and finally removing Ethos from your computer is approximately three hours. Please note, Ethos is only compatible with a Microsoft or Windows based personal computer not a Mac.

If you are interested in serving as an expert panelist, please read the attached informed consent form, sign it, and email the form back to me. Also, if you have any questions regarding your participation or this research in general, please contact me at sophiadc1@aol.com or (919) 698-7061.

Thank you very much for your consideration to participate in this research study. I look forward to hearing back from you soon.

Warm regards,
Sophia Caudle, PhD (ABD)
APPENDIX D

North Carolina State University
INFORMED CONSENT FORM for RESEARCH

Ethos: The Study of the Content Validity an Original Computer-based Moral Development Game
Sophia Caudle, PhD (ABD) and Stanley Baker, PhD

Dear [Name],

You are being asked to voluntarily participate on an expert panel in a research study which will examine the content validity of phase one of an original computer-based moral development dilemma game, called Ethos. You have the right to participate, not participate, or stop participating at any time and will not be penalized in any way. Your participation or decline to participate will be kept completely confidential to everyone except for the primary researcher. The purpose of this research is simply to obtain your expert opinion regarding Ethos’ dilemma content validity. Your input will add much valuable information to the innovative field of computer-based behavioral interventions. There is no compensation for participation. At this time, the only risks involved are your time spent in this study.

The purpose of the present study is to test the content validity of the dilemma in Ethos. At this time, Ethos is one moral dilemma game that is intended to include more dilemmas in order to serve as an intervention to increase the levels of moral reasoning for those who play the game. Because Ethos is in its first stage of development, there is only one dilemma situation to test for content validity at this time.

If you agree to participate in this study, you will be asked to:

1. Download and install Ethos on your personal computer from a safe, protected web site after the primary researcher has emailed the web address to you. Please contact the primary researcher for all technical assistance at any time during the installation or research process.
2. Review the Tutorial until you feel comfortable with all directions. Please contact the primary researcher if you have questions.
3. Play Ethos for at least four, 30 minute sessions, during a two week period. Again, please contact the primary researcher if you have any technical issues as your expert opinion is
necessary to the validity of this study. You are welcome to play more than two hours during the two week period if you wish.

4. At the end of the two week time period, you will be emailed a confidential survey regarding your expert opinion of the content validity of Ethos. A follow-up telephone or email interview may be required to further clarify your opinions. Your responses will only be known to the primary researcher; however, results will be analyzed and anonymously documented for the purposes of this research. The information collected will be kept confidential to the full extent allowed by law. Data will be stored and locked securely with state measures taken to protect the security of data. No references will be made in oral or written reports which could link you to the study.

5. After the study is complete, you will be emailed instructions for you to remove Ethos from your personal computer.

If you have any questions at any time, please contact Sophia Caudle, the primary researcher, at sophiadc1@aol.com or (919) 698-7061. If you believe that you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact Deb Paxton, Regulatory Compliance Administrator, Box 7514, NCSU Campus (919) 515-4514.

I have read and understand the above information. I have received a copy of this form. I agree to participate in this study with the understanding that I may choose not to participate or to stop participating at any time without penalty.

Participant’s
Signature__________________________________Date_______________________

Investigator’s
Signature_________________________________Date_______________________
APPENDIX E

Ethos Installation Instructions

INSTALLATION: Unzip Ethos.zip to C:\ drive to create the C:\Ethos folder. Then execute setup.exe to install and launch application.

RUN APPLICATION: To launch application in the future, double click on the C:\Ethos\Ethos.application file. You may find it convenient to create a shortcut to this application on the Desktop. To do so, right click on C:\Ethos\Ethos.application, select Send to...Desktop (create shortcut).

ADMIN MODE: To add new user login accounts, you must use the Admin Mode. This can be accessed from the initial login screen. Hold down the C and A keys on your keyboard, then click the Ethos title. This will take you to the Admin Screen.

Enter the Admin user name and password, then click LOGIN. This will bring up two new fields where you can create a new student account. Type in the student’s login information and click ADD NEW STUDENT to add a new user. Click FINISHED when you are done with the admin functionality.

You should create a separate student account for each student who will play the game. Make sure students know their login information prior to playing Ethos.

RETRIEVING LOGS: Log files are stored in the student’s respective folder in C:\Ethos. If a student has the user name Jon, his logs will be located in C:\Ethos\JON. To retrieve log files, you must manually access this directory and copy the files, or have a responsible adult e-mail the files to the researcher.

UNINSTALL: Uninstalling Ethos requires two steps. 1) Open Start, Control Panel, and select Add/Remove Programs. You should see Ethos in the list that appears. Either right click on the Ethos entry, or click Uninstall. 2) Delete the folder C:\Ethos from your hard drive.
APPENDIX F

Ethos Screen Shot

JD's Offer (Click Me To Review)

JD offers to change your English grade for $1000

Accept JD's offer. Earn fee through hard work.
Accept JD's offer. Earn fee any way that you can.
Reject JD's offer.
Threaten JD if he does not change your grade for free.

THINGS TO CONSIDER
1. Should you take your chances and let JD change your grade, or should you take your medicine and fail the class?
2. What will your life choices be if you fail the class and do not have school loans? Are there other ways to pay for college? Other career plans?