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Moral Development of Undergraduate Business Students: Online vs. Residential Programs

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Moral Development of Undergraduate Business Students:

Online vs. Residential Programs

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July 2015
Moral Development of Undergraduate Business Students:

Online vs. Residential Programs

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Abstract

Research related to moral reasoning and development has been increasing over the past decade as a result of the business-related scandals of the early 2000’s. Education has been shown to have a strong correlation to the moral development of individuals. Additionally, the rise in online learning has brought a new dynamic to the cognitive moral development of future business leaders. The problem addressed in this study is how an online program impacts the moral reasoning development of undergraduate business students. This study issued the DIT survey to senior-level undergraduate students declared as business majors from a face-to-face and online format at a single university in order to obtain the moral reasoning scores of the respondents. A multiple regression analysis was used to determine the impact that mode of delivery has on the cognitive moral development of the undergraduate business students. Consideration was given to students that are taking courses in both formats. Additionally, potentially confounding variables were collected and accounted for as controls.
Acknowledgements

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Chapter 1: Introduction

Business managers are in positions to make decisions that impact individuals well outside the organization (Knapp & Knapp, 2007; McGee, 2007). When managers make unethical decisions the negative consequences can be seen in situations such as Enron, Worldcom, Rolay Ahold, and AIG (Engelen, 2007; Knapp & Knapp, 2007; Persons, 2009; Shurden, Santandreu, & Shurden, 2010). Unethical decisions by business managers can bring about financial losses in the billions (Doh, Husted, Matten, & Santoro, 2010). These losses affect the income of employees, the investments of shareholders, and the long-term viability of organizations (Wright, 2007).

In an attempt to protect stakeholders (Mayhew, Siefert, & Pascarella, 2010), the government enacted laws and regulations such as the Sarbanes-Oxley Act (Canary & Jennings, 2008; Orin, 2008; Shawyer, 2011) to deter unethical behavior. While legislation, such as Sarbanes-Oxley, seeks to bring accuracy to accounting and reporting, these laws are not able to account for every potentially unethical decision made by a manager. Employees and shareholders, as well as the colleges and schools from which business managers graduate (Doh et al. 2010; Mayhew et al. 2010), are affected by decisions made by business managers. These stakeholders all have an interest in the moral reasoning of business managers (Knapp & Knapp, 2007). The broad social impact of unethical decisions by business managers drives researchers to move forward in understanding what factors influence moral decision making. Greater understanding of these influences can allow for effective changes in education, laws, or ethics training for future managers (Jones, 2008; Woodward, Davis, & Hodis, 2007).
Background

Business school accreditation organizations (ACBSP, 2012), educators (Fiedler & Haren, 2009), social scientists (Kish-Gephart, Harrison, & Trevino, 2010; Langolis & Lapointe, 2010), and business ethics researchers (Kaptein, 2010; Nicholson, 2009; Thoma, 2006; Wyne, 2010), have all stated an interest in understanding how individuals make ethical and moral decisions. Therefore, research related to morality-based decision making has taken on a greater significance in the business research field (Elango, Paul, Kundu, & Paudel, 2010; Jung, 2009; Robin, 2009). This expansion has been reflected in the growth of academic societies and journals related to business ethics and morality-based business management (Ma, 2009).

Kohlberg (1976), in expanding upon the work of Piaget (1969), posited that as an individual changes and develops cognitively, the primary considerations and motivations in decisions change and develop as well (Elango, Paul, Kundu, & Paudel, 2010). These changes were formulated as Kohlberg’s theory of cognitive moral development (1976). Kohlberg (1976) presented six stages of moral development. Each stage represents a higher level of reasoning that allows for a more developed moral judgment (Kohlberg, 1976; Rest, 1999). Rest (1999) categorized the six stages into three schemas, preconventional, conventional, and postconventional. In his Four-Component Model of ethical behavior, Rest lists moral reasoning and judgment as a component of moral behavior (Bailey, Scott, & Thoma, 2010). In addition, Weber and Green (1991) wrote that moving individuals to the higher stages of moral reasoning was a key to diminishing unethical behavior by managers.
Education has been shown to be one of the strongest influences on the movement of an individual from lower to higher levels of moral reasoning (Dong, 2011, Thoma, 2006). By understanding to what extent different methods of education affect moral reasoning, we can understand how to develop educational methods that may reduce unethical behavior by future business managers (Cain & Smith, 2009; Waples, Antes, Murphy, Connelly, & Mumford, 2008).

**Statement of the Problem**

Unethical decisions by business managers can harm the financial status of stakeholders (Knapp & Knapp, 2007; McGee, 2007). Kohlberg’s Theory of Cognitive Moral Development provides a framework for understanding the moral reasoning of the individual (Kohlberg, 1982). Testing of Kohlberg’s theory has shown that undergraduate education has a strong relationship with moral reasoning changes and development (Brooks, 2010; McNeel, 1994; Nkenke, 2010; Ottewell & Wall, 2002; Revoir, 2011; Thoma, 2006). Research also shows that educational delivery (Cain & Smith, 2009; Mayhew, 2012; Mayhew & King, 2008) and social interactions (Bebeau, 2008; Lovinscky, Trevino, & Jacobs, 2007) influence moral reasoning in undergraduate students.

Moreover, educational delivery is shifting, with over six million students enrolled in at least one online college class during fall 2010 (Allen & Seamen, 2011; U.S. News, 2012) and online business programs specifically showing steady growth (Allen & Seamen, 2011). Differing outcomes in online and face-to-face students is possible (Ashby, Sadera, McNary, 2011), with the two groups faring similar on some types of assignments, and face-to-face students faring better on others (Kirtman, 2009). Although
students in purely online programs may benefit from increased media interaction, this benefit does not necessarily correlate with how much the students learn, and frequently used online practices may not be as effective as face-to-face teaching methods (Means, et al., 2009). Studies of educational formats have shown that an education that includes a blended approach, both online and face-to-face, may be superior to exclusively online or face-to-face methods (Ashby & Sadera, 2011; Means et al., 2009). The specific problem is that since online business programs are continuing to increase in number, if these programs are not as effective as face-to-face or blended business programs at developing students’ moral reasoning, there could be an increasing number of graduates who may be less prepared to apply ethical frameworks in their future careers (Cain & Smith, 2009; Jones, 2009; Ninneman, 2011).

**Purpose of the Study**

The purpose of this correlational quantitative study is to determine, based on Kohlberg’s theory of cognitive moral development and the scores produced by the Defining Issues Test (DIT2) (Thoma, Derryberry, & Narvaez, 2009; Kohlberg, 1976), the impact of program format (online vs. face-to-face) on moral reasoning scores in senior-level undergraduate business majors, as well as the impact that taking courses in the alternative format has on program format as a predictor of moral development. Testing students from the same institution will help to control for confounding variables such as admissions standards and program learning outcomes (Jones, 2009; Thoma, 2006).

The predictor variables will be the method of delivery for the business program, and the percentage of courses completed by the students in the alternative program. For example, a student in the face-to-face program may take online courses, and a student in
the online program may take courses in a face-to-face format. These situations are examples of the students taking courses in the alternative program. In addition, demographic characteristics (age, gender, previous ethics training, and work experience) will be included as predictor variables and controlled for in the assessment of the data, as these variables have been shown to impact \( P \) scores in previous studies (Herington & Weaven, 2008; Jagger 2011; Steele & Martin, 2011; Zgheih, 2005). The criterion variable will be the \( P \) score produced by the DIT2. The \( P \) score determines the degree to which an individual uses the higher stages of moral reasoning. Higher \( P \) scores display a reliance on the higher-levels of moral reasoning. A multiple regression analysis will be used to determine the relationships between program and percent of courses taken in the alternative program on \( P \) scores.

**Theoretical Framework**

Both moral and ethical behaviors are a product of individual judgment and decision-making processes (Nguyen & Biderman, 2008). Much of the initial research related to cognitive development theory began with the works of Piaget (1969). Piaget described the gradual growth and development of an individual through a series of cognitive levels. Piaget listed out four levels that described the primary stages of development. The Sensorimotor Period, which was from birth to two years old, is the foundational stage. This stage is primarily the movement from physical reflexes to the ability to manipulate and combine thoughts to make decisions. The second stage is the Preoperational-Thought Period, which is typically from the ages of 2 to 7, is a description of the transition to self-centered speech. The third stage is the Concrete-Operations Period, which is from age 7 to 11 and is the time when children begin to formulate logical
and rational arguments. The fourth stage is the Formal-Operations Period, which covers ages 11 to 15. This fourth stage is the stage at which individuals cannot only logically process through a situation at hand, but can also process hypothetical situations and can envision the ramifications of that hypothetical situation as a means of argument and assessment of validity. Piaget worked primarily with children, and therefore did not provide the guidance or theoretical foundations for development that may occur beyond those particular stages of life (Cummings & Maddux, 2010).

**Cognitive Moral Development Theory**

The work by Piaget helped lay the foundation for later research by Lawrence Kohlberg (1976). Along with Piaget, Kohlberg moved forward with the premise that moral development occurred in coordination with development of cognitive processes (Kohlberg, 1981). In addition, Kohlberg believed that cognitive processes could develop without corresponding moral development. For example, just because an individual reached a particular level of cognitive development does not mean that the person would necessarily obtain a particular level of moral development (Cummings & Maddux, 2010). What was necessary, according to Kohlberg, was the experience of a cognitive dissonance that would cause the individual to reassess previous values and move into a more developed and comprehensive stage to account for the new experience or situation (Rest, 1999). Kohlberg developed Cognitive Moral Development (CMD) theory to describe this movement and change in moral reasoning (Kohlberg, 1979: Stam, 2007). Kohlberg’s theory is not without critics (Gilligan, 1982; Liebert, 1984), but it is widely considered the primary work on moral judgment (Rest, Thoma & Edwards, 1997).
CMD theory, as proposed by Kohlberg, describes the changes that occur to moral reasoning when an individual reassess previous values and moves into a more developed and comprehensive level of reasoning to account for the new experience or situation (Rest, 1999). For example, if an individual is faced with a decision where the options seem to be in conflict with his or her established beliefs, the individual will seek a way to adjust the beliefs or actions, so that the beliefs and the actions can be in sync (Stam, 2007). This cognitive dissonance is a key factor in the CMD theory proposed by Kohlberg (1979).

CMD theory allows the researcher to assess what causes an individual to adjust the way in which he or she reasons prior to an action (Jones, 2008). In addition CMD seeks to determine which factors contribute to the cognitive dissonance that causes an individual to adjust his or her reasoning (McNeel, 1994). Kohlberg’s CMD theory is not without criticisms (Bailey, Scott, & Thoma, 2010; Boom, 2011), which are discussed in the literature review section, but it serves as a solid foundation of understanding how individuals reason and make moral judgments (Bailey, Scott, & Thoma, 2010).

**The Neo-Kohlbergian Approach to Moral Development**

James Rest, in building upon Kohlberg’s theory, sought to shore up some of the potential weaknesses and expound on the theory of Cognitive Moral Development (Rest, 1999). For example, Rest introduced schema theory into Kohlberg’s theory as a way to account for the fact that individuals that had obtained the ability to reason at higher levels didn’t necessarily mean that they did not sometimes assess situations at lower levels (Koh, 2012). Rest introduced the schema theory to show that the stages had overlapping characteristics and that the lines between the stages were not as clear as Kohlberg had
envisioned them (Koh, 2012). Schema theory describes the influence that prior experiences have on the expectations an individual brings to a situation (Traiser & Eighmy, 2011). Rest believed that these schemas, residing in the long-term memory of an individual could be activated or stimulated in order to assess the moral reasoning of an individual (Traiser & Eighmy, 2011).

James Rest (1999) defined the stages as preconventional, conventional, and postconventional. The preconventional stages, 1 and 2, of development describe the period in the life of an individual when her or she is predominately concerned with self-interest and decisions are based on a harm or benefit to self. Stages 3 and 4 describe the conventional level of development, and explain the period in the life of an individual when he or she desires to maintain the norms of society in which they live. The highest stages are the postconventional stages, 5 and 6. It is during this development period that individuals are concerned less with the social norms, but have an increased concerned with universal principles that represent rights that are outside and above society (Bailey, Scott, Thoma, 2010).

The DIT2 is the test for measuring the primary stage that an individual uses when determining the morally correct outcome in a given situation (Thoma et al. 2009). The DIT2 does not measure whether or not the final outcome is morally wrong or right, but what psychological processes influence the decision of the individual (Kohlberg, 1979). It is in the measuring of changes in DIT2 scores that research can determine what factors contribute to the cognitive moral development of the individual. The movement of an individual from one stage of moral development to the other relies on cognitive
dissonance (Stam, 2007), and this study focuses on measuring the impact that program format may have on the cognitive dissonance necessary for moral development.

**Research Questions**

In order to determine the correlation that program format has on the moral reasoning of undergraduate business students the research will measure, using the DIT2, the primary moral reasoning used by the students in online and face-to-face programs. Q1 will assess the correlation of program in a model that includes program and demographic characteristics. In addition, students typically take most of their courses in a single format, but students enrolled in both programs are allowed to take courses in the other program. Therefore, it is necessary to measure the potential incremental impact of online courses on face-to-face program students and vice versa. Q2 will be looking at the incremental impact that the percentage of online courses for both programs has on the predictive power of format on moral reasoning scores. The problem statement and purpose produce the following questions:

**Q1.** What is the relationship between program format (face-to-face vs. online) and moral reasoning, while controlling for age, gender, work experience, and previous ethical training?

**Q2.** What is the relationship between program format (face-to-face vs. online) percentage of courses taken in the alternative program, and moral reasoning, while controlling for age, gender, work experience, and previous ethical training?

**Hypotheses**

The research questions presented above produce the following hypotheses for measurement and analysis.
While controlling for age, gender, work experience, and previous ethical training, there will not be a significant relationship between program format and moral reasoning.

While controlling for age, gender, work experience, and previous ethical training, there will be a statistically significant relationship between program format and moral reasoning.

When controlling for age, gender, work experience, and previous ethical training the relationship between moral reasoning and percentage of courses taken in the alternative program will not be significant.

When controlling for age, gender, work experience, and previous ethical training the relationship between moral reasoning and percentage of courses taken in the alternative program will be statistically significant.

Nature of the Study

Moral reasoning has been shown to be a component in the moral decisions made by individuals (Kohlberg, 1966). In seeking to determine any impact of delivery format on moral reasoning this study asks whether or not those students that are enrolled in an online program differ in moral reasoning scores from students enrolled in the face-to-face program at the same institution. By using the same institution for both samples the number of potential confounding variables, such as admissions requirements, is minimized. The use of the DIT as a survey instrument allows for a quantitative analysis of moral reasoning scores of the individuals in the sample. In addition to the format, the additional predictor variable of percent of courses taken in the format will be assessed, as this will allow for a
quantitative analysis of the strength of the impact of the format. Once the data is collected, a multiple regression analysis will be used to determine any effect of the predictor variables on the criterion variable of moral reasoning score. Additionally, the use of multiple regression analysis will allow for the control of variables such as gender, age, work experience, and previous ethics training courses (Herington & Weaven, 2008).

**Significance of the Study**

The high-profile nature of some of the more recent business scandals have brought to light the potential scope of the damage created when a business manager engages in unethical activity (Engelen, 2007; Knapp & Knapp, 2007; Persons, 2009; Shurden, Santandreu, & Shurden, 2010). The foundation laid by Kohlberg in developing his theory of Cognitive Moral Development allows the researcher to measure the primary considerations and values that an individual uses when assessing the correct action in a moral situation (Rest, 1980). The movement of individuals from one stage of moral development to another is, according to Kohlberg, primarily a cognitive function and as a result, cognitive changes in an individual allow for changes and development in moral reasoning (Cavico, 2004). One of the primary drivers in cognitive development in individuals is education, and the research supports the correlation between education and moral development (Steele & Martin, 2011). However, as stated previously, education has taken on a different form in the past decades. With the increase in online education there is an opportunity to determine if this new educational format produces the cognitive changes necessary for increasing moral reasoning (Ninneman, 201). This study is significant in that it will contribute to the understanding of the relationship between the format of education and moral reasoning. As this relationship becomes clearer it will be
more likely that adjustments can be made to educational models to ensure that future business leaders will have the tools and training necessary to avoid immoral and unethical decisions.

Definition of Key Terms

Alternative Program. The alternative program is the program format in which the student is not enrolled. The online course format is the alternative program for the face-to-face students and the face-to-face course format is the alternative program for the online students.

Business Student. For the purposes of this study a business student will be defined as an individual that has declared to be a business major in an undergraduate business program at a regionally accredited institution of higher learning (Persons, 2009). Senior-level students, those that have taken over 90 credit hours in the program, will be surveyed as this classification represents the students that have been most impacted by the programs.

Educational program. This research will define educational programs as an undergraduate program at a regionally accredited institution of higher learning. The program will contain online (Hawkes, 2007; Petrova & Sinclair, 2005) and residential students (ACBSP, 2012).

Ethics. Ethics are those guidelines set by an organization that reflect the values and morals of a society (Baker, 2008).

Face-to-face Program. This study will define a face-to-face program as one in which the student is not required to attend any online courses in order to complete the
DCP that lists the courses required for graduation (Means et al., 2009; U.S. News, 2012). The instruction takes place in person and in a brick and mortar classroom.

**Moral Judgment.** For the purposes of this study, moral judgment is defined as the process in which the individual identifies their morally ideal outcome (Bailey, Scott & Thoma, 2010). Moral judgment is the decision or the outcome of the moral reasoning process.

**Moral Reasoning.** For the purposes of this study, moral reasoning is defined as the processes individuals use to make moral judgments (Mayhew & King, 2008). Moral reasoning and moral judgment are typically used interchangeably in literature to describe “the ways in which individuals define whether a course of action is morally right” based on their value system (Jones, 2008, p. 367). Moral reasoning is the process of evaluating the priorities for consideration of a moral decision. Higher moral reasoning is descriptor of more sophisticated reasoning, not necessarily a more moral decision.

**Morals.** For the purposes of this study morals is defined as the principles that guide an individual in determining what they view as right and wrong actions (Rhodes, 2010).

**Online Program.** This study will define an online program as one in which the student is not required to attend any face-to-face courses with the professor or other students. All interaction in online courses takes place virtually, and is typically in the form of e-mails or other digital communication such as discussion boards (Means et al., 2009; U.S. News, 2012). The program will be determined by the degree completion plan (DCP) that the students are following to complete their degree.
**P Score.** The $P$ Score is a score produced by the Defining Issues Test (DIT2), which is a measurement of the importance individuals place on the two highest stages of moral development (Jones, 2008). Higher $P$ scores reflect a greater level of principled moral reasoning and less reliance on more self-interested considerations (Jones, 2008).

**Summary**

The high-profile nature of some of the more recent business scandals has put a renewed focus on the potentially widespread harm caused by unethical decisions by business managers (Engelen, 2007; Knapp & Knapp, 2007; Persons, 2009; Shurden, Santandreu, & Shurden, 2010). In order to understand how to positively influence future managers to make ethical decisions it is necessary to understand how all individuals assess moral situations and what values and factors determine our moral decision making. Kohlberg (1979), in building on the work of Piaget (1965), proposed his theory of Cognitive Moral Development in which he described a series of stages through which individuals grow in their ability to assess moral situations through moral reasoning. This moral reasoning changed and proceeded in coordination with the cognitive ability of the individual to assess a greater variety of moral situations. According to Kohlberg (1976) when an individual is confronted with a situation that does not fit into their previously held beliefs of how to handle moral situations the individual experiences cognitive dissonance which must then be resolved. This resolution occurs when the individual is able to expand their moral reasoning to accommodate the new situation. The resulting change in moral reasoning is measured and fits into a series of stages (Rest, 1985) that determine the level of moral reasoning used by the individual. Research into Kohlberg’s theory of Cognitive Moral Development has shown that education is one of the primary
drivers of cognitive dissonance and the development of moral reasoning (Cain & Smith, 2009). This has led to further research into what aspects of education are primarily responsible for the cognitive dissonance and moral development. The rationale is that the more that we are able to understand what impacts moral reasoning the more that we can focus on that aspect of education to train future business leaders, thereby avoiding unethical decisions by business leaders and society (Taneja, Taneja, & Gupta, 2011).

This study focuses on the format of educational delivery for undergraduate business students. The growth of online programs in the United States and all over the world (Allen & Seamen, 2011; U.S. News, 2012) necessitate further study into whether or not this new educational delivery format produces the same changes in moral reasoning in individuals as the traditional, and more highly researched, face-to-face undergraduate business programs. The resulting research questions and hypotheses are to determine any correlation between the format of the program and the moral reasoning of the students in that program. This study makes use of a survey instrument called the DIT as a measurement for the moral reasoning to a sample of online and face-to-face students at a large college that has online and face-to-face business programs. The data received was analyzed using a multiple regression analysis to determine any correlation between the format and moral reasoning scores. The multiple regression analysis also allows the ability to determine the strength of the correlation between the formats and the moral reasoning, as there are some students that have taken courses in both programs. Additionally, there are a few control variables for which the multiple regression analysis will help account. Conclusions and analysis on the measurements will determine whether or not the hypotheses are rejected, and future opportunities for research are presented.
Chapter 2: Literature Review

There are slight nuances in the difference between morals and ethics. Morals are those standards that are internal to the individual and arise out of an inner conviction, while ethics is the system that may develop from a particular set of standards that a culture or organization has deemed as good or bad behavior (Dantes, Lustosa, Fernandez, & da Silva, 2010). However, ethics and morals are used interchangeably, in that they both focus on what is considered good or bad in regards to human conduct. Both describe the ought that individuals aspire to when making decisions, that is, the action that most closely aligns with the ideal behavior that individuals are to pursue. This study is focused on education as a factor in developing moral reasoning in business students. This study is important as higher levels of moral reasoning correspond with more ethical behavior. The following review of the literature will establish the theoretical foundations of moral reasoning and look at the research that has helped to lay the foundation for understanding the relationship between education, moral reasoning, and behavior.

Documentation

Multiple types and sources of documentation were used in preparation for this literature review. Physical books at the local university and through inter-library loan provided access to older and non-electronic versions of important sources. In addition, ProQuest and Ebscohost in the Northcentral University online library provided access to journal articles and other scholarly material. Lastly, a subscription to scholarly journals such as the Academy of Management and the Society of Business Ethics allowed for the most recent scholarly articles to be reviewed and used as necessary. Table 1 lists the
types and sources of the references used in this literature review as well as throughout this study.

Table 1

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**Philosophy of Morality**

There are a number of philosophies that attempt to explain and describe the methods that individuals use to determine the correct action in a given situation (Botros, 2007). Approaches to ethical theories include ontological and deontological approaches, as well as relativism and absolutism (Lin & Ho, 2008). Ontological approaches are different from deontological ethical theories because the ontological approach discusses what *is*, as opposed to what *should* be. Ontological approaches are subject to the particular outcomes, situation, and the needs of a particular people for a particular time (Gill, 2009). There are a few moral and ethical philosophies that reflect this ontological approach including cultural relativism, egoism, and utilitarianism.

Cultural relativism is a description for the ethical philosophy that believes that there are no universal standards, and that ethics are a function of the conditions and social priorities of specific cultures (Nguyen, Basuray, Smith, Kopka, McCulloh, 2008). There
may be an *ought* within a particular culture, but it is not a universalized standard of behavior or morality, and no one group or society can claim that they have ideals or values that are morally superior to another (Holmes, 2007). Relativism can be found in a variety of ethical philosophies in varying degrees, and it can be found in “high context” or “low context” perspectives (Doh, Husted, Matten, & Santoro, 2010). For example, in a “high context” approach to cultural relativism describes a situation in which an individual places a high value on the ethical values of the culture in which the decision takes place (Doh, Husted, Matten, & Santoro, 2010). Conversely, “low context” are those in which a more universalist approach is used by the individual and the values of the specific culture are of lower value. This is especially problematic in international business situations (Doh, Husted, Matten, & Santoro, 2010).

Egoism is a description of a moral philosophy in which the decisions made by an individual are based on what is the best for that individual at that time (Holmes, 2007). This type of moral philosophy falls into the category of a relativistic philosophy, as it is something that may change, based on situations and environmental factors that may guide the individual in moral decisions. Egoism is a description of a particular type of moral philosophy or approach, and as we will see in later sections, this type of philosophy plays a part in the theory of Kohlberg (1976) and Piaget (1969). Egoism, along with other types of moral philosophies are not necessary mutually exclusive to an individual, and there are times in which individuals will reflect a number of philosophies, some more often than others.

Utilitarianism, which seeks the greatest good for the greatest number of people, is a philosophy that has proved insufficient in providing guidelines for future business
managers as societies seek to reduce the harm that is done by unethical business managers (Orin, 2008). Rather deontological approaches to ethics and morality have provided the practical guidance to practitioners and researchers of business ethics (Mele, 2009).

Immanuel Kant popularized the deontological approach when he proposed that the rightness or wrongness of a decision should not be judged merely by the outcome of the decision, but based upon reason, what he called the “categorical imperative” (Bell & Bryman, 2007). The approach to ethical decision-making that seeks out a universal standard outside of the unique preferences of the individual, and indeed seeks to move the individual in line with a standardized system, is described as deontological. Two of the most prominent proponents of a deontological approach to ethics are Immanuel Kant and John Rawls (Barsh & Lisewski, 2008; Jackson, 2008). In addition, the proposed research builds on a deontological approach by seeking a normative ethic. A normative approach to ethics is a methodology in which the individual has the ability to take the process and apply it to a variety of situations (Lan, Gowing, McMahon, Rieger, & King, 2007; Lin, C & Ho, Y., 2008; Sneddon, 2009).

The Cognitive Component of Decisions

Cognitive dissonance, or cognitive disequilibrium (Haan, 1985), is a key component in Kohlberg’s theory (1979) for an individual to move from one stage of moral reasoning to another (Cain & Smith, 2009). For example, when an individual is operating at a lower level of moral reasoning, they will utilize that level when assessing what is good or bad behavior. Cognitive dissonance occurs when that individual is presented with new information that stretches outside of his or her criteria of right and
wrong. The individual must adjust and expand their moral reasoning to account for the new information or new situation (Cain & Smith, 2009). This adjustment and expansion allows the person to assess a greater number of situations while maintaining cognitive equilibrium.

In addition to cognitive dissonance, the theory of reasoned action (Marshall, Akoorie, Hamann, & Sinha, 2010) and the theory of planned behavior (Ajzen, 1985; Brown-Liburd & Porco, 2011) contribute to understanding what motivates individuals in making decisions. The theory of reasoned action describes the link between the attitude that an individual has toward a behavior and the person engaging in that behavior (Elango, Paul, Kundu, & Paudel, 2010). The theory of planned behavior, similarly to the theory of reasoned action, describes the link between attitude about a behavior and engagement in that behavior (Nguyen & Biderman, 2008).

These theories are relevant because they seek to establish a predictive model for individual decision-making. This is relevant to the business researcher and practitioner, as the more that moral decisions can be understood and potentially predicted, then avoiding unethical decisions by business managers can be addressed. These theories show that individuals seek cognitive harmony and that their intentions are likely to become their behavior (Nguyen & Biderman, 2008). However, what these theories do not sufficiently address is the way in which individuals may move from certain attitudes to higher and more comprehensive attitudes about particular behavior. Nor do the theories categorize the attitudes in such a way as to be greatly assessed or measured.
Cognitive-Structural Theories

Beyond the description of what causes individuals to make decisions, cognitive dissonance or reasoned action, there are theories that seek to account for the processes of change that occurs in individuals. These types of theories are described as cognitive-structural theories (Pascarella & Terenzini, 1991), and are identified by the characteristic that they posit a series of stages through which individuals develop or grow. These stages are hierarchical, and the attainment of one is necessary for the attainment of the following or subsequent stage.

This type of cognitive development is first attributed to the writings of Piaget in his description of the stages of learning that children go through as they develop and mature (1969). Piaget described the gradual growth and moral development of an individual through a series of cognitive levels. Piaget listed out four levels that described the primary stages of development. The Sensorimotor Period, which was from birth to 2 years old, is the foundational stage. This stage is primarily the movement from physical reflexes to the ability to manipulate and combine thoughts to make decisions. The second stage is the Preoperational-Thought Period, which is typically from the ages of 2 to 7, is a description of the transition to self-centered speech. The third stage is the Concrete-Operations Period, which is from age 7-11 and is the time when children begin to formulate logical and rational arguments. The fourth stage is the Formal-Operations Period, which covers ages 11-15. This fourth stage is the stage at which individuals cannot only logically process through a situation at hand, but can also process hypothetical situations and can envision the ramifications of that hypothetical situation as a means of argument and assessment of validity. Piaget worked primarily with children,
and therefore didn’t provide the guidance or theoretical foundations for development that may occur beyond those particular stages of life (Cummings & Maddux, 2010).

Following in the footsteps of Piaget, William Perry (1970, 1981) engaged in a series of interviews with college students at Harvard. In these interviews with the students Perry sought to understand and describe the structures that individuals used to assess and understand knowledge, values, and responsibility (Perry, 1970). Perry described these structures as a *position* and not just a stage, as he felt it was more appropriately describing the place from which an individual viewed the world, and the individual’s “point of outlook” (Perry, 1970, p. 48). Perry designated a series of nine positions, which helped to describe an increasing sense of the relativity of knowledge and values. Perry labeled Position 5 as the position at which an individual determined that all knowledge and values are relative and subjective. The highest positions, Positions 7-9, were positions in which the individuals actively engaged in determining for themselves which of the values they would commit to and hold for themselves.

One of the challenges for Perry, and those that sought to test his theory is the difficulty that researchers have had in operationalizing and measuring the positions (Pascarella & Terenzini, 1991). In addition, since the initial studies by Perry were based on individual interviews it is a challenge to take large-scale samples, making the generalization of findings a challenge for the researcher. In addition, and more relevant to this study is that Perry’s theory focuses more broadly on cognitive and ethical growth and not enough on the development of the moral reasoning of the individual. This broader focus on cognitive growth does not allow Perry’s theory to relate closely enough to moral decision making to be of use for this study. However, there is another cognitive-structural
theory that serves to describe the cognitive changes that most closely relate to moral behavior and decisions. The work of Lawrence Kohlberg, and his theory of cognitive moral development, provides a closer relationship between cognitive changes and moral reasoning and decision making.

**Theory of Cognitive Moral Development**

Lawrence Kohlberg built on Piaget and moved forward with the premise that moral development occurred in coordination with development of cognitive processes (Kohlberg, 1981). In addition, Kohlberg believed that cognitive processes could develop independent of moral development. In other words, just because an individual reached a certain level of cognitive function does not mean that the person would necessarily reach a certain level of moral development (Cummings & Maddux, 2010). What was necessary, according to Kohlberg, was the experience of a cognitive dissonance that would cause the individual to reassess previous values and move into a more developed and comprehensive stage to account for the new experience or situation (Rest, 1999).

Kohlberg’s theory is not without critics (Gilligan, 1982; Liebert, 1984), but it is widely considered the primary work on moral judgment (Rest, Thoma & Edwards, 1997).

Kohlberg developed a series of six stages, which he used to describe the hierarchy of moral reasoning. The two lowest stages represent high levels of egoism on the part of the individual. Stage 1 is the Stage of Punishment and Obedience, and represents the time in a person’s life in which he or she is primarily concerned with the avoidance of pain and the advancement of happiness (Kish-Gephart, Harrison, & Trevino, 2010). Stage 2 is described as the Stage of Individual Instrumental Purpose and Exchange, and it is the stage at which an individual begins to understand that other individuals have their own
motives and that those motives can be used in mutually beneficial exchanges (Paradice & Dejoie, 1991). Stage 3 is the Stage of Mutual Interpersonal Expectations, Relationships and Conformity, and is the stage at which an individual determines right and wrong based on other people’s feelings and maintaining loyalty and trust within a society (Mayhew, Seifert, & Pascarella, 2010; Paradice & Dejoie, 1991). Stage 4 is the Stage of Social System and Conscience Maintenance. In Stage 4 the individual determines moral action based on what will uphold the social order and the duty that the individual has to the welfare of society (Traiser & Eighmy, 2011). Stage 5 is the Stage of Prior Rights and Social Contract or Utility. In this stage the individual seeks to value each member of the society equally, and to enact laws that reflect basic human rights. Stage 5 reflects recognition of an arbitrary starting point and a more normative guide for morality (Bebeau, 2008). Stage 6 is the Stage of Universal Ethical Principles. The primary values for an individual in stage are a set of universal ethical principles that are not bound by social or cultural rules. These values represent the highest good for the individual (Bebeau, 2008).

Kohlberg measured the primary stage that an individual uses when assessing good and bad behavior by providing individuals with a particular scenario and listing the primary considerations stated by the individual. One of the scenarios is titled the “Heinz” situation. In this scenario, a husband must decide whether or not to steal an expensive drug for his wife who is dying of cancer (Loviscky, Trevino & Jacobs, 2007). Kohlberg listed the items that the individual viewed to be the most important issues to be addressed when determining if the action was right or wrong. Kohlberg was not as concerned about what the final determination was for the individual, but instead, what
were the primary considerations the individual used when assessing the situation (Greene & Haidt, 2002).

Early research showed that around 20% of adults reach stages 5 and 6 in moral development (Eynon, Hill, & Stevens, 1997; Trevino & Weaver, 2003). Rest also showed that most adults do not reach the highest levels moral reasoning, and are therefore assessing decisions in a less sophisticated way than others (Rest, 1979). This is a challenging dynamic, as moral decisions are being influenced by a greater variety of intercultural and international considerations (Elago, Pauyl, Kundu, & Paudel, 2010). As the nature of business continues to expand to include ever-more widening cultural considerations, it places a greater amount of pressure on business managers to ensure that they have the moral reasoning skills to effectively navigate moral situations (Elago, Pauyl, Kundu, & Paudel, 2010).

The Neo-Kohlbergian Approach to Moral Development

James Rest, in building upon Kohlberg’s theory, sought to shore up some of the potential weaknesses and expound on the theory of Cognitive Moral Development (Rest, 1999). For example, Rest introduced schema theory into Kohlberg’s theory as a way to account for the fact that individuals that had obtained the ability to reason at higher levels didn’t necessarily mean that they did not sometimes assess situations at lower levels (Koh, 2012). Rest introduced the schema theory to show that the stages had overlapping characteristics and that the lines between the stages were not as clear as Kohlberg had envisioned them (Koh, 2012). Schema theory describes the influence that prior experiences have on the expectations an individual brings to a situation (Traiser & Eighmy, 2011). Rest believed that these schemas, residing in the long-term memory of an
individual could be activated or stimulated in order to assess the moral reasoning of an individual (Traiser & Eighmy, 2011).

James Rest (1999) divided the stages into schemas that he defined as preconventional, conventional, and postconventional. For example, in the preconventional stages, Kohlberg’s stages 1 and 2, of development, an individual is predominately concerned with self-interest and whether or not decisions create an immediate benefit or harm for himself or herself. Kohlberg’s stages 3 and 4 are described as the conventional level of development when an individual seeks to maintain the social norms of society. At the highest postconventional stages, Kohlberg’s stages 5 and 6, individuals are less concerned with the social norms, but are concerned with moral principles that represent basic rights that supersede society (Bailey, Scott, Thoma, 2010). The following stages and schema are used to describe the development that an individual goes through in the area of morality.

**Personal interests or preconventional level.** The preconventional level of moral development is a schema of the first two stages that an individual goes through and are associated with the basic cognitive processes of childhood (Kohlberg, 1984). This level is described as a heteronomous morality (Lovinsky, Trevino, & Jacobs, 2007). In the first stage the individual makes decisions based on knowledge of the punishment that is associated with the action. The primary reason for acting or behaving in a moral manner is the avoidance of punishment, and the understanding of the power that authorities have over the individual (Kohlberg, 1984).

The second stage in the preconventional level is the individualism stage. In this stage the individual begins to understand that there are other individuals who also have
unique needs and desires (Stephan, 2007). This stage is concerned with the idea of fairness and ensuring that what is granted for one should also be granted for another. The individual still has selfish motives and seeks out his or her own interests, but there is also recognition that others have interests as well (Lan, Gowing, McMahon, Rieger, & King, 2008).

**Maintaining norms or conventional level.** In this level there are two stages. The first stage in this level, and the third overall, is the understanding that mutual interpersonal expectations exist. These expectations are based on the individual keeping a positive perception in the eyes of others with whom the individual is surrounded. For example, an individual would seek to be seen by his or her authorizes as being good. This is a standard that is sought by the individual based on the broader interpretation of individuals close to him or (Bailey, Scott, & Thoma, 2010).

The fourth stage, and second stage in the conventional level, is the understanding of a broader social system that contributes to the betterment of a society. In this stage the individual understands that he or she is a part of a society that has an agreed upon set of laws and regulations (Rodriguez-Dominguez, Gallego-Alvarez, & Garcia-Sanchez, 2009). This stage is broader than the third stage, in that the individual begins to see his or her place in the entire system.

**Postconventional or principled level.** The fifth and sixth stages of Kohlberg’s theory are based on a postconventional schema or principled approach to moral understanding. The fifth stage is one in which the individual is concerned not only with the adherence to the laws that are agreed upon by the society but also with an eye toward the individual rights of each person. However, this does not mean that the individual is
more important than the group. In fact this stage is the introduction of a utilitarian approach (Reidenbach & Robin, 1990) when assessing the reason for performing a particular action. This stage also understands that there are individuals who hold to different views than those upheld by the particular society of which he or she is a part, but once a part of the particular group, the individual is obligated to acquiesce to the rules and regulations set forth by the majority group.

The sixth stage is concerned with universal ethical principles (Kohlberg, 1976). This stage is one in which the individual recognizes that there are certain rights that are not determined by culture or nation-specific guidelines. The individuals who approaches moral decisions in a manner consistent with the sixth stage are those more committed to personal principal than to social agreements, because they believe that the universal principles are superior to the social and legal parameters (Kohlberg, 1976). As shown in Table 2 there are six stages, which are categorized into 3 schemas, used to describe the primary considerations and motivations used when assessing moral situations (Kohlberg, 1976; Rest 1999).

Table 2
*Description of Stages and Schema*

<table>
<thead>
<tr>
<th>Schema</th>
<th>Stage 1</th>
<th>Stage 2</th>
<th>Stage 3</th>
<th>Stage 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Interests</td>
<td></td>
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</tr>
<tr>
<td>Stage 1</td>
<td>Focuses on the immediate negative or positive impact of an action on the actor.</td>
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<tr>
<td>Stage 2</td>
<td>Focuses on direct advantages to the actor and on the fairness of simple exchanges, of favor for favor. Conforms in order to receive rewards.</td>
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<td></td>
<td></td>
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<tr>
<td>Maintaining Norms</td>
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<tr>
<td>Stage 3</td>
<td>Focuses on good and evil intentions of the parties, on the party’s concern for maintain friendships and good relationships, and maintaining approval. Behaves morally in order to gain approval.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage 4</td>
<td>Focuses on maintaining the existing legal system,</td>
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</table>
existing roles, and formal organizational structure. Conforms to authority in order to avoid censure and guilt.

Postconventional Stage 5
Focuses on organizing a society by appeals to consensus, due process, and safeguarding of rights. Concerned with individual rights and democratically decided laws.

Stage 6
Focuses on organizing social arrangements and relationships in terms of intuitively appealing ideals (justice, etc.). Guided entirely by conscience.

In an effort to expound on the theory of cognitive moral development, Rest (1999) developed an instrument that measures the stage that an individual primarily uses when considering moral situations. This instrument is called the Defining Issues Test (DIT2) test (Rest, 1999). In using the DIT2 test, researchers have identified that education affects the movement from one stage of morality to another in an individual (Rest, 1999). These studies have researched the content of the education (Waples, Antes, Murphy, Connelly, & Mumford, 2008) as well as the way in which the education is structured (Cain & Smith, 2009; Petrova & Sinclair, 2005). Psychological research related to moral development has been especially relevant to the base of knowledge in this area (Kohlberg, 1976). However, there has been little crossover from the psychological research on moral development when applied to business education (Doh, Husted, Matten, & Santoro, 2010).

Rest’s Four-Component Model

In an effort to create a description for how individuals process and engage in behavior, James Rest developed a four-component model of moral behavior (Bailey, Scott, Thoma, 2010). In Rest’s model the four processes work together to drive an individual as they assess moral decisions. The four-components are moral sensitivity,
moral judgment, moral motivation, and moral character. These components begin with the recognition of a moral decision and end with a decision to move forward with a particular behavior. There are a variety of approaches to understanding moral behavior, and the four-component model was an attempt by Rest (1999) to synthesize these various approaches into a unified model. The four-component model helps to explain why the DIT and moral reasoning do not fully correlate with behavior in every instance (Rest, 1999). Each component is described in greater detail below.

**Moral sensitivity.** The first component is moral sensitivity. Moral sensitivity is the ability for an individual to recognize that a moral dimension or aspect is present in a situation (Comegys, 2010). For example, an individual may look at a decision about whether or not to purchase a particular brand of coffee over another. If the individual takes into account whether the coffee was grown by a company that had unfair labor practices then that individual would be applying a high level or moral sensitivity to the decision. Moral sensitivity can be impacted by a number of variables including courses in business ethics (Comegys, 2010) and gender (Simga-Mugan, Daly, Onkal, & Kavut, 2005).

Moral sensitivity to a situation does not mean that the individual has a particular direction with which to act, but that he or she simply recognizes that there is an ethical or moral aspect to a decision that must be taken into account. Moral sensitivity is an aspect of ethical behavior that naturally precedes the other components, as what is recognized is the precursor to reasoning, judgment, motivation, and perseverance (Rest, 1999). However, an individual moves through the components in differing ways and time
frames, so the primacy of moral sensitivity isn’t necessarily specifically temporal or chronological (Rest, 1999).

**Moral judgment.** Moral judgment is the second component in Rest’s four-component model and is a description of the processes that an individual uses to determine which action is most justifiable in a particular situation. It is in the component of moral judgment that moral reasoning is utilized, and in which the DIT is engaged (Lovinscky, Trevino, & Jacobs, 2007). Moral judgment is the component of the decision-making model that is concerned with the process in which the individual uses a particular strategy to determine what is the right and what is the wrong course of action in a particular situation (McMahon, & Cohen, 2008).

It is in the moral judgment component that the moral reasoning aspect of decision-making resides. Moral reasoning is the foundational aspect of moral judgment. Moral reasoning is the process and set of values that an individual would use to develop a judgment about what is the morally ideal outcome (Bailey, Scott, & Thoma, 2010). The moral reasoning component of moral judgment is what is measured by the DIT and is the focus of this study. As an individual gains new experiences and engages with new situations that are inconsistent with his or her previous understanding of moral decisions the disequilibrium pushes an individual into a higher and more developed stage of moral reasoning (Traiser & Eighmy, 2011). This change in moral reasoning affects the judgment and decisions of the individual. In Rest’s 4-Component Model of moral behavior this judgment impacts the decision when tied to moral motivation, moral sensitivity, and moral character (Traiser & Eighmy, 2011). Moral judgment is the most
common indicator of an attitude (Nguyen & Biderman, 2008), and while not exclusively responsible for a decision, a change in the moral reasoning affects the final decision.

**Moral motivation.** The moral motivation component, also described as moral intention (Kish-Gephart, Harrison, & Trevion, 2010), is a description of the intention that an individual has to act in a virtuous manner (Bailey, Scott, & Thoma, 2010). It is also the component at which an individual assesses and prioritize the values that are determined to exist in a given situation (Warnell, 2011). When a person views a particular situation and identifies that there are moral aspects to the situation he or she will have to determine and prioritize any competing values in order to determine the best possible action. It is in this third component of moral motivation that this process takes place. For example, suppose an individual determines, through moral judgment, that he or she should spend more time with their family. Then suppose that individual develops a motive to spend the weekend with their family. The stage at which the individual is motivated to develop a plan of action is the moral motivation piece of Rest’s Four-Component model (Gill, 2009). When an individual experiences a change in moral judgment he or she experiences a change in moral motivation as well (Gill, 2009).

A challenging piece of the moral motivation component is determining the driving force of the motivation. In other words, what causes an individual to act in a manner consistent with the moral judgment determination? Moral motivation can be connected to egocentrism, and may have internal or external factors, or whether or not the individual is self-consciously making the decision to move in a particular direction. Again, as with the other components, this process may or may not occur chronologically
in the overall thought process, but it does contribute to the other components to help the individual determine the optimal behavior in a situation.

**Moral character.** The fourth component in Rest’s (1999) model is the moral character component. This aspect of moral decision making describes the persistence and determination that an individual attains to see the action through to completion (Brown-Liburd & Porco, 2011). In the example described in the previous section regarding the motivation of an individual to spend more time with his or her family, the moral character is the commitment and persistence that the individual would possess to see that decision out to conclusion. The moral character will determine if the individual is easily dissuaded from accomplishing the end goal or whether they are able to push through adversity or resistance to completion.
Figure 1. Rest’s Four-Component Model (Thoma, 2006). This figure shows the relationships between components in Rest’s Four-Component Model.

This relationship between the four components in Rest’s four-component model is displayed in this figure as being one of interconnectedness and interdependence. Each of the components can influence other components, eventually culminating in the decision of the individual.

Criticisms and Limitations of Kohlberg’s Theory

Kohlberg’s theory has been criticized on a number of issues. Some of the criticisms have necessitated adjustments to the theory and others are worthy of an acknowledgement of the limitations of the theory (Rest, 1999). For example, Kohlberg’s theory only focuses on one component of moral behavior, moral judgment, while it does not take into account moral sensitivity or moral motivation (Warnell, 2010). While this is an acknowledged limitation of the theory, and the resulting DIT2, it does not invalidate the theory. Moral sensitivity and motivation are part of the psychology processes surrounding moral behavior, but those aspects are outside the scope of the theory (Mayhew & King, 2008).

Another criticism of Kohlberg’s theory, which has led to adjustments of the theory, was that when Kohlberg tested the theory there was a surprising lack of respondents scoring in stage 5 or 6 (Snarey, 1985). The creators of the DIT2 (Rest, 1999) believed that Kohlberg adhered too strictly to Piaget when he described and defined the stages of moral development. By loosening the stages and providing more broadly defined schema of development, the creators of the DIT2 posited a neo-Kohlbergian approach to measuring and understanding moral judgment (Rest, Narvaez, Bebeau, &
This new approach kept the fundamental theory of stage and stage progression via cognitive changes, but allowed for a bit more flexibility in assessing the stages. This led to the inclusion of schema theory into Kohlberg’s theory.

Additionally, Emler, Renwick, & Malone (1983) criticized the DIT as being less of an indicator of moral reasoning and instead being an indicator or political ideology or beliefs (Brown-Liburd & Porco, 2011). Emler et al., (1993) found that an individual that reasoned at the maintaining social order, stage 4, could do so without necessarily comprehending and using more sophisticated moral reasoning. However, later research by Bailey, Phillips, & Scofield (2005) reported that the effect of political bias is small and that DIT and DIT2 scores are not significantly threatened by this bias.

Moral Reasoning Scores and Demographic Characteristics

Moral reasoning and gender. Gender is one of the most researched factors related to ethical decision making (Roxas & Stoneback, 2004). However, there are mixed results in understanding how gender contributes to ethical decisions, and the results of the research may show more about the nature of the measurements being taken, and the theory behind the measurement, than potential differences in the genders (O’Fallon & Butterfield, 2005). There were responses by some researchers to Kohlberg’s theory that believed the theory of CMD to be flawed due to the lack of female respondents to Kohlberg’s initial research (Loviscky, Trevino, & Jacobs, 2007). One of those individuals was Gillgan (1983) who believed that women and men differed in their moral reasoning and this meant that they would score differently in the reasoning scale that Kohlberg developed (Kujala & Pietlainen, 2007).
Gilligan believed that the CMD theory weighted justice theory more highly than other theories, such as care theory (Kujala & Pietlainen, 2007), and that since men tended to reason in a manner more in line with justice theory the CMD and the resulting DIT was fundamentally biased against women. Walker (2006) later concluded that the claim that the ethic of care is not adequately accounted for in Kohlberg’s theory lacks empirical evidence. In care and social role theory, women are positively valued by a society as being more relational and sensitive to social issues (Nguyen, Basuray, Smith, Kopka, & McCulloh, 2008). Conversely, men are valued and encouraged by society to have more aggressive and success-oriented attributes. This socially-directed identity of females and males displays itself in measurements of empathy toward business clients or customers (Nguyen, Basuray, Smith, Kopka, & McCulloh, 2008). Thoma (1986) performed a meta-analysis of over 50 DIT studies and concluded that there was little support for the claim that justice-based theories of morality put women at a disadvantage. However, there is research that shows that there does exist some differences in the moral reasoning of the genders (Bernardi, Metzger, Bruno, Hoogkamp, Reyes, & Barnaby, 2004), but Rest (1986) described these differences as trivial.

Research that has measured ethical orientation, using the Multidimensional Ethics Scale (McMahon & Harvey, 2007), has shown that women can have higher ethical judgment than men (Nguyen, Basuray, Smith, Kopka, & McCulloh, 2008). While this may be true of ethical orientation, in the measurement of moral reasoning, research has shown that males and females both reason using care and justice, and that there is no consistent evidence that differences in gender affect moral reasoning scores (Cain & Smith, 2009; Walker, 1986, 1989). Archer and Waterman (1988) also concluded that
there was no difference in the cognitive moral development between men and women. The results of research related to gender differences throughout the moral reasoning and cognitive moral development stages are not conclusive. However, the research most relevant to this study is by Paradice and Dejoi (1991). In their study they concluded there was no significant relationship between moral reasoning scores and gender in business students (Paradice & Dejoi, 1991).

**Moral reasoning and age.** The relationship between age and moral reasoning is a logical conclusion of CMD theory, as the cognitive development of the individual increases with age the ability to reason at a higher level should also increase. However, the research regarding the exact nature of the relationship between moral reasoning and age is inconclusive. For example, research related to the age of individuals has been shown to have a positive relationship with moral reasoning scores in both males and females (Steele & Martin, 2011). In addition, longitudinal studies have supported the conclusion that age is a statistically significant factor in moral reasoning scores (Colby & Kohlberg, 1987).

Research has shown that older respondents to the DIT tend to exhibit higher levels of moral reasoning (Deshpande, 1997; Ponemon, 1992; and Ruegger & King, 1992). However, studies have also shown that as individual get older their moral reasoning scores can actually decline as well (Bigel, 2000; Elm & Nichols, 1993; Eynoon, Hill, & Stevens, 1997). This is an interesting study as it has implications regarding those that are in the highest levels of management, since they tend to be older than those that they oversee (Herington & Weaven, 2008).
O’Fallon and Butterfield (2005) performed a synthesis of research related to age and found conclusions of the studies were mixed. In their research, O’Fallon and Butterfield (2005) found that some studies reported no significant differences between age categories, some studies reported a positive relationship between age categories, and some studies reported a negative relationship between age categories and moral reasoning scores. An especially relevant study was published in 2009 by Devonish, Alleyne, Cadogan-McClean and Greenidge, in which they administered a survey to undergraduate students in Barbados. The survey sought to test whether certain student demographics affected the likelihood that the individuals would engage in unethical behavior. The demographics measured were age, gender, religion, program of study, and number of courses taken that contained ethics. The study showed that gender, program of study, religiousness, and number of courses taken that contained ethics significantly impacted the intention to engage in ethical behavior. However, the variable of age did not have a conclusive effect on the intention to engage in ethical behavior. It is also interesting that in this study, they focused on residential programs of study.

Rest, Davison, and Robbins (1978) studies age trends in judging moral issues specifically in relation to the DIT. In this study Rest et al. (1978) reviewed cross-sectional, longitudinal, and sequential studies that used the DIT. In this review Rest et al. (1978) looked at the impact that age and educational level had on DIT scores in a variety of studies. They concluded that the relationship between years of education and moral reasoning scores was stronger than the relationship between age and moral reasoning scores. In addition, they concluded that after the end of formal education the moral reasoning scores generally plateaued. The review of sequential studies showed that the
generational effects do not account for the age trends in moral reasoning scores. These conclusions support the validity of Kohlberg’s theory of Cognitive Moral Development as well as the validity of the DIT as a reliable assessment of moral reasoning.

Steele, Branson, and Martin (2011) studied the moral development of accounting and business students in relationship to gender, age, level of education, and field of work experience. In their study Steel et al. (2011) hypothesized that age would not be a significant predictor of moral competence scores of the sample of students. The moral competence scores were obtained by the use of the Moral Judgment Test (MJT). While MJT is not the same test as the DIT, it is based on Kohlberg’s theory of CMD and measures the attitude and competency component of morality in an individual. The study did bring up an interesting aspect about studying age as variable in moral development. Steele et al. (2011) state, “It is unlikely that one can gain more education or work experience without having also gained more years of age. This confounding makes the influence of age in moral reasoning difficult-if not impossible- to statistically segregate.” (p. 45). However, in their study Steele et al. (2011) were not able to reject the null hypothesis that age would not impact the moral development of the respondents. So in this particular study at least, age did not have a significant influence on the moral development of the individuals.

While evidence that age is directly related to moral reasoning is not conclusive, it is included in this study as a way to contribute to the understanding of moral development and the potential impact that age has on moral reasoning scores (Herington & Weaven, 2008). Although, in assessing and analyzing the results of the survey it is important to keep in the difficulty highlighted by Steele et al. (2011) that it is difficult to
separate age from educational level and work experience, as those items are so closely related that it is challenging to pull single out the variable of age for exclusive analysis and conclusion.

**Moral Reasoning Scores and External Influences**

**Moral reasoning and ethics training.** Ethics training courses and programs have increased in use over the past decade in both businesses and universities (ACBSP, 2012; Waples, et al., 2009). Recent research related to the impact of ethics education shows that there are mixed results and outcomes on individuals that go through ethics training based on a variety of factors. The size of the class for example may have an impact the effectiveness of an ethics education-training program since the smaller class sizes allow for a greater level of interaction among the participants (Waples, et al., 2009).

In addition, the focus of the ethics training is important as well. For example, if the goal of the ethics training is to simply inform the individuals of the company policies and ethics guideline it will have a particular result while an ethics training that helps individuals to understand how to navigate and approach ethical situations will have another impact on the individual (Kligyte, Marcy, Waples, Sevier, Godfrey, Mumford & Hougen, 2008). The characteristics of a program may also be effective in ethics education. Is the course a requirement for a certification for the individual, or does the company mandate it? These characteristics can have an impact on the overall effectiveness of the ethics program. As has been shown before, just because a company offers and implements a training program does not mean that the program will be effective and that the individuals will follow the training, which was the case with Enron
(Schmitt, 2002). Enron had an ethics code and policies, but that did not prevent the company managers from engaging in unethical behavior.

Especially relevant to this study is research related to the effect that online and distance learning ethics training courses have on the moral reasoning of individuals. Research related to instructing ethics in an online and face-to-face manner with the content of the stages of moral development have provided positive results (French, 2006). However, it is not clear whether these training significantly improved the moral reasoning scores of the participants, but instead showed that the individuals were able to gain a greater understanding of the way in which they processed ethical and moral situations for themselves (French, 2006). The French (2006) study was aimed at corporate ethics training programs, and it did not intend to measure the effectiveness of the training on the moral reasoning scores, but instead on the ability of the training to increase the capacity of the individuals to identify moral issues in real-world situations. This type of identification is related to the moral sensitivity stage in Rest’s Four-Component Model (Rest, 1999).

For the purpose of this study, research related to undergraduate students and ethics training through courses is the most relevant. There are different ways in which ethics education has been introduced into curriculum in the undergraduate programs. Additionally, research related to moral reasoning and DIT scores of the students as a result of the training can differ. Undergraduate accounting students exposed to ethical situations in lower level courses in the form of discussions, written assignments, and case studies or online discussions, showed no statistically significant differences in moral
reasoning scores when compared to accounting students that took the same course without the ethical components placed in the course (LaPanne, 2007).

The type of instruction for the ethics training has been studied in relation to students as well. Cagle and Baucus (2006) studied the effectiveness of case studies when trying to influence the ethical perceptions and values of business finance students. Likewise, ethics education and training that has a project-based approach to the instruction has been shown to affect the ethical awareness of students (Hoyt, 2011).

Similar research has been conducted regarding students that experienced ethics-related discussion in their core business courses (Desplaces, Melchar, Beauvais & Bosco, 2007). The results of that research concluded that there was no significant difference in the moral reasoning of the students that experienced ethics-related discussions in their core business courses (Desplaces, Melchar, Beauvais & Bosco, 2007). Research has also shown that moral sensitivity can be positively impacted by a curriculum that intentionally integrates ethics-related course outcomes and objectives (Warness, 2011).

A relevant study from Jagger (2011) shows that moral reasoning scores can be impacted differently based on student interaction with an ethics course. Jagger (2011) draws the conclusion that there is a strong relationship between moral sensitivity and moral reasoning (based on Rest’s Four-Component Model), based on the evidence that students with lower levels of ethical sensitivity did not experience the same development in moral reasoning since they were not able to identify the moral components of problems in the DIT. Jagger (2011) then proposed that ethics courses that focused on moral reasoning without taking into account the moral sensitivity component of Rest’s Four-Component Model would have a less effective course than those that focused on moral
sensitivity. The conclusions reached by Jagger (2011) are supported by other research that has shown that business ethics courses can have a positive impact on the ethical sensitivity of students (Comegys, 2010). These conclusions are also consistent with the conclusions of Rest (1988), who concluded that ethics education could influence the growth of moral sensitivity and perspectives among students. These studies show that education may have a direct link to development moral reasoning, but the link can also be indirect, in that the individual may experience an increase in moral sensitivity, which affects moral reasoning in Rest’s Four-Component Model.

Moral reasoning and work experience. Many of the recent economic challenges are a result of unethical decisions made by individuals in the business environment (Steele & Martin, 2011). It is therefore proper to look at the impact that work experience may have on moral development and moral reasoning scores. Kohlberg’s Theory of Cognitive Moral Development is based on the cognitive dissonance that occurs when an individual is exposed to a situation or experience that causes him or her to reevaluate the way in which moral issues are understood and addressed (Kohlberg, 1981). Work experience may tend to expose individuals to a higher number of ethical situations as the number of years of experience increases (Zgheih, 2005). It is therefore reasonable to expect that those individuals that are in managerial positions in a company have more experience than others in the company and have encountered a greater number of ethical situations that could create the cognitive dissonance necessary for moral development. Results of hypotheses related to this expectation are mixed, with some showing younger business persons to be more tolerant of unethical behavior (Longenecker, McKinney, &
Moore, 1989) while other studies showed there to be no difference between business students and individuals with managerial experience (Lyonski & Giadis, 1991).

Research by Persons (2009) looked into the impact that work experience, among other variables, had on the ethicality of business students. Persons (2009) used a measure of ethicality that was based on a specific code of ethics from a company and focused on a number of items that were of relevance to that particular company. For example, scenarios were presented, and answers given, on situations such as keeping accurate accounting records, confidential information, compliance with laws, and proper use of company assets. In this study, full-time work experience was positively correlated with the ethicality of the individuals as measured by the code of ethics policy from that organization. As stated in the Persons (2009) study the ethicality was determined by how the students answered the questions related to that specific company’s code of ethics. However, there was no evidence presented that showed that the students would be able to apply the same principles to a different company and obtain the same results. There was also no indication of whether the students had increased in moral reasoning or if they had simply gained an understanding of how that particular company did business and what that business expected of employees.

A study by Steele and Martin (2011) looked at the impact of a variety of variables, including work experience, on moral reasoning scores and found that work experience did not have a significant impact on the moral reasoning scores of those individuals. However, the Steele and Martin (2011) study did not taken into account a large cross section of work experiences with the organization in which the conducted their study. Those limitations make it challenging to draw conclusions on the universality
and applicability of the results. Additionally, there is a necessary relationship between work experience and age that can make it difficult, if not impossible, to separate out the variable of work experience from age to effectively analyze the impact of each on moral reasoning. Additionally, the relationship between work experience and education creates challenges, as the cognitive dissonance that produces relationships between education and moral reasoning can also exist in work experience and moral reasoning (Steele & Martin, 2011). The relationship between work experience, age, and moral reasoning is important, as increasing work experience is typically correlated with higher and more influential levels of management in an organization (Herington & Weaven, 2008).

Additionally, Steele and Martin (2007) noted that while gender differences did exist in the moral reasoning scores of individuals, as the work experience increased for the two groups the differences between their moral reasoning scores decreased. In other words, the differences between genders decreased as the work experience increased.

Although the relationship between age and work experience can make it difficult to determine where one ends and the other begins, for the purposes of this study the two variables will be assessed as separate variables, as that is the generally accepted method of measuring moral reasoning using the DIT test (Loviscky, Trevino, & Jacobs, 2007; Steele & Martin, 2011).

**Moral reasoning and college education.** Research is limited in what specific aspect of education is the primary contributor to the movement from one stage of moral development to another. For example, the environment in which an individual learns and grows has an impact on the perspective that an individual has regarding global and social norms and rules (Leach & Oakland, 2007; Stansbury & Barry, 2007; Taft & White,
2007). Whether or not the environment contributes to the moral development to a greater extent than the course content that an individual studies is still relatively unknown. This particular study seeks to contribute to the understanding of that dynamic.

Rest (1979) has noted the relationship between ethical viewpoint and educational background. There is an abundance of research and evidence that shows the correlation of education to ethical perception, and education has shown to be one of the strongest catalysts for moral development and moral reasoning in individuals (Thoma, 2006). Mayhew, Seifert, and Pascarella (2010) state, “College-going promotes the development of moral reasoning, especially among tradition-ally aged undergraduate students and that such growth is not attributable to general maturation” (p. 359). For example, individuals that are enrolled as freshmen used higher level moral reasoning 34.11% of the time while graduate students used higher level reasoning in moral issues 35.97% of the time (Dong, 2011). The ability to directly influence moral reasoning scores of college-age students with educational interventions is consistent with the meta-data presented by Dong (2011) that shows that moral reasoning scores tend to increase as individuals move through higher levels of education. It is because of this dynamic that education has been shown to be one of the major influences of moral reasoning development, with (Boughmama, 2011; King & Mayhew, 2002; Steele, Branson, & Martin, 2011). This relationship between the moral reasoning of those that pursue college education and those that do not has led to a number of research studies into the nuances of this dynamic.

Mayhew and King (2008) list the changes in ethical outlook that college students have from one semester to the next. In addition to ethical outlooks, the ethical perception of an individual has shown to be influenced by peers (Colby & Sullivan, 2008; O’Leary
& Pangemanan, 2007), which is a part of the college education experience. A correlation between the code of ethics for a university and the perceptions of the undergraduate students has also been established (Comegys, 2010; Desplaces, Melchar, Beauvais, & Bosco, 2007). This impact on moral reasoning due to the influence of a code of ethics is not exclusive to institutions of higher learning, but also takes place in the corporate world, and has been shown to impact ethical perceptions (Mckinney & Moore, 2008).

One of the aspects of college education that has been shown to influence moral reasoning is the ability to work with others on a project or assignment. Working in groups may help moral development and moral reasoning (O’Leary & Pangemana, 2007; Revoir, 2011). This aspect of college education is a part of the moral development that will be discussed in the section on the relationships between socialization and moral reasoning. This socialization aspect of college education is interesting, as it is not something that can change from person to person. Specifically, involvement in co-curricular activities at college has been shown to impact moral reasoning (Mayhew, et al., 2010). Additionally, there are aspects of college that influence individuals in a number of different ways, such as involvement in intramural sports or fraternities and sororities, that differ from person to person and may not influence any two people in the same way (Mayhew, Seifert, & Pascarella, 2010). This socialization aspect of college is also part of this study, as the socialization of face-to-face and online students is different. This is due to the fact that the face-to-face students are in a much more uniform learning environment than the online students. This aspect of moral reasoning, will be discussed further in the coming section on socialization.
Some research has focused on field of study of the students in an effort to understand any potential correlation between the major that the students pursue and higher moral reasoning. For example, Cummings, Maddux, and Cladianos (2020) found that in education, students’ moral reasoning scores could be increased with intentional educational interventions when compared with control groups of students in courses that did not specifically seek to increase moral reasoning. Similarly, nursing students in Finland were studied using the DIT and the research showed that those students that were in their last year of school were more likely to rely on higher postconventional moral reasoning than the first-year students (Auvinen, Souminen, Leino-Kilpi, Helkama, 2004).

Business education has received increased attention from researchers in light of the recent business scandals and the widespread impact of decisions made by business managers on stakeholders (Desplaces, Melchar, Beauvais & Bosco, 2007; Bosco, Melchar, Beauvais, & Desplaces, 2010). Research by Bosco, Melchar, Beauvais & Desplaces (2010) showed that the pedagogical method used to teach ethics to business students could have an impact on the moral reasoning and development of the students. For example, engaging students in ethics-related discussions was more effective than merely listing ethics as a part of the syllabus. The students that engaged in ethics-related discussions in courses in which ethics was not explicitly listed had higher levels of moral development than students that were enrolled in courses explicitly devoted to ethics. This research appears to support the inclusion of ethics discussion and training as an integrative part of business curriculum as opposed to having business ethics exclusively as a stand-alone course in the curriculum (Bosco, Melchar, Beauvais, & Desplaces, 2010).
The social impact that accounting ethics has had due to recent scandals involving business managers has led to a number of studies that have researched the moral reasoning of accounting students, as these individuals will be in positions that will encounter numerous ethical issues (Brown-Libur & Porco, 2011; Dantas, Lustosa, Fernandes, & Silva, 2010; Jeffrey, 1993; Kerr & Smith, 1995). The research of moral reasoning of specific majors is not specific to accounting, but also has been expanded to include business majors as well (Lan, Gowing, McMahon, Templin, & Christensen, 2009; Rieger, & King, 2008). The research is mixed with whether or not business majors exhibit lower or more principled moral reasoning than other majors (Pascarella & Terenzini, 1991), with some of the research showing that there is a decrease in moral reasoning for business student through college (McNeel, 1994), while other studies showed that there is an increase in moral reasoning among business students, with accounting students showing higher moral reasoning than their peers (Jeffrey, 1993). Recent research by Lopez, Rechner and Olson-Buckanan (2005) showed that formal business education could decrease business students' acceptance of unethical behavior. However, as stated previously, the data regarding whether or not business students display higher, lower, or consistent moral reasoning and development scores as other academic majors in college is inconclusive (Pascarella & Terenzini, 1991).

The research related to college education and moral reasoning development is consistent. The research shows that there is a highly significant relationship between the development of an individual from conventional to postconventional moral reasoning and college education. There are further studies and opportunities that examine what part of the college experience is most responsible for this development, but the evidence for the
general impact of college on moral reasoning has been established in the preceding paragraphs.

**Moral reasoning and online education.** Education that takes place when the teacher and the student are not in the same physical place has evolved from correspondence courses as the technology that creates new methods of communication has evolved (Lee & Nguyen, 2007; Means et al., 2009). This change in the nature and form of communication has necessitated research that seeks to determine the effectiveness of these methods in relation to education and learning (Cain & Smith, 2009; McMahon & Cohen, 2008; Means et al., 2009). Research has studied both the impact that online education can have on K-12 education (Means et al., 2009) as well as the impact that online education can have on undergraduate student learning and interaction (McMahon & Cohen, 2008; Kirtman, 2009).

Online education, and the effectiveness of this format, has been a source of research as more and more institutions move into this type of educational format for an increasing number of courses and programs (Means et al., 2009). The effect of this format has been studied in the context of learning outcomes (Hawkes, 2007). Kirtman (2009) recently studied differences between online and face-to-face learning. Regarding papers, there was found to be no statistically significant difference between the two groups (Kirtman, 2009), as the mean grades were about the same. Exams scores between the two groups were mixed, with the traditional students performing better on the midterm exams, but scores on the final exam did not show a significant difference between the two groups (Kirtman, 2009).
In the area of moral reasoning, research has focused on a number of variables such as assignment design (Cain & Smith, 2009), and institution type (Maeda, Thoma, & Bebeau, 2009). Information related to online education and specifically the impact that the online format has on moral reasoning scores could be found in the research of Cain & Smith (2009) in which they find that online asynchronous dilemma discussion impacted moral reasoning scores in pharmacy students as well as traditional face-to-face discussions over a period of time. While this research was able to show the ability of a single assignment to impact moral reasoning scores, it does not go far enough in determining the totality of the online educational context on moral reasoning scores in relation to the traditional face-to-face educational setting. An interesting aspect of the Cain & Smith (2009) study is the use of the asynchronous discussions that were measured. This is interesting as the use of synchronous discussions in online format can have different users and be preferred by students from different backgrounds, (Speece, 2012)

Moral reasoning and socialization. A potentially relevant variable to the moral development of an individual is the impact of socialization. The affect of peer groups on individual development, specifically with students, has been shown to be significant (Astin, 1993; Colby & Sullivan, 2008; O’Leary & Pangemanan, 2007). In spite of the evidence that peer groups and social factors have been shown to have on students, there is a lack of evidence on the type and nature of this influence and the influence that it has on moral reasoning scores (Mayhew, Seifert, & Pascarella, 2010). Weidman (1989) noted the lack of a theory development in the late 1980’s regarding the socialization of college students. Weidman (1989) sought to not just look at the description of outcomes when
assessing the psychological factors of socialization, but to contribute to the theoretical foundations of research by looking at and measuring relationships between variables. This quantitative approach helped to establish a more scientific approach to socialization research in college students. This is important, because it is the relationship between variables in college students that is the focus of this particular research. The relationship between the moral reasoning and development of college students and the educational format in which they study is the basis for this research. The socialization of the students may be a part of the total picture of how students move from one stage of moral reasoning to another (Mayhew, Seifert & Pascarella, 2010).

The potential difference between the online and face-to-face students regarding socialization is worth discussing and is relevant to this study. The previous section on moral reasoning and college education touched on the relationship between the learning and moral development. Research related to the socialization of online students shows that online students operate in significantly different environments than their peers in a face-to-face program (Holley & Taylor, 2009). These differences are found in a number of areas. For example, the place that the classroom has in the everyday life of the students in the two groups can be significant. Online students typically have full-time jobs and the time that they spend thinking about course-related items is not as high as it is with their face-to-face peers (Holley & Taylor, 2009). In addition, the fact that the online students typically hold these full-time jobs allows the learning that takes place in the working environment to have a greater impact on the individual than the socialization with other students that may occur online (McMahon & Cohen, 2008). While there has been studies that focus on the impact that a work environment can have on individuals (Kligyte,
Marcy, Waples, Sevier, Godfrey, Mumford & Hougen, 2008), as discussed in previous sections, the differences between those students that are online compared with face-to-face students has very little in the way of clarity or specific guidance.

Additionally, the impact of extracurricular activities on moral reasoning has been studied (Brown-Liburd & Porco, 2011), but the differences between what would be considered extra-curricular activities for online students is still open for research. The absence of a clear definition for extracurricular activities for an online student contributes to this lack of clarity, but this does not mean that the activities that an online student engages in may not have significant repercussions in the moral development of the individual (Roberts & Wasieleski, 2012). Brown-Liburd & Porco (2011) studied the affect that extracurricular experiences have on the moral reasoning of undergraduate accounting students. In their research Brown-Liburd & Porco (2011) looked for relationships between certain extracurricular activities and higher levels of moral reasoning. In their study they were able to see a positive relationship between volunteerism, or membership in an honor society, and higher moral reasoning scores. It would appear then, based on this research, that the moral development of an undergraduate college student is based, at least somewhat, on the factors that are outside of the course content and may be a function of course format.

The role that certain extracurricular socialization activities have in the moral reasoning of college students is still unclear. However, studies such as those from Brown-Liburd & Porco (2011) and the research being conducted in this study help to deepen the understanding of how the moral reasoning of individuals is impacted by college education. The proposed study can contribute to the research in this area by providing
analysis into the affect that the coursework has on an individual that is not part of the face-to-face residential program.

**Summary**

The work of Piaget (1969) contributed to understanding the ways in which individuals learn and grow. Piaget (1969) theorized that as individuals developed they gained a greater and greater capacity to obtain and analyze information. Kohlberg (1976) added to that contribution with an understanding of the ways in which individuals learn and grow in regards to morality, leading Kolhberg to formulate the theory of Cognitive Moral Development. The foundational research related to the theory of CMD is extensive and has been tested thousands of times for validity, applicability, and relevance. Of critical importance is the link that moral reasoning has with behavior and intent (Kish-Gephart, Harrison, & Trevino, 2010). Kohlberg established a series of stages through which an individual might progress as he or she experienced higher levels of cognitive dissonance. These stages represent an ever-expanding foundation upon which an individual assesses and determines what is the most morally correct option available in a situation.

The study of Kohlberg’s theory of Cognitive Moral Development is relevant because the link between lower levels of moral reasoning and unethical behavior (Kish-Gephart, Harrison, & Trevino, 2010) provides a strong motive for understanding how as a society we can help individuals move from lower to higher levels of reasoning. Since education has been shown to be a major component of the development in an individual’s moral reasoning (Mayhew & King, 2008) it is vital that the expanding us of educational
platforms be researched and measured to determine the impact that type and method of
education have varying degrees of affect on moral reasoning.

Research that has focused on the ability of online education to assist students in
developing a variety of educational outcomes (Means et al., 2009) has helped to provide a
greater level of understanding as to the strengths and weaknesses of online education as
opposed to a traditional face-to-face context. As stated in Means et al. (2009) the
effectiveness of online when compared to face-to-face programs should be interpreted
with caution, as the impact of the format may be confused with the “product of aspects of
the treatment conditions rather than the instructional delivery medium per se” (p. 16).

The online education of future business managers has especially become relevant,
as recent scandals have shown the impact that these individuals can have over large
groups of stakeholders (Engelen, 2007; Knapp & Knapp, 2007; Persons, 2009; Shurden,
Santandreu, & Shurden, 2010). These scandals have led to an increase in the factors that
contribute to ethical and moral decision making, with a special emphasis on the education
and moral development of business students, as these individuals characterize future
generations of business leaders. The fact that these individuals are students represents an
opportunity for them to be trained and educated in ways that benefit not only themselves
but society in general. It is this opportunity that creates a need to understand how to
produce graduates that are less likely to make decisions that are harmful to society.
Chapter 3: Research Method

Unethical decisions by business managers can harm the financial status of stakeholders (Knapp & Knapp, 2007; McGee, 2007). Kohlberg’s Theory of Cognitive Moral Development provides a framework for understanding the moral reasoning of the individual (Kohlberg, 1982). Testing of Kohlberg’s theory has shown that undergraduate education has a strong relationship with moral reasoning changes and development (Brooks, 2010; McNeel, 1994; Nkenke, 2010; Ottewill & Wall, 2002; Revoir, 2011; Thoma, 2006). Research also shows that educational delivery (Cain & Smith, 2009; Mayhew, 2012; Mayhew & King, 2008) and social interactions (Bebeau, 2008; Lovinscky, Trevino, & Jacobs, 2007) influence moral reasoning in undergraduate students.

Moreover, educational delivery is shifting, with over six million students enrolled in at least one online college class during fall 2010 (Allen & Seamen, 2011; U.S. News, 2012) and online business programs specifically showing steady growth (Allen & Seamen, 2011). Differing outcomes in online and face-to-face students is possible (Ashby, Sadera, McNary, 2011), with the two groups faring similar on some types of assignments, and face-to-face students faring better on others (Kirtman, 2009). Although students in purely online programs may benefit from increased media interaction, that benefit does not necessarily correlate with how much the students learn, and frequently used online practices may not be as effective as face-to-face teaching methods (Means, et al., 2009). Studies of educational formats have shown that an education that includes a blended approach, both online and face-to-face, may be superior to exclusively online or face-to-face methods (Ashby & Sadera, 2011; Means et al., 2009). The specific problem
is that since online business programs are continuing to increase in number if these programs are not as effective as face-to-face or blended business programs at developing students’ moral reasoning, there could be an increasing number of graduates who may be less prepared to apply ethical frameworks in their future careers (Cain & Smith, 2009; Jones, 2009; Ninneman, 2011).

The purpose of this correlational quantitative study was to determine, based on Kohlberg’s theory of cognitive moral development and the scores produced by the Defining Issues Test (DIT2) (Thoma, Derryberry, & Narvaez, 2009; Kohlberg, 1976), the impact of program format (online vs. face-to-face) on moral reasoning scores in senior-level undergraduate business majors, as well as the impact that taking courses in the alternative format has on program format as a predictor of moral development. Testing students from the same institution helped to control for confounding variables such as admissions standards and program learning outcomes (Jones, 2009; Thoma, 2006).

The predictor variables are the method of delivery for the business program, and the percentage of courses completed by the students in the alternative program. For example, a student in the face-to-face program may take online courses, and a student in the online program may take courses in a face-to-face format. These situations are examples of the students taking courses in the alternative program. In addition, demographic characteristics (age, gender, previous ethics training, and work experience) are included as predictor variables and controlled for in the assessment of the data. The criterion variable, moral reasoning, was measured by the $P$ score produced by the DIT2. The $P$ score determines the degree to which an individual uses the higher stages of moral reasoning. Higher $P$ scores display a reliance on the higher-levels of moral reasoning. A
multiple regression analysis was used to determine the affect of program and percent of courses taken in the alternative program on $P$ scores.

In order to determine the correlation that program format has on the moral reasoning of undergraduate business students the research measured, using the DIT2, the primary moral reasoning used by the students in online and face-to-face programs. Q1 assesses the correlation of program in a model that includes program and demographic characteristics. In addition, students typically take most of their courses in a single format, but students enrolled in both programs are allowed to take courses in the other program. Therefore, it was necessary to measure the potential incremental impact of online courses on face-to-face program students and vice versa. Q2 looked at the incremental impact that the percentage of online courses for both programs had on the predictive power of format on moral reasoning scores. The problem statement and purpose produce the following questions:

**Q1.** What is the relationship between program format (face-to-face vs. online) and moral reasoning, while controlling for age, gender, work experience, and previous ethical training?

**Q2.** What is the relationship between program format (face-to-face vs. online) percentage of courses taken in the alternative program, and moral reasoning, while controlling for age, gender, work experience, and previous ethical training?

The research questions presented above produce the following hypotheses for measurement and analysis.

**H1.** While controlling for age, gender, work experience, and previous ethical training, there will not be a significant relationship between program format and
moral reasoning.

\textbf{H1}_a While controlling for age, gender, work experience, and previous ethical training, there will be a statistically significant relationship between program format and moral reasoning.

\textbf{H2}_0 When controlling for age, gender, work experience, and previous ethical training the relationship between moral reasoning and percentage of courses taken in the alternative program will not be significant.

\textbf{H2}_a When controlling for age, gender, work experience, and previous ethical training the relationship between moral reasoning and percentage of courses taken in the alternative program will be statistically significant.

\textbf{Research Methods and Design}

This correlational quantitative study design used a ranking survey to measure and determine moral reasoning scores. For this study the measurement of moral reasoning was taken using the instrument of the Defining Issues Test 2 (DIT2) (Rest, 1999). The DIT2 is a slightly shorter version of the DIT and has been shown to have slightly greater reliability than the DIT (Brown-Liburd, Porco, 2011). The DIT2 was created to measure the degree to which an individual relies on a particular schema of moral reasoning, as established by Kohlberg (1976) and Rest (1999). The DIT2 test produces a $P$ score (Rest, 1999), and the higher the $P$ score the more that an individual utilizes the higher levels of moral reasoning when assessing the primary moral criteria for a situation. The use of an interval scale score allows for a quantitative analysis of the sample. In addition, in order to obtain the correlation coefficient between percentage of online courses and $P$ score, a question regarding number of online course taken was asked and measured. For the
administration of the instrument, an e-mail was sent to students. The e-mail contained a link to the DIT2. The instrument uses Survey Monkey for the collection of the responses. The e-mail was sent to a sample of students from a university that has fully online students and residential students.

Students that have enrolled in the residential program but have taken online business classes were identified, as were online students that have taken face-to-face business classes. A multiple regression analysis was performed on the data using the predictor variables of demographics, program format, face-to-face or online, and percentage of online courses taken by the individuals, and the criterion variable of \( P \) score. The analysis determined the correlation that the predictor of program format has on moral reasoning. In addition, the incremental impact of percent of courses taken has on the strength of program format as a predictor of moral reasoning was measured.

The distinction between the online and residential students was made by the degree completion plan (DCP) that the students were using to complete their degree. Students using the online DCP program are not registered as on-campus students, although they may supplement their online classes with residential courses if they choose, and visa versa for the residential students with the residential DCP. Students that are enrolled in the residential DCP may take online classes, but the online courses are taken in the environment and context of the residential program. Slight coursework differences may exist, such as electives, between the online and residential DCP, but the business program outcomes were the same for all business students.
Population

The population being studied is the undergraduate student that has chosen to pursue a degree in the area of business. This population represents the type of individual most likely to go on to engage in business activities after college and those individuals that will most likely be in positions faced with business situations that have moral considerations and ethical judgments.

Sample

The sample of students from both groups was taken from senior level (those that have completed over 90 credit hours) business majors enrolled in a full-time program at a university with both fully online and fully face-to-face business programs. The sample was taken from a population of 3,237 residential and online senior-level students who have declared business as a major, as these students are more likely than other to seek and obtain positions in business. This university was selected due to the large size of both the online and residential student body, making it more likely that a representative sample could be obtained. The demographic characteristics of age, gender, previous ethics education, and work experience were collected as controls along with the DIT2 survey instrument, as these are consistent with the literature review of potential influencers of moral reasoning. A similar study using undergraduate business students used a sample of 131 (Lan, Gowing, McMahon, Rieger & King, 2008).

A power analysis using a F-test with a linear multiple regression, Fixed model, $R^2$ deviation from 0, shows an effect size of .15 with a .05 error probability and two tested predictors for H1, shows that with a power of .80 a minimum sample of 68 is needed. A power analysis for H2, using a F-test with a linear multiple regression: Fixed model, $R^2$
increase with a .05 error probability, with an effect size of .15 and two tested predictors and six total predictors, shows that with a power of .80 a minimum sample of 68 is needed.

Materials/Instruments

One-on-one interviews serve as a viable option for many studies of ethical and moral issues (Uys, 2011), and while the original testing of Kohlberg’s theory relied on one-on-one interviews, studies have shown that the use of the DIT2, which is a multiple-choice ranking instrument, allows for a greater understanding of the postconventional thinking of the respondent (Rest, 1999). This is due to the fact that the DIT2 relies less on the verbal expressiveness and production of a response by the respondent. By relying on the recognition of the response instead of the production of a response, the researcher can obtain the tacit understandings of the individual without having to sort and categorize responses, which can introduce confounding variables (Rest, 1999).

The Moral Judgment Interview (Lovinscky, Trevino, & Jacobs, 2007) and the Defining Issues Test (DIT2) (Rest, 1999) have been developed as valid tests for measuring moral reasoning, with the DIT2 being the most widely used and accepted method of testing moral reasoning and judgment (Rest, 1999). With over 1,000 studies using the measurement, (Cummings & Maddux, 2010) the DIT2 allows for a quantitative study of moral development. The validity of the DIT2 relies on constructs including evidence of a developmental hierarchy, sensitivity to interventions, and “significant upward change in longitudinal studies”, and reliability (Rest, 1999, p. 61). Cronbach’s alpha for the DIT2 is in the upper .70’s to the low 80’s (Jones, 2009).
The DIT2 poses five scenarios to the participant and after each scenario the participant is asked to rank twelve items in order of importance when considering the correct course of action. Weighting those items that are of higher level more heavily than the lower allows the calculation of the $P$ score. For example, if a participant chose a postconventional item as most important it is given four points, second most important would be three points, third most important two points, and fourth most important one point. This weighted total is calculated into a raw $P$ score, which ranges from 0-57. The raw $P$ score is converted into a percentage from 0-95. The following is a breakdown of the relationship between the $P$ score and the primary schema used: (0-27) Preconventional; (28-41) Conventional; and (42+) Postconventional (Maitland, 2006).

**Operational Definition of Variables**

The study design used a ranking survey to measure and determine moral reasoning scores. The survey consists of five scenarios that the individual reads and then ranks a series of items according to importance they would consider when determining the most ethical action presented in the question related to the scenario. In order to address H1, the predictor variable is the program of study and the criterion variable is the $P$ scores produced by the respondents. In order to address H2 the predictor variable of percent of courses taken in the alternative program was measured in order to determine the predictive power of format on the criterion variable of $P$ scores. In addition, there are four variables that were collected and used as controls.

**$P$ Score (Postconventional moral reasoning).** The criterion variable is the moral reasoning score and is calculated as the percentage of higher level reasoning statements chosen by the respondent when answering the questions of the DIT2. The $P$ score is an
interval range from 0-95. Higher scores represent a use of higher stages of moral reasoning.

**Program of study.** This predictor variable is a categorical variable defined as either the online DCP or the residential DCP. 1=Online DCP, 2=Residential DCP. This variable will be determined via a question on the survey.

**Percentage of online courses.** This predictor variable is a ratio level variable and is the percent of online courses taken by the student and will determine the percent of courses taken in the alternative format. Percent of face-to-face courses is not necessary as a predictor variable as it is perfectly correlated with percentage of online courses and therefore unnecessary. The number is based on a scale of 0-65 hrs. Sixty five hours is the maximum number of business courses, including electives, which a business major would take in the programs. This number will be turned into a percentage (0-100) in order to draw conclusions for the hypotheses. Percent of face-to-face courses is not necessary as a variable as it is perfectly correlated with percentage of online courses and therefore unnecessary.

**Age.** This demographic variable is a demographic characteristic and will be collected as a ratio scale of 0-100 as part of the survey instrument.

**Gender.** This categorical demographic variable will be coded as a 1=male, 2=female in the survey instrument.

**Previous ethics education.** For this study previous ethics education is a demographic variable and will be a binary scale with 1= the individual has had previous ethics education and 2=no previous education.
**Work experience.** Work experience is a demographic characteristic that will serve as a ratio level control variable. The participants will be asked to list the number of years of work experience.

**Data Collection, Processing, and Analysis**

The sample was taken from a large private university that has both online and residential business students. After institutional IRB approval I was able to send out an e-mail from me to the sample of students. The DIT2 test can be administered electronically via Survey Monkey and was e-mailed to the sample of students. The e-mail to the students contained an explanation of the purpose and instructions for the survey. Also included was a link to the DIT2 test. The results of the survey were tracked in Survey Monkey and produced data in a spreadsheet format that provided the raw data for analysis. An updated and shortened version of the DIT, the DIT2 was used, which has been validated by previous research (Office for the Study of Ethical Development, 2009; Traiser & Eighmy, 2011). The DIT2 is a slightly shorter version of the DIT and has been shown to have slightly greater reliability than the DIT (Brown-Liburd, Porco, 2011). The $P$ score produced by the DIT2 is calculated based on the ranking a respondent lists as of most important to consider when assessing a moral situation. For example, if a participant chose a postconventional item as most important it is given four points, second most important would be three points, third most important two points, and fourth most important one point. This weighted total is calculated into a raw $P$ score, which ranges from 0-57. The raw $P$ score is converted into a percentage from 0-95.

The data was collected using Survey Monkey, which was then moved into SPSS for analysis and calculations. SPSS is a widely used software for data analysis. The
students were entered in a chance to win a prize for completing the test. Compensation has been used in previous studies using the DIT2 (Lan, Gowing, McMahon, et al., 2008). The DIT2 test produces an M score and performs a consistency test on the respondents that allows for the purging of invalid samples. To obtain the M score, there are items included in the ranking options that are pretentious words or complex syntax with no connection to the dilemma presented. If a respondent chose too many of these items (more than 10), then it was assumed that the respondent is being swayed by style or syntax instead of meaning. The subject was then invalidated from the analysis.

The DIT2 is owned and housed in the Office for the Study of Ethical Development (OSED) at the University of Alabama, and the data was submitted to that office for calculation as that office gives approval for the use of the DIT2.
Figure 2. Data collection process. This figure lays out the data collection process for the study.

After collecting the $P$ score for each participant a multiple regression analysis was performed between the coefficients of $P$ scores and the percentage of online and face-to-face courses completed by the two groups in order to determine a correlation coefficient between those variables. This statistical analysis was performed in order to address H1 and H2. Demographic information were collected as controls in the statistical analysis of the hypotheses.

The regression formula for the first hypothesis was $Y=a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5$. In this formula $X_1$ through $X_4$ represent the demographic predictors, and $X_5$ represents the program format predictor. For the second hypothesis the regression formula was $Y=a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_6X_6$. In this formula $X_1$ through $X_4$ represent the demographic predictors and $X_6$ represents the percent of courses taken in the alternative format. The coefficient ($R^2$) was be used to test H1 and H2. In addition an F test was used to determine the strength of $X_5$ and $X_6$ as predictors of $Y$.

Assumptions

This study assumed that the individuals that take the survey are in fact the students, as there was no way to objectively validate that the individual completing the survey is the student to whom the e-mail address is attached. This study also assumes that the participants answer the survey truthfully, however, there was a method in the analysis that helped to determine responses that appeared to be invalid. Additionally, the study assumes that the individuals completing the survey had an adequate understanding of the question, and were able to answer in a manner consistent with their actual values.
Additionally, the study assumed that the $P$ score for the population was normally distributed, obtained homoscedasticity, and that there was no or little multicollinearity or auto-correlation among the variables. These assumptions are tested in the findings.

**Limitations**

A potential issue in the validity of the study was obtaining enough responses for a representative sample. In an effort to boost the participation so that the sample was large enough to draw valid conclusions there was a drawing for two iPads that were offered to those that completed the survey. A prize drawing is appropriate in using the DIT2 (Jeffrey, 1993). The study was also limited to the moral reasoning scores and was not designed to measure any environmental factors that may be relevant to the two sample groups.

**Delimitations**

The scope of the data in this study focused on the demographic data as well as the ranking of the items in the DIT2 survey. Additionally there are a number of delimiters to the sample that narrowed the focus of this study. The use of specifically undergraduate students serves to maximize the generalizability of the conclusions, as well as the use of specifically business majors. These delimiters allow the sample to specifically address the issues raised in the problem statement and purpose. While the study was focused on the program format, there are likely other factors that may affect the moral reasoning scores of the two groups.

**Ethical Assurances**
In accordance with the ethical principles of research set forth by the American Psychological Association (2010) this study and the interaction with survey participants followed the Basic Ethical Principles found in the Belmont Report (1979) of respect for persons, beneficence, and justice guided the treatment of the respondents throughout the process. Specifically, autonomy was considered a right of each individual, and all possible harms were minimized. The use of the DIT2 survey as a humanely administered instrument has been established throughout the decades of research using this test. Participation in the survey was voluntary, informed consent was provided, and no personal information related to unique identifiers was made public. Additionally, the information in the data was only be available to those individuals directly related to the research, and utmost care was taken to make sure that any participant information was kept confidential. Informed consent was obtained from the participants prior to completion of the survey, and no survey was administered prior to IRB approval. Additionally, the data will be stored securely on a password-protected computer and will be kept for one year before being destroyed by deletion.

Summary

Rest (1999) describes the DIT2 as a way to determine the priorities that an individual uses when assessing moral decisions. Kohlberg’s (1976) theorized that as an individual develops cognitively he or she is able to reason and judge moral situations at a higher level. Education has a tremendous impact on this cognitive moral development (Thoma, 2006). However, the type of education and the method of delivery of education is an area of opportunity for research (Means et al., 2009). The goal of this study was to determine if the delivery method of the education in which a student is studying business
produces different moral reasoning scores in the individuals. By collecting the $P$ score of the individuals in two different methods of education and determining if any statistically significant differences exist it is possible to contribute to understanding what aspect of education impacts the cognitive moral development of an individual. Additionally, as the multiple regression analysis was performed on the $P$ scores of the two groups, based on the percentage of online and face-to-face courses a greater determination of the link between the format and the two groups was made.
Chapter 4: Findings

The purpose of this study was to determine the relationship between program format and moral reasoning scores in senior-level business students. Senior-level business students from online and residential programs were surveyed and the data collected for analysis. There were two guiding research questions each with a null and alternative hypothesis. The following sections provide the results of the analysis as well as the method by which the calculations were made.

The collection of data resulted in a total of 134 total responses from the population. Not all of the responses provided sufficient data for a valid \( p \) score to be obtained. The total number of business majors with valid \( p \) scores was 95, with the percentage of online and residential students being almost equally distributed, as shown in Table 3. Cohen (1988) describes the use of a small effect size as helping to avoid the influence of uncontrollable variables (Cohen, 1988, p. 25). Additionally, this sample is considered sufficient for analysis, as the reasonable sample size when measuring correlation or regression is a ratio of at least 10 participants per predictor variable (Harris, 1985; VanVoorhis & Morgan, 2007).

Table 3

<table>
<thead>
<tr>
<th>Program Format Descriptive Data</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Total Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Online</td>
<td>43</td>
<td>45.3</td>
<td>45.7</td>
<td>45.7</td>
</tr>
<tr>
<td>Residential</td>
<td>51</td>
<td>53.7</td>
<td>54.3</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>94</td>
<td>98.9</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input</td>
<td>1</td>
<td>1.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>95</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. \( N=95 \)
Analysis of the data provides summary information regarding the $p$ scores of respondents in Table 4. The mean $p$ score of 29.82 shows that the average level of moral reasoning was in the preconventional level, according to Kohlberg’s Theory of CMD (Maitland, 2006).

Table 4

<table>
<thead>
<tr>
<th></th>
<th>Age</th>
<th>$p$ Score</th>
<th>YrsWorkExp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online</td>
<td>Mean</td>
<td>35.11</td>
<td>29.2</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>37</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>Std.Dev</td>
<td>10.62</td>
<td>13.16</td>
</tr>
<tr>
<td>Residential</td>
<td>Mean</td>
<td>21.49</td>
<td>30.65</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>47</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>Std.Dev</td>
<td>1.61</td>
<td>11.53</td>
</tr>
<tr>
<td>Totals</td>
<td>Mean</td>
<td>27.49</td>
<td>29.99</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>84</td>
<td>94</td>
</tr>
<tr>
<td></td>
<td>Std.Dev</td>
<td>9.83</td>
<td>12.26</td>
</tr>
</tbody>
</table>

Note. N=95

Additionally the average Age, Percent of Program Completed in the Alternative Format and Years of Work experience between the online and residential respondents are compared in Table 4. Table 4 shows that the average age of the online students to be about 14 years older than the residential students, with the online students also having almost 15 years more work experience.

Demographic data in Tables 5 and 6 show the majority (85%) of the respondents self-identifying as Caucasian (non-Hispanic). Additionally, the majority of respondents self identified as male with about 45% self-identifying as female.
### Table 5

**Race Crosstabulation**

<table>
<thead>
<tr>
<th>Race</th>
<th>Program Format</th>
<th>Count</th>
<th>Residential</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American (Non-Hispanic)</td>
<td></td>
<td>4</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Count % of Total</td>
<td></td>
<td>4.8%</td>
<td>4.8%</td>
<td>9.5%</td>
</tr>
<tr>
<td>Asian of Pacific Islander (Non-Hispanic)</td>
<td></td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Count % of Total</td>
<td></td>
<td>1.2%</td>
<td>0.0%</td>
<td>1.2%</td>
</tr>
<tr>
<td>Caucasian (other than Hispanic)</td>
<td></td>
<td>35</td>
<td>37</td>
<td>72</td>
</tr>
<tr>
<td>Count % of Total</td>
<td></td>
<td>41.7%</td>
<td>44.0%</td>
<td>85.7%</td>
</tr>
<tr>
<td>Hispanic</td>
<td></td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Count % of Total</td>
<td></td>
<td>0.0%</td>
<td>2.4%</td>
<td>2.4%</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Count % of Total</td>
<td></td>
<td>0.0%</td>
<td>1.2%</td>
<td>1.2%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>40</td>
<td>44</td>
<td>84</td>
</tr>
<tr>
<td>Count % of Total</td>
<td></td>
<td>47.6%</td>
<td>52.4%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

*Note. N=95*

### Table 6

**Gender Crosstabulation**

<table>
<thead>
<tr>
<th>Gender</th>
<th>Program Format</th>
<th>Count</th>
<th>Residential</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td></td>
<td>19</td>
<td>19</td>
<td>38</td>
</tr>
<tr>
<td>Count % of Total</td>
<td></td>
<td>22.9%</td>
<td>22.9%</td>
<td>45.8%</td>
</tr>
<tr>
<td>Male</td>
<td></td>
<td>17</td>
<td>28</td>
<td>45</td>
</tr>
<tr>
<td>Count % of Total</td>
<td></td>
<td>20.5%</td>
<td>33.7%</td>
<td>54.2%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>36</td>
<td>47</td>
<td>83</td>
</tr>
<tr>
<td>Count % of Total</td>
<td></td>
<td>43.4%</td>
<td>56.6%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

*Note. N=95*

This data collection assumed that the individuals that took the survey were the intended respondents, and that the respondents answered the survey truthfully.

Additionally, the study assumed that the respondents understood each question that was
asked in the survey. The assumptions for the data collection held true, although there were a high number of responses that did not complete the entire survey or who answered questions in such a way as to make the data unusable. There was no information that led the researcher to believe that the assumption that each response was, in fact, the student was violated. However, there may have been a violation of the assumption that each student was fully aware of the percent of online courses they had completed, as evidenced by a high number of unusable data from that particular variable. Additionally, regarding the statistical assumptions of the multiple regression analysis, the criterion variable of p scores is on a continuous scale, The Durbin-Watson statistic for the variables is >1 which describes the independence of the observations, confirms an assumption of the distribution of the data. Additionally, a collinearity statistic showed the Tolerance and Variance Inflation Factor (VIF) between the independent variables was within the acceptable range (>0.10 and <10 respectively). Additionally, the data displays homoscedasticity.

**Results**

Table 7 provides descriptive information on the sample p scores to show how the scores were distributed and to aid in assessing the range, minimum, maximum, mean, standard deviation, Skewness, Kurtosis. This information is provided in order to determine whether or not the p scores for the sample are normally distributed. Additionally, a histogram, Figure 3, was created to display the distribution of the p scores for the sample along with a curve that shows normal distribution for this standard deviation. The histogram and Skewness in Figure 3 show that the data is moderately
positively skewed, as it is between .5 and 1.0 (Bulmer, 1979). Additionally, a Durbin-Watson test of the variables was 1.767, which indicates the residuals are independent.

Table 7

\[ p \text{ score Descriptive Statistics} \]

<table>
<thead>
<tr>
<th>( p \text{ Score} )</th>
<th>N</th>
<th>Range</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Standard Error</th>
<th>Std. Deviation</th>
<th>Variance</th>
<th>Skewness</th>
<th>Standard Error</th>
<th>Kurtosis</th>
<th>Standard Error</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>95</td>
<td>58</td>
<td>8</td>
<td>66</td>
<td>29.82</td>
<td>1.26</td>
<td>12.30</td>
<td>151.35</td>
<td>.79</td>
<td>.25</td>
<td>.29</td>
<td>.49</td>
</tr>
</tbody>
</table>

Figure 3

Frequency distribution of sample \( p \) Scores.  

\[ \text{Mean } = 29.82 \]
\[ \text{Std. Dev. } = 12.302 \]
\[ N = 95 \]
Q1 and H1 Analysis

In this section the analysis of Q1 and H1 will be presented. Q1 and H1 state the following:

**Q1.** What is the relationship between program format (face-to-face vs. online) and moral reasoning, while controlling for age, gender, work experience, and previous ethical training?

**H1** While controlling for age, gender, work experience, and previous ethical training, there will not be a significant relationship between program format and moral reasoning.

**H1** While controlling for age, gender, work experience, and previous ethical training, there will be a statistically significant relationship between program format and moral reasoning.

The calculation of the p score for each case provides the criterion variable necessary to address the research question and test the hypothesis. For H1 a multiple regression analysis was used to determine the relationship between program format and moral reasoning score when controlling for age, work experience, and previous ethical training (Table 8). The model shows that the inclusion of program format as a predictor of moral reasoning scores in senior-level business majors produces no statistically significant change in the predictive model.
Table 8
*Model 1 Summary*

<table>
<thead>
<tr>
<th></th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>R Square Change</th>
<th>F Change</th>
<th>df1</th>
<th>df2</th>
<th>Sig. F Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td>.277a</td>
<td>.077</td>
<td>.027</td>
<td>11.68944</td>
<td>.077</td>
<td>1.541</td>
<td>4</td>
<td>74</td>
<td>.199</td>
</tr>
<tr>
<td>Model 2</td>
<td>.287b</td>
<td>.083</td>
<td>.020</td>
<td>11.73303</td>
<td>.006</td>
<td>.451</td>
<td>1</td>
<td>73</td>
<td>.504</td>
</tr>
</tbody>
</table>

*Note.* N=95

a. Predictors: (Constant), EthicsTraining, Age, Gender, YearsofWorkExp
b. Predictors: (Constant), EthicsTraining, Age, Gender, YearsofWorkExp, OnlineOrResidential
c. Dependent Variable: p Score

Additionally, the relationship between program format and p score, when included with the other competing variables is expressed in the correlation coefficient summary in Table 9.

Table 9
*Model 1 Coefficients*

<table>
<thead>
<tr>
<th></th>
<th>Unstandardized Coefficient</th>
<th>Standardized Coefficient</th>
<th>95.0% Confidence Interval for B</th>
<th>Correlations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Std. Error</td>
<td>Beta</td>
<td>Lower</td>
<td>Upper</td>
</tr>
<tr>
<td>(Constant)</td>
<td>9.311</td>
<td>.789</td>
<td>-14.215</td>
<td>32.836</td>
</tr>
<tr>
<td>OnlineOrRes</td>
<td>2.583</td>
<td>.109</td>
<td>-5.081</td>
<td>10.248</td>
</tr>
<tr>
<td>Age</td>
<td>.759</td>
<td>.636</td>
<td>2.16</td>
<td>.059</td>
</tr>
<tr>
<td>Gender</td>
<td>2.732</td>
<td>.115</td>
<td>-2.808</td>
<td>8.272</td>
</tr>
<tr>
<td>WorkExp</td>
<td>-7.29</td>
<td>-.598</td>
<td>-2.06</td>
<td>-.025</td>
</tr>
<tr>
<td>EthicsTrain</td>
<td>-1.561</td>
<td>-.060</td>
<td>-7.603</td>
<td>-.043</td>
</tr>
</tbody>
</table>

*Note.* N=95

a. Dependent Variable: p Score, *= p ≤ .05
As displayed in the coefficient summary of Table 9, Program Format is not statistically significantly predictive of moral reasoning when the control variables are present. The significance of Age and Work Experience appear to have a stronger predictive impact on the moral reasoning of the senior-level business students, but the program format is not significantly predictive of moral reasoning scores with a significance that is >.05. However, the 95% Confidence Interval for B shows range that includes 0, which supports a rejection of the null hypothesis (Kish-Gephart et al 2010). However, the upper and lower range is broad, which allows the possibility that a larger sample size may show significance. An analysis of the data of this sample does not show significance of the predictor variable of Program Format and this results in a failure to reject the null hypothesis H1o.

**Q2 and H2 Analysis**

In this section the analysis of Q2 and H2 will be presented. Q2 and H2 state the following:

**Q2.** What is the relationship between program format (face-to-face vs. online) percentage of courses taken in the alternative program, and moral reasoning, while controlling for age, gender, work experience, and previous ethical training?

**H2₀** When controlling for age, gender, work experience, and previous ethical training the relationship between moral reasoning and percentage of courses taken in the alternative program will not be significant.

**H2ₐ** When controlling for age, gender, work experience, and previous ethical training the relationship between moral reasoning and percentage of courses taken in the alternative program will be statistically significant.
An analysis of Q2 and H2 requires additional computation due to missing data in the survey responses. From the sample of cases with a viable p score n=95, a total of 19 cases had data that was missing or faulty in the Percentage of Online Courses variable.

An ANOVA test (Table 10) of the data showed that no statistically significant difference ($p=.790$) exists between the p scores of the cases that had the missing “Percent of Online Courses” variable and those cases that had this variable completed.

Table 10
*ANOVA Test of Significance Between Cases*

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>10.877</td>
<td>1</td>
<td>10.877</td>
<td>.071</td>
<td>.790</td>
</tr>
<tr>
<td>Within Groups</td>
<td>14215.646</td>
<td>93</td>
<td>152.856</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>14226.523</td>
<td>94</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. N=94*

The lack of statistically significant differences between the cases allows for confidence in the coefficient produced by a regression analysis using the cases with a completed “Percent of Online Courses” variable. In order to increase the power of the analysis, and to assist in confidently measuring H2, a multiple imputation calculation was performed to help fill in the missing “Percent of Online Courses” data in a statistically reliable way (Enders, 2010; Osborne, 2013). The formula for multiple imputation was calculated based on the data available in the demographic variables of Program, p Score, Age, Gender, Years of Work Experience, and Previous Ethics Training. A regression equation for each of the demographic variables was calculated and used to create data for each case with a missing “Percent of Online Courses” variable. The inclusion of the multiple imputation data for “Percent of Online Courses” variable results in the predictive model shown in Table 11.
The model summary in Table 11 shows that the inclusion of Percent of Courses Taken in the Alternative Program as a predictor of moral reasoning scores in senior-level business majors produces no statistically change in the predictive model. The testing of H2o requires the examination of the coefficients of Percent of Program when the other variables are present. A multiple regression was performed on the data, with the inclusion of the Percent of Program data that included multiple imputation data. The coefficient of Percent of Program as a predictor variable for \( p \) score, when including the control variables, is displayed in Table 12.
The data provided in Table 12 shows that Percent of Program, when the set of control variables are present, was not statistically significantly predictive of the moral reasoning $p$ Score, with a significance that is $> .05$. The 95% Confidence Interval for $B$ shows range that includes 0, which supports a failure to reject the null hypothesis (Kish-Gephart et al. 2010). The calculation results in a failure to reject the null hypothesis, $H_2_o$.

**Evaluation of Findings**

Research has found that there is significant variation in average $p$ scores across educational institutions (Maeda, et al. 2009). However, research has also shown that the average $p$ scores for freshman students is 30.98, with a standard deviation of 13.97 (Maeda, et al. 2009). So the average $p$ score of the respondents of this study are slightly below the average. The analysis of the data did not show a statistically significant relationship between $p$ score in either program format or percent of courses taken in the alternative program. The results are somewhat unexpected, as there was an indication from the literature that the educational environment is different between the two groups and may play a part in moral development (Holley & Taylor, 2009). Additionally, blended formats have been shown to have different educational outcomes than exclusively face-to-face formats (Ashby et al., 2011). The use of the multiple imputation process to help account for missing data points was validated by checking the analysis of

<table>
<thead>
<tr>
<th></th>
<th>WorkExp</th>
<th>EthicsTraining</th>
<th>%Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>-0.753</td>
<td>-1.899</td>
<td>5.235</td>
</tr>
<tr>
<td>SE</td>
<td>0.357</td>
<td>3.098</td>
<td>8.847</td>
</tr>
<tr>
<td>t</td>
<td>-2.108</td>
<td>-0.073</td>
<td>0.114</td>
</tr>
<tr>
<td>p</td>
<td>0.039*</td>
<td>0.542</td>
<td>0.592</td>
</tr>
<tr>
<td>95% CI</td>
<td>-1.466</td>
<td>-8.076</td>
<td>-12.401</td>
</tr>
<tr>
<td>V</td>
<td>-0.041</td>
<td>4.277</td>
<td>22.870</td>
</tr>
<tr>
<td>V</td>
<td>-0.085</td>
<td>-0.043</td>
<td>-0.065</td>
</tr>
<tr>
<td>V</td>
<td>-0.241</td>
<td>-0.072</td>
<td>0.070</td>
</tr>
<tr>
<td>V</td>
<td>-0.237</td>
<td>-0.069</td>
<td>0.067</td>
</tr>
</tbody>
</table>

*Note. a. Dependent Variable: $p$ Score, *= $p \leq .05$

b. N=95
variance between the cases that had missing alternative program data and those that did not. The use of the multiple imputation method is consistent with traditionally accepted methods for addressing missing data points (Enders, 2010; Osborne, 2013).

The research related to the differences between online and race-to-face learning is still emerging, with results being mixed based on the outcome being assessed. Research by Johnson, Aragon, Shaik, and Palma-Rivas (2000) looked at learning outcomes between online and on-campus courses and found no difference between the two formats. The results of this study are consistent with that research. Additionally, research in the field of education has shown that asynchronous communication can have the same outcomes as face-to-face learning (Tallent-Runnels, Thomas, Lan, Cooper, Ahern, Shaw, & Liu, 2006). Research in the use of technology in education has used Activity Theory as a framework for learning also shows that online collaboration can have positive affects on the intellectual, emotional, and social developments of an individual (Said, Tahir, Ali, Noor, Atan, & Abdullah, 2014).

The primary strength of the analysis is that the data provided substantial support in rejection of the null hypothesis in both $H_1$ and $H_2$. However, the upper and lower range is broad, which allows the possibility that a larger sample size may show significance. The mean $p$ scores for those that identified as “Somewhat Conservative” and “Somewhat Liberal” were very close (32.29 and 33.44 respectively). The results for the genders are fairly consistent with the literature though, with the genders showing no statistically significant relationship to moral reasoning scores.
Summary

The sample size and effect size allow for confidence in the conclusions (Cohen, 1988; Harris, 1985; VanVoorhis & Morgan, 2007). Regression analysis showed that there was no statistically significant relationship between program of study, percent of courses taken in the alternative program, and moral reasoning score. The inclusion of the control variables of age, gender, work experience, and previous ethics education provided a way to help ensure that the variable of program of study could be isolated in a manner that allows for more accurate conclusions. The inability to reject the null hypothesis in either H1 or H2 allows for confidence that the data does not support a significant relationship between program format and percent of courses taken in the alternative format when the control variables are present.
Chapter 5: Implications, Recommendations, and Conclusions

Individuals make decisions based on distinct judgment and decision-making processes (Nguyen & Biderman, 2008), and this applies to moral decisions as well as other types of decisions. The research of Piaget (1969) helped to show that individuals move from lower to higher levels of judgment and decision making as they mature and grow. Previous research has shown that the primary driver of moral judgment and development is cognitive dissonance. Cognitive dissonance occurs when an individual encounters a situation that does not fit with his or her established framework of understanding (Kohlberg, 1981). The individual then must expand his or her knowledge base in order to accommodate the new information and to bring the cognitive process back into harmony or balance. Kohlberg, and prior to Kohlberg Piaget (1969), applied the concept of cognitive dissonance as a way to explain learning. Kohlberg specifically applied the concept of cognitive dissonance to moral development, which led to his creation of the Theory of Cognitive Moral Development (Kohlberg, 1979; Stam, 2007). Testing of Kohlberg’s theory of Cognitive Moral Development has shown that education is one of the primary factors that drive individual moral development (Brooks, 2010; McNeel, 1994; Nkenke, 2010; Ottewill & Wall, 2002; Revoir, 2011; Thoma, 2006). This relationship between education and moral development allows for research and understanding in what aspects of the educational process provide the cognitive dissonance necessary for moral development. Additionally, the relationship places a burden on the educational programs that are offered to future business leaders to make sure that those individuals that move and progress through business programs are
achieving the moral development necessary to allow them to make value-based judgments from a more developed moral foundation.

Business education has gone through a drastic change in the past decade. The growth of online educational institutions means that there are more and more business professionals are coming from non-traditional formats for business education. This new format raises questions as to the impact that a new educational format for business education has on the moral development of individuals who graduate from these undergraduate institutions. The rise of online education and the increase in graduates from online business schools may prove to be a problem, if the online education has less impact on moral development than face-to-face programs. The purpose of this study was to test Kohlberg’s theory of Cognitive Moral Development by using the Defining Issues Test (DIT) to determine any differences in the moral reasoning scores between online and residential business students. This study focused on the method of delivery of a business program when assessing moral development of undergraduate business students.

A sample was taken of online and residential seniors at the same college, and both groups were asked to take the DIT in order to assess and compare the moral reasoning scores of the two groups. The scores were analyzed and compared using a multiple regression analysis in order to control for the potentially confounding variables of age, gender, work experience, and previous ethics education. These variables have been shown to impact moral reasoning scores in previous and so the multiple regression analysis controlled for these in order to try to isolate the program format variable. The predictor variable was the program format and the criterion variable was the p score produced by DIT test taken by the individuals. The research questions focused on
determining if there were any differences in the moral reasoning scores between the two groups and whether or not the percentage of courses taken in the alternative program impacted the moral reasoning scores of the individuals. The following implications, recommendations and conclusions show that the data provides an advancement of the validity of the Theory of Cognitive Moral Development as well as how the data may be interpreted for use and future research.

**Implications**

The problem statement and the purpose of the study lead to the following research questions and hypotheses. Research Question 1 and the resulting null hypothesis are as follows:

**Q1.** What is the relationship between program format (face-to-face vs. online) and moral reasoning, while controlling for age, gender, work experience, and previous ethical training?

**H1.** While controlling for age, gender, work experience, and previous ethical training, there will not be a significant relationship between program format and moral reasoning.

This hypothesis was tested using a multiple regression test and controlling for the variables of age, gender, work experience and previous ethics education. Testing of this hypothesis showed no statistically significant relationship between p score and program format. These findings show that in the population of students at the same university the students who graduate with online business degrees have moral reasoning scores similar to the students who graduate with face-to-face degrees. This is an encouraging finding for proponents of online education and employers who may be looking to hire managers.
from online undergraduate business programs, as the moral reasoning score is related to
more ethical behavior.

Research Question 2 and the resulting null hypothesis are as follows:

Q2. What is the relationship between program format (face-to-face vs. online)
percentage of courses taken in the alternative program, and moral reasoning,
while controlling for age, gender, work experience, and previous ethical training?

H2_0 When controlling for age, gender, work experience, and previous ethical
training the relationship between moral reasoning and percentage of courses taken
in the alternative program will not be significant.

This hypothesis was tested using a multiple regression analysis. However, there
was the need for a multiple imputation formula to fill in some missing data due to
unusable cases. The multiple imputation procedure is considered reliable, as there was no
statistically significant difference between the mean moral reasoning (p scores) of the two
groups when an ANOVA test was applied to the two groups. Additionally the multiple
imputation process is considered a valid method for filling in missing data from cases
(Enders, 2010; Osborne, 2013). The results of the multiple regression of the cases,
including those imputed with the regression formula, showed that there was no
significant correlation between percent of online courses taken and moral reasoning
score. Since the percent of online courses taken is perfectly inversely correlated with
percent of face-to-face courses taken there was no reason to perform the test on the
percent of face-to-face courses.

These findings show no statistically significant relationship between program
format and moral reasoning scores between students who graduate from online or face-to-
face business programs, regardless of how many courses were taken in the alternative program. There are limitations to this study, primarily that the students were only from one university, and other universities may have different admissions standards or learning outcomes for the online and face-to-face programs. Additionally, there were no questions or variables tested that related to specific types of extracurricular or environmental factors that may contribute to the moral development of the individual (Holley & Taylor, 2009).

As online business programs continue to grow in popularity managers that hire graduates of these programs may have a greater level of confidence that these individuals are able to assess moral situations in a manner consistent with their peers from face-to-face programs. With the potential for harm that unethical decisions by business managers can have, this information can provide a level of sureness in hiring managers. This study also adds to the data that researchers can have in helping to determine what aspects of college education may have the most effect on moral development, as previous research describes the potential impact that external factors around an educational program may have on moral reasoning (Astin, 1993; Colby & Sullivan, 2008; O’Leary & Pangemanan, 2007). There may be social factors that are consistent across formats that assist the students in moral development, but that measurement was outside the scope of this study.

However, in many online programs there are requirements for interaction with other students in virtual chat rooms or discussion boards, and these assessments may provide non-content specific opportunities for students to be exposed to information that may create the cognitive dissonance necessary for moral development. There are opportunities for future research in this area, which will be described in the next section.
Additionally, this study was limited due to the fact that the students were all taken from the same university. Since the students likely have certain characteristics in common that led them to choose the same school it is possible that students from another institution with an online and face-to-face program would produce different results. This study also did not distinguish between business specializations such as management or marketing, and these sub-categories may produce different results in future studies.

The data from this study also aids in the knowledge that business school accrediting organizations, such as the ACBSP and AACSB, can have as they seek to determine whether or not online programs can produce the same educational outcomes as face-to-face programs. Accrediting organizations have a desire to understand potential differences in online and face-to-face courses, as that may determine how and to what extent programs receive accreditation. The effective instruction of business ethics is a priority for these organizations and this study can provide a level of confidence that the graduates of online programs can have similar moral reasoning as those students that attend face-to-face programs. The data from the sample students shows that moral reasoning, which is key measurement in the Theory of Cognitive Moral development, exists in similar levels whether or not the student is enrolled in an online program or a face-to-face program at the same institution.

The Theory of Cognitive Moral Development is interested not just in which stage of moral development an individual is at a given time and place, but also what moves that individual from one stage to another. This study was not designed to determine what other experiences, may have led the students to progress to the stage at which they were when they were assessed, but rather where they were when they obtained senior-status in
their undergraduate degree program. While research has show that education is a strong
driver of moral development, there may be common experiences among the students that
is not curricular that affects the moral developments of the individual. This opportunity
for future research is highlighted in the next section.

**Recommendations**

This study compared the moral reasoning scores of senior-level business students
enrolled in online and face-to-face programs. While the study did not show significant
relationships between format and moral reasoning scores, there are opportunities to
advance the knowledge of this topic is a significant way. Future studies should focus on
measuring the moral reasoning scores of the students as they enter the program, in the
freshman year, and determine if the online and face-to-face programs begin at different
points and whether or not they develop at the same rate. Additionally, a longitudinal
study of the same students throughout the program would help to control for any
confounding variables that could occur in a study that merely took samples from different
classes.

Future research should also seek to determine if the format of the online program
creates any significant differences in moral reasoning scores. For example, in this study
the online program had multiple students in each section, and each section had mandatory
interaction between students in online discussion boards. This type of interaction does
provide an opportunity for non-content specific information to become a part of a course
and to create opportunities for cognitive dissonance to occur outside of a required reading
or assigned textbook.
There is also an opportunity to further the knowledge of educational impact on moral reasoning by determining if there were differences between any sub categories of the students. For example, were students that were involved in non-profit or volunteer work while in school more likely to develop at a higher rate or achieve a higher moral reasoning score upon graduation? While this study does not support the belief that learning environment has a significant impact on moral reasoning, there are still opportunities to determine what aspect of the course learning process contributed most to the development. For example, were courses that had a higher level of group work correlated to higher levels of moral development, or were courses that were more focused on diverse readings more correlated to moral reasoning development. A quantitative study that focused on the personal characteristics, such as personality profile or home environment, from a sample of students in an online-only program would help to provide a greater understanding of the relationship between the contribution the characteristics of the individual has to moral development as opposed to the format of the course.

Questions such as, does the amount of content-related readings of learners in an online program differ from the readings of learners in a residential program, could help to determine if the content inside the course carries more or less weight than content outside the course. Additionally, the engagement that the student has with the online course may contribute to the moral development, and a quantitative study that looked at the amount of time spent on the course or course-related activities would assist in furthering our understanding of that relationship.

In an effort to understand the learning environments that the online students are in as they engage in online coursework could be served by a qualitative study that sampled
students in an online-only program and asked the students to rate their perceptions of what aspects of their environment contributed most to their engagement in the course, or the source of their motivation for engaging in the course material. This relationship between the learning environment and moral could begin by asking what is the relationship between the student’s perception of what led them to adjust the way in which they viewed particular ethical situations.

Research devoted to the impact of online instruction on individual learning is still growing, as the medium is relatively new to the science of instruction, and the opportunity to determine the impact that the online format has on moral development has room for development as well. There are a host of variables that are yet to be explored regarding moral development of online business students. For example, the relationship between individual self motivation and moral reasoning may be a consideration, as individuals that are more self-motivated to obtain new information via education may be more likely to encounter cognitive dissonance. This may require the use of additional instruments for measuring the motivation, but it may serve to help understand the variables that most contribute to individual moral development from one stage of understanding to another.

**Conclusions**

Kohlberg’s Theory of Cognitive Moral Development was the primary driver for this study. Since previous assessment of Kohlberg’s theory showed that formal education is one of the primary drivers for moral development and change in moral reasoning scores, this study focused on the emerging relevance of online education in an undergraduate business program. A business program was selected for study, as the
impact of unethical decisions by business managers can have a significant impact on social and financial institutions.

This study focused on assessing the potential impact of program format on moral reasoning scores using the DIT as a measure of moral reasoning. The conclusions showed that there was no statistically significant difference between senior-level students from online and face-to-face programs. Potentially confounding variables were controlled and the multiple regression analysis showed no significant correlation between program format and moral reasoning scores.

As online business programs continue to increase and develop it is important for the employers of future graduates to have confidence in the moral judgment of these students, as the potential negative consequences is significant (Knapp & Knapp, 2007; McGee, 2007). Additionally, the expansive use of the internet in training and educational programs beyond the undergraduate degree should be guided by the understanding that the online learning format can produce the cognitive dissonance necessary for moral development, although further testing is necessary to determine what specific aspects of online learning most contribute to this development.

While this study did not show any significant correlation between program format and moral reasoning there were limitations, such as the use of only school for the sample, and the lack of measurement of other environmental factors. The limitations of this study provide opportunities for further research regarding the impact that education has on moral reasoning development and which aspects of education contribute most to this development. However, this study contributes to understanding the Theory of Cognitive
Moral Development and how it applies to online education for undergraduate business students.
References


