Assessing Job Negotiation Competencies of College Students Using Evidence-Centered Design and Branching Simulations

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ASSESSING JOB NEGOTIATION COMPETENCIES
OF COLLEGE STUDENTS USING EVIDENCE-CENTERED DESIGN
AND BRANCHING SIMULATIONS

By

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The Graduate School has verified and approved the above-named committee members, and certifies that the dissertation has been approved in accordance with university requirements.
For my husband, Akil Todd Harvey, whose never-ending support, unconditional love,
and sacrifices made it possible for me to pursue my dreams.

For my parents, Masduki Hussain and Saleha Sujak, who instilled in me
a life-long passion for learning?
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ABSTRACT

The study explored the development of a valid assessment tool for job negotiation competencies using the Evidence Centered Design framework. It involved the creation of a competency model, evidence models, and task models that guided the development of a branching simulation tool to quickly diagnose college students’ knowledge and skills in job negotiation. The online tool utilized three scenarios where students play the role of job seekers negotiating with their potential future employers.

This study focused on two key behaviors in negotiation – making counteroffers and making reasonable concessions. A preliminary competency model was first developed based on a literature review of negotiation research. This model was then validated by a panel of experts. The experts also validated the evidence model (how to score performance on the simulation) and the task model (what tasks should be performed to elicit evidence of performance). These activities and the experts’ feedback for improving the prototype simulation provided content validity for the tool.

A total of 86 undergraduate and 51 graduate students participated in the study. The students completed an online tutorial, the scenarios in the simulation, a demographics survey, and two other survey instruments that provided alternative measures of negotiation abilities. Their performance on the assessment simulation was determined by their overall competency score and value of the negotiated outcome.

Students were classified as experts or novices based on their negotiation experience and knowledge of negotiation strategies. Results from the study indicated that experts performed better than novices in terms of overall competency and negotiated outcome.

The study also compared the outcomes of the assessment tool with outcomes from the alternative measures of negotiation ability (a survey on preference for competing, collaborating, compromising, and accommodating negotiation strategies and a survey to determine self-confidence in using distributive and integrative negotiation tactics). I hypothesized that students with a high preference for competing and collaborating strategies would also have higher scores from the assessment tool. On the other hand, students who indicated a high preference for accommodating and compromising strategies would have lower scores.
The results from the Preferred Negotiation Strategies survey supported my hypothesis that students who highly prefer accommodating and compromising strategies would have lower scores on overall competency and negotiated outcome. But the mixed findings for competing and collaborating preferences only partially supported my hypotheses.

I also hypothesized that students who were highly confident in the use of distributive and integrative negotiation tactics would have higher scores on the assessment compared to those who have low self-confidence. The results did not support my hypotheses because there were no significant relationships between confidence and the assessment outcomes.

Finally, the study also found that gender, expertise, and negotiation training have an effect on overall competency score and the negotiated outcome.

This dissertation provided a case study on how to develop an assessment tool that diagnoses negotiation competencies using the ECD framework. It also provided evidence of validity for the tool by demonstrating its ability to distinguish different levels of performance by expert and novice negotiators.
CHAPTER ONE

INTRODUCTION

Context of the Problem

College students graduating in today’s anemic job market characterized by massive job losses and long-term unemployment face daunting challenges in landing a job commensurate with their qualifications and training. Essentially, they are competing for jobs not only with their graduating peers but also with the huge number of more experienced and qualified workers who have been laid off. In a highly competitive environment where job offers are scarce, many of these recent graduates will probably settle for less desirable jobs and accept compensation packages that are less rewarding than those offered to their peers of several years ago.

Accepting a lower starting salary, however, can have a significant and lasting effect on a person’s earnings over the span of his or her career (Gerhart, 1990). Assuming that the average person receives a 5 percent increase each year, a 25-year-old graduate who accepts a starting salary of $50,000, for example, would earn roughly $634,000 less by the time he or she retires at the age of 65 than another graduate who starts at $55,000 (Marks & Harold, 2011). While salary increases are generally calculated as a percentage of base pay, other forms of compensation such as profit sharing, stock options, and retirement benefits are in turn pegged to base pay (Milkovich & Newman, 1987). Therefore, accepting a lower starting salary without attempting to negotiate a better deal can have long-term effects on employees’ total compensation packages.

On the other hand, those who negotiate their first job offers upon graduating from college can increase their starting salaries by an average of $1,500 to $1,700 a year (Gerhart & Rynes, 1991; O’Shea & Bush, 2002). Research on discrepancies in salaries between men and women also reported similar findings in the sense that men make more money than women because men negotiated more frequently, often asked for higher salaries, and used more effective negotiation tactics than their female counterparts (O’Shea & Bush, 2002; Stevens, Bavetta, & Gist, 1993). Therefore, even a modest negotiated increase beyond the initial job offer can have a significant impact on pay and other benefits over time.

Salary negotiation outcomes can also have lingering emotional effects. Porter, Conlon, and Barber (2004) argued that low starting salaries may cause employees to believe that they are
not being appropriately compensated for their contributions. Their perceived sense of injustice may reduce the attractiveness of the organization they work for. Curhan, Elfenbein, and Kilduff (2009) also reported similar findings—a negative job negotiation experience reduces a new employee’s satisfaction with compensation, satisfaction with the job, and also increases the likelihood of turnover after the first year of employment. It is therefore important for new college graduates and other job seekers to know how to effectively negotiate their salaries, benefits, and other terms of employment such as location and working hours that form the total compensation package.

Solid negotiating skills also benefit other aspects of job performance. They prepare employees for situations where they need to negotiate, such as dealing with suppliers, managing conflict within the organization, handling a contentious decision-making process, building alliances, managing cultural diversity, setting up new business operations in foreign countries, working with legislators, and structuring creative business solutions that receive buy-in from stakeholders (Watkins, 1999).

Literature on salary negotiation in recent years has more commonly focused on behaviors and processes that lead to effective outcomes (Extejt & Russell, 1990; Galinsky, Maddux, Gilin, & White, 2008; Neale & Bazerman, 1985; Stuhlmacher & Champagne, 2000; Weingart, Hyder, & Prietula, 1996). This body of knowledge contributes to our understanding and application of various negotiation tactics (Fisher & Ury, 1981; Kurtzberg & Naquin, 2011; Weingart et al., 1996), the dynamics of a salary negotiation process (Porter et al., 2004), and various factors that affect the negotiation outcomes (Neale & Bazerman, 1985; Stuhlmacher & Champagne, 2000; Thompson, 1990a; Thompson, 1991).

Another major area of research is the effect of individual differences on salary negotiations and outcomes. This includes research on negotiator characteristics (Barry & Friedman, 1998; Elfenbein et al., 2008), gender differences (Gerhart & Rynes, 1991; Kaman & Hartel, 1994; Stevens et al., 1993), and negotiation styles (Rahim, 1986; Shell, 2007).

There is, however, scarce research on identifying and diagnosing competencies that represent the knowledge, skills, and attributes of successful negotiators. The few studies that exist either examine negotiation competencies in a broad sense so that the tools developed could be used in various contexts (Foster & Farquharson, 2011), or are specific to a particular field, for
example, in quality improvement negotiations (Varkey, Gupta, & Bennet, 2008), and in natural resource negotiations (Gillette & Lamb, 2005).

O’Neil, Allred, & Dennis (1997) on the other hand, developed a job negotiation computer simulation to diagnose two highly specific salary negotiation skills: a) suggesting and evaluating possible options as part of the negotiation outcomes, and b) making compromises that both sides find reasonable. The study focused on negotiation outcomes (both parties reaching an agreement by making trade-offs on issues of least importance) rather than assessing the skills or knowledge needed to arrive at the outcomes. Such a narrow focus, however, may not present a complete picture of the various competencies involved in successfully negotiating salary and other employment benefits.

Negotiation is highly contextual in nature. While effective negotiators may share some common skills such as interpersonal communication and problem solving, performance is often affected by the type of negotiation, the other person’s bargaining style, the availability and accuracy of information, the power structure between the negotiating parties, and other variables (O’Shea & Bush, 2002). Thus, any form of performance assessment to determine the negotiator’s skills and attributes would also have to consider contextual factors leading to differences in performance.

Another issue to consider is the method of assessment. Most of the studies measure negotiation performance using self-reported surveys, in-depth interviews, and observations of in-class negotiation exercises. These methods, however, can be very time consuming, resource intensive, and quite impractical when assessing large numbers of college students. A more efficient tool needs to be developed so that students’ strengths and weaknesses in negotiation can be diagnosed in a quick, reliable, and valid manner.

Given the challenges mentioned earlier, a viable solution for evaluating job negotiation competencies is to use an evidence-centered design (ECD) approach to design a simulation assessment tool. This framework will guide the design and development of a simulation capable of eliciting behaviors that provide evidence of important skills and knowledge. In addition, the systematic approach to assessment design will provide principled interpretations of the evidence based on the purpose of the assessment (Mislevy, Steinberg, Breyer, Almond, & Johnson, 1999; Shute & Torres, 2011). Essentially, this approach stresses acquiring evidence and reasoning from
the evidence so that valid inferences on performance can be made from rich and complex data (Mislevy, Steinberg, & Almond, 1999).

Messick (1994) pointed out the benefits of an assessment approach that is centered on a construct. This approach places an emphasis on defining clearly what the assessment will tell us about the students’ knowledge, skills, and attributes. The key ideas of the ECD framework (Mislevy et al., 2002) are to:

- **Identify the complex of knowledge and skills from which inferences are to be made.** How should a person’s knowledge and skills be characterized to support an intended purpose, such as diagnostic feedback, a guide to further instruction, job certification, promotional advancement, administrative accountability, training guidance, or some combination of these?

- **Identify the relationships between the targeted competencies and the behaviors in situations that demand their use.** What are the essential behaviors or outcomes that provide evidence of the existence of the knowledge and skills identified? What can be seen in the real world that sets top performers apart from marginal ones (different levels of competencies)?

- **Identify aspects of a situation that lead to behaviors or job outcomes that provide evidence of the targeted knowledge and skills.** What kinds of situations or tasks can evoke the behaviors and outcomes demonstrating the targeted competencies? How should tasks be constructed and evaluated based on what is defined as evidence of competencies?

As mentioned earlier, context plays an important role in assessing negotiation skills. In a simulation, the evidence is derived from the choices made by students within the simulation based on a given context. For example, negotiating to buy a car requires different types of behaviors than negotiating a job offer. In the former, both parties seek to maximize their own personal gain. They can use aggressive negotiating tactics in pursuing their goals since they will most likely not have to interact with the other negotiator once the car purchase is completed. In a job negotiation offer, it is more prudent to use collaborative tactics during negotiation since both parties will be working closely within the organization.
Using ECD, the assessment designer first identifies the competencies to be evaluated based on the context of job negotiation performance. This enables the designer to then specify the performance claims to be made about the student in specific job negotiation situations, identify behaviors or decisions to be made by students that provide evidence for those claims, and eventually design the tasks that elicit those evidences. Using this systematic method of assessment design, the context of performance is built into the design from the start.

In other words, the proposed assessment framework constitutes a way of providing evidentiary links between behaviors and performance outcomes to specific target competencies critical in job negotiation such as using the appropriate negotiation strategies and finding solutions acceptable to the parties involved. The domain modeling at the beginning of the ECD process identifies the broad competencies followed by their sub-components (or lower-level nodes) that identify competencies at a more granular level. Problem solving in job negotiations, for example, may entail lower level nodes that assess students’ ability to identify information that justifies better employment terms, suggest and evaluate various possible options, and make compromises that are acceptable to both parties (O’Neil et al., 1997). More details on how the ECD approach will be used to diagnose competencies within job negotiation simulations will be covered in Chapters 2 and 3.

The ECD approach to assessment has been used in various academic settings to assess student performance (Buckley & Quellmalz, 2013; Hendrickson, Huff, & Luecht, 2010; Shute, Hansen, & Almond, 2008; Shute & Torres, 2011; Zapata-Rivera, Hansen, Shute, Underwood, & Bauer, 2007). Within a workplace setting, it has been used to assess Cisco network technicians (Behrens, Mislevy, Bauer, Williamson, & Levy, 2004) and architects (Bejar & Braun, 1999), as well as problem-solving capabilities in dental hygienists (Mislevy, Steinberg, Almond, Breyer, & Johnson, 1999). Increasingly, the approach is also being used to design assessments within games (Rupp, Gushta, Mislevy, & Shaffer, 2010; Shute, Masduki, & Donmez, 2010; Shute & Ventura (2013) and simulations (Behrens, Mislevy, DiCerbo, & Levy, 2011; Mislevy, 2011). This approach, however, has not been applied to the design of a simulation-based assessment tool that can be used by college students or job seekers to diagnose their level of competency in job negotiation situations.
Purpose of the Study

It is important for college students to have some job negotiation knowledge and skills before they enter the workforce. This will enable them to secure better terms of employment not just in terms of starting salaries but other job-related benefits such as working hours, signing bonuses, performance bonuses, relocation compensation, training and professional development, location of work, and many other issues. The basic knowledge and skills applied to job negotiations will most likely transfer to other forms of negotiation at the workplace and in their personal lives. Hence, being able to diagnose students’ job negotiation competencies will help the students understand their strengths and weaknesses better. They can then focus their efforts on getting help in specific areas and prepare themselves better for job interviews that eventually lead to better negotiation outcomes.

The purpose of this study is to develop and validate a simulation assessment tool to diagnose and predict students’ negotiation competencies. Using the computer-based tool, students can provide evidence of their competencies by making appropriate choices in three job negotiation scenarios.

Research Questions

This study addresses the following questions:
1. What are the core job negotiation competencies to be measured using the simulation tool?
2. How valid is this simulation tool for measuring the core competencies?
3. How do individual differences affect the outcome of the simulation?

Significance of the Study

One of the significant contributions of this study is that it will demonstrate how an evidence-based method can be used to assess a specific construct, which in this case, is the ability to negotiate better terms of employment among college students. In doing so, the study will:

a. demonstrate a systematic way of identifying core competencies and their sub-components,
b. determine the types of tasks that demonstrate those competencies,
c. identify behavioral indicators of performance, and

d. provide a practical, valid, and reliable method to automatically score those behaviors for an overall competency score and at a more granular level.

This assessment of performance at a more granular level can be used to diagnose college students’ strengths and weaknesses in job negotiation situations. This in turn enables them to focus on the weak areas and seek help or practice to improve those skills.

Additionally, academic institutions can use this tool to diagnose students’ competencies during career planning classes, identify the most common problem areas among students, and devote more time to teach more specific skills. For example, more class time can be dedicated to teaching students how to find information that strengthens justification for a higher starting salary or to identify creative ways that boost the value of the total compensation package instead of focusing only on salary.

The career center on campus, moreover, can offer this tool to help graduating students. Data collected from the use of this tool can help the career center identify common negotiation weaknesses among students. The career center can then prioritize resources to focus on the much needed areas; for example, offering workshops on active listening or more sophisticated job negotiation tactics.

Furthermore, the data collected in this study will contribute to the body of research on negotiation by identifying specific competencies that relate to job negotiation. Other research has focused on factors contributing to successful negotiation, the personal traits of successful negotiators, negotiating styles, and specific tactics. However, by identifying specific competencies in the form of knowledge, skills, and attributes and within context, researchers can gain a better understanding of how factors identified in the previously mentioned research interact to affect performance in job negotiation situations.

Finally, this study also provides insights on how to design and build an automated simulation tool using rich scenarios. The tool has potentially high assessment reliability through the use of automated scoring and a clearly thought out scoring system instead of relying on raters who assess based on observation rubrics or self-reported questionnaires filled out by students. Validity is built into the simulation through a clear assessment purpose, identification of competencies, and the evidentiary links between task performances and competencies.
CHAPTER TWO

LITERATURE REVIEW

The purpose of this chapter is to substantiate the research conducted in this study through a comprehensive literature review in several key areas: negotiation in general, job negotiation in particular, and evidence-centered design of assessment. The first section of this review examines previous research on negotiation including the definition of and the different types of negotiation. Due to the highly contextual nature of negotiation, the review then focuses on relevant research findings in job negotiations including a discussion of factors that affect negotiation outcomes. This is followed by a review of methods used by other researchers to assess negotiation performance. Finally, this review discusses the use of the ECD framework (Mislevy et al., 2002) to create a job negotiation assessment tool that is reliable and valid. The discussion examines previous studies that utilized the ECD framework to create the competency model, the evidence model, and the task model that form the backbone of a rigorous and systematic assessment design approach.

One of the objectives of this study is to design and validate a tool that can assess job negotiation competencies of college students. Negotiating the starting salary and other aspects of a compensation package can be daunting for most college students, especially those who have little to no experience in negotiation. This skill, however, is not only critical for securing a more favorable outcome in employment benefits but also as a transferable skill in various workplace situations that involve conflict or the distribution of limited resources. This leads to a review of the literature that defines the types of negotiation and identifies the determinants of negotiation outcomes, specifically in the context of job negotiations.

Negotiation

*Negotiation* is a social process by which two or more interdependent parties who have conflicting interests for allocating scarce resources make joint decisions (Brett, 2007; Pruitt, 1981). Negotiation happens in formal situations such as business and academic settings as well as during informal social interactions such as deciding where to go on vacation with the spouse or where to dine with friends (Thompson, 1990). Due to the importance of negotiation in our
daily lives, various researchers have explored the topic from diverse fields including economics, mathematics, organizational behavior, management, cognitive psychology, social psychology, political science, and sociology (Buelens, Woestyne, Mestdagh, & Bouckenooghe, 2007; De Dreu & Carnavale, 2005; Thompson, 1990a; Thompson, Wang, & Gunia, 2010).

Negotiation scholarship in these diverse fields often falls within two theoretical frameworks defined as normative and descriptive research. Normative research explores what people would do if they were rational beings with complete knowledge of information related to the negotiation situation. This type of research is derived from game theory, mathematics, and economics. In normative research people are expected to reach settlements that are pareto optimal which is an outcome that is perfect and cannot be enhanced without hurting the outcomes of one or more parties in the negotiation (Thompson & Hastie, 1990).

Descriptive research, on the other hand, recognizes that people do not always act rationally during negotiation. This area of research explores the impact of individual characteristics, behaviors, cognitive processes, motivations, and negotiation outcomes (Bazerman, Curhan, Moore, & Valley, 2000; Bazerman & Carroll, 1987; Elfenbein et al., 2008; Mestdagh & Buelens, 2003; Tsay & Bazerman, 2009). These are factors that can influence negotiators’ decision making and cause them to choose options that are not the best settlements. This literature review focuses on descriptive research that is influenced by social psychology and organizational behavior – two fields that have made significant contributions to negotiation research since the 1980s (Thompson et al., 2010).

The basic features of negotiation consist of (a) the parties involved, (b) their respective interests, (c) the process of negotiation, and (d) the outcomes derived from the process (Thompson & Hastie, 1990). A party to a negotiation refers to a person or a group of people with shared interests who act upon their preferences. A negotiation can be a transaction between two parties (a dyad) or more (multiple parties). This review focuses on two party negotiations which is more common in job negotiation situations.

The interests of the respective parties refer to their preferences on how the scarce resources should be divided. In a situation where the parties’ interests are completely incompatible, a gain of resources by one party means a decrease in resources for the other party. This type of transaction is also known as fixed-sum or purely distributive negotiation (Walton & McKersie, 1965). An example of distributive negotiation would be two parties bargaining over
the price of a house whereby the seller wants more money and the buyer is trying to get the lowest price possible.

Alternatively, a pure coordination situation exists when there is perfect compatibility between the parties’ interests. Follett (1940) highlighted this situation with the tale of two sisters who both wanted an orange. One sister wanted the juice while the other wanted the peel for cooking. Due to the compatibility of their interests, both sisters could get what they want with the whole orange instead of simply dividing the fruit in half.

In some situations, the parties’ interests are neither completely in conflict or perfectly compatible. This is also known as integrative or variable-sum negotiation (Walton & McKersie, 1965). An example would be a husband and wife who have different ideas on what the ideal vacation should be (Pruitt, 1983). The wife prefers a luxury hotel by the beach and the husband wants to spend time in a mountain cabin. Since the wife’s priority is accommodation and the husband’s priority is location, they ended up with an integrative solution by vacationing in a luxury hotel in the mountains.

Most negotiation situations are integrative in nature since people are likely to differ in terms of priorities, the risks they are willing to take, and the value they place on resources (Thompson, 1990a). Such differences present negotiators with opportunities to make trade-offs that enhance the value of the settlement for the various parties (Raifa, 1982).

The process of negotiation involves proposing offers, making counteroffers, and trying to get the other party to give in on some if not all of the issues (Thompson, 1990a). This involves communication between the negotiators and the use of specific bargaining tactics, such as making extreme demands or finding common grounds for compromise.

The last feature of a negotiation situation is outcome which is the end result of the negotiation. There are five main types of outcomes measures in negotiation research (Agndal, 2007).

a) Objective outcomes. The researcher is only interested in whether the negotiations reached a settlement or an impasse, and not the details of the actual agreement. This type of outcome is usually coupled with other outcome measures.

b) Economic outcomes. The research attempts to find the connection between characteristics or behaviors and the amount of resources claimed by each negotiator. For example, does gender play a role in securing a higher starting salary, or do job
candidates who employ competitive tactics get better salary offers than those who use a collaborative approach?

c) **Subjective outcomes.** The study asks negotiators to state their degree of happiness with the process or outcome of the negotiation. The research could also explore negotiators’ perceptions of the outcome (Thompson, Valley, & Kramer, 1995). For example, how happy (or unhappy) do negotiators feel about their negotiated salaries once they know what the other job candidates received?

d) **Negotiation efficiency.** Researchers are also interested in outcomes such as length of negotiation and the number of iterations represented by offers and concessions. For example, do more experienced negotiators reach an agreement sooner compared to novices? Do experienced negotiators reach an agreement through fewer concessions compared to novice negotiators?

e) **Type of negotiation.** Some researchers also regard the type of negotiation process as an outcome. For example, did the negotiation end up being *distributive* in nature (strictly a distribution of resources among parties involved) or *integrative* (negotiating parties found ways to create joint value or increase the amount of resources to be shared)?

Even though different negotiation situations share common features and require common skills such as communication, information seeking, and problem solving, the negotiation process itself is highly contextual. For example, negotiating the price of a used car entails the buyer and seller to maximize the gain at the expense of the other. Since there is usually no long-term relationship between the two parties, both sides could employ aggressive bargaining tactics to gain an advantage over the other. This is in contrast to a job negotiation situation where the potential employer and employee are trying to reach agreement on several issues simultaneously such as beginning salary, start date, amount of annual leave, and performance bonus. They also need to negotiate an outcome that satisfies both parties while ensuring a productive and harmonious relationship in the future.

The following section highlights research on factors that affect the job negotiation process and outcomes. Subsequently, the section proposes a model of job negotiation competencies based on current research.
Job Negotiation

Research on job negotiation over the last 25 years has found that those who opt to negotiate often increase their salaries (Gerhart & Rynes, 1991; Mark & Harold, 2011; O’Shea & Bush, 2002) and this can have a lasting impact on pay and other benefits over the span of a person’s career.

Some negotiators are more successful than others and this has led to multiple studies examining factors affecting the outcomes of job negotiations such as gender, power, experience, information exchange, negotiation style, and negotiation strategy.

Gender

A popular research topic in negotiation revolves around the issue of salary discrepancies between men and women attributed to negotiated outcomes. Gerhart (1990) showed that about a third of the pay differences between the two genders was due to the lower starting salaries for women at the time of hire. While Gerhart (1990) based his statistical analysis on data from a single large private firm which raises issues of generalizability across different industries and organizations, other researchers reported similar findings based on different research methods such as negotiation simulations in controlled experimental settings and field surveys. In these studies, men reportedly achieved better negotiated outcomes than women (Barron, 2003; Gerhart & Rynes, 1991; Karman & Hartel, 1994; Stevens et al., 1993).

Evidence suggests that women have lower salary expectations than men for the same contributions (Kaman & Hartel, 1994; Major, McFarlin, & Gagnon, 1984). They perceive themselves as being less entitled than their male counterparts to compensation and other types of rewards. When it comes to determining their own compensation or dividing profit with others, women tend to allocate less for themselves compared to men (Stulmacher & Waltons, 1999). In a study on orientation towards salary requests, Barron (2003) also provided evidence that women were less inclined than men to ask for a salary that is more than what others typically receive. They were also more inclined to feel the need to prove themselves first before asking for an above average salary. In contrast, there is evidence to suggest that men not only asked for what they think they are worth but also tend to make more favorable evaluations of their performance compared to women when performing similar tasks (Heilman, Lucas, & Kaplow, 1990). This
corresponds with the work done by Goethals, Messick, and Allison (as cited in Barron, 2003) that men may even overestimate the uniqueness of their abilities.

Other researchers have argued that the lower salary expectations of women may be due to their focus on non-monetary compensation. Women may accept lower salaries in return for better outcomes on other aspects of the job that they value such as flexible hours, job rotations, career paths, training programs, and interpersonal relationships (Extejt & Russell, 1990; Stulmacher & Waltons, 1999). Therefore, research on gender differences in negotiated outcomes should also examine non-salary components of the total compensation package.

Besides differences in expectations, the salary gap may also be attributed to the way both genders approach negotiation. Some studies provided evidence that men and women negotiate differently. O’Shea and Bush (2002) in a survey of recent college graduates found that both genders who chose to negotiate managed to raise their salary offers; however, men had relatively more successful outcomes due to the tactics they used. Men were more likely to directly ask the employer about the salary range, use active strategies such as negotiating for the highest salary possible, and not accepting the first offer made. Women on the other hand, would use peer information and published reports to determine the salary range, which indicates greater concerns for salary equality. They would also use traditional strategies such as placing an emphasis on the relevance of their education and expressing their motivation to work hard (Extejt & Russell, 1990; Karman & Hartel, 1994). These findings are similar to those by Kimmel, Pruitt, Magenau, Konar-Goldband, and Carnevale (1980) who found that women “made less use of positional commitments, threats, and derogatory putdowns” (distributive tactics typical in negotiations).

Tanner (1990) even theorized that childhood play may have set the stage for the differences in tactics used by the two genders during negotiations. According to Tanner, boys typically play in large groups and try to establish status within a hierarchy. Girls, on the other hand, play in smaller groups and place more importance on equality and intimacy. The process of achieving status advantage in a group helped boys develop tactical skills in negotiation that are more aggressive and therefore lead to better outcomes.
**Power**

Another factor that affects negotiated outcomes is the amount of power available to a person during negotiation. Keltner, Gruenfeld, and Anderson (2003) define power as “an individual’s relative capacity to modify others’ states by providing or withholding resources or administering punishments” (p. 265). The source of power most commonly studied is the negotiator’s best alternative to a negotiated agreement, also known as BATNA (Fisher & Ury, 1981). The amount of power available to a negotiator depends on the quality or relative value of the alternatives available should the current negotiation fail. For example, a job candidate with multiple quality job offers has more power to negotiate than one who is dependent on a single job offer. If the current negotiation fails, the former can fall back on one of the alternative offers while the latter can only negotiate to a limited extent without jeopardizing the chances of getting the job. The job candidate with a strong BATNA will have more power in this negotiation than the employer and theoretically can secure a better outcome than is otherwise possible.

Similarly, a negotiator should determine the “bargaining zone” before beginning negotiation (Walton & McKersie, 1965). This represents the range between the target (the best salary offer based on the BATNA or higher) and the resistant point at which the negotiator walks away from the negotiation (the lowest acceptable starting salary). Hence, it is to be expected that a more favorable BATNA will lead to a higher level of aspiration and a more extreme resistance point.

In addition, researchers using bargaining simulations to examine the influence of BATNA on the negotiation process (Pinkley, Neale, & Bennet, 1994; Pinkley, 1995) found that a negotiator with the more favorable alternative compared to the other party, secures a larger portion of the resource pie. Superior BATNAs can also be used to make first offers that anchor the negotiation around desired outcomes (Galinsky & Mussweiler, 2001; Magee, Galinsky, & Gruenfeld, 2007). For example, a job candidate with strong multiple job offers can make the first offer by requesting a salary of $75,000 based on the best offer made by one of the other prospective employers. By the candidate being proactive in making the first offer, the negotiation is now anchored around the $75,000 figure instead of a lower amount the company may have had in mind if it were to have made the first offer.
Experience

Negotiation is a skill and like other learned skills, performance should theoretically improve with experience. Research in this area, however, has produced mixed results. Thompson (1990a, 1990b) conducted several experiments using dyadic negotiation tasks to explore the outcomes achieved by non-expert (naïve) negotiators within integrative negotiation settings. She found that personal gains and joint gains improved as naïve negotiators gained more experience. When given different bargaining tasks, the negotiators’ ability to make tradeoffs that benefit both sides (logrolling) improved with experience. However, experience does not make them any better at recognizing compatibility of interests (fixed-pie perception) between the negotiating parties.

Experienced negotiators also claim a larger share of resources at the expense of their less experienced counterparts (Thompson, 1990a, 1990b). The more experienced party often makes offers that have low value to the other negotiator, offers fewer concessions, and makes more extreme initial demands.

Other researchers, however, found that experience alone does not lead to better performance (Nadler, Thompson, & Van Bowen, 2003; Steinel, Abele, & De Dreu, 2007; Thompson, & DeHarpport, 1994). In these studies, the researchers found that experience coupled with advice on the types of negotiation strategies to utilize provided better joint outcomes. Pairs of negotiators who were given advice showed a higher propensity to problem solve and behave less contentiously. These, in turn, led to higher joint outcome with agreements being achieved in shorter times (Steinel, Abele, & De Dreu, 2007). Similarly, Thompson and DeHarppport (1998) found that a control group who did not benefit from feedback was unable to increase their joint outcomes after four rounds of negotiation.

Judgment Accuracy

Many negotiation situations provide opportunities for the parties involved to maximize joint gains without resorting to a win-lose approach. Negotiators, however, often reach an impasse or settle for less than optimal solutions due to their misperceptions of the other party’s interests. Several researchers have examined the relationship between judgment accuracy and negotiation performance, and identified several types of systematic errors made by negotiators.
The first judgment error is known as the “fixed-pie” perspective (Bazerman & Carroll, 1987; Walton & McKersie, 1965). In situations with potential for integrative agreements, individuals may mistakenly assume that there is direct competition with the opponent negotiator for limited resources. This leads to the win-lose mentality that prevents negotiating parties from problem-solving to maximize joint gain. The alternative is for them to find ways to increase the amount of resources available, also known as “expanding the pie” (Pruitt, 1983). According to Pruitt, this enables both parties to still achieve high joint profit (as cited in Neale & Bazerman, 1983). For example, a job candidate may be asking for a higher starting salary than the company can offer. Instead of reaching an impasse, the two parties can explore other aspects of the total compensation package that add value to the final agreement for both parties. Upon mutually communicating their needs and preferences, they may discover that the company can provide a training budget that makes up for the difference between the offer and the desired salary. In this situation, the candidate is satisfied that the total package is worth more than the original value and the company will benefit from the skills development of their future employee.

The second type of judgment error is the “fixed-sum error” which is a predisposition to assume that the opposing party attaches the same importance on issues as oneself (Bazerman & Neale, 1983; Thompson & Hastie, 1990). For example, a candidate who places a high priority on salary may think that the hiring company considers salary to be the deal breaker too. The candidate may be hesitant to ask for a higher than average starting salary thinking that the company will not be willing to accommodate the request. In reality, the company’s top most priority may be finding the most qualified candidate and they may be willing to pay top dollar for the right person.

The third type of judgment error is the “incompatibility error” that pertains to negotiators’ perceptions of the other party’s preferences for alternatives within an issue. (Thompson & Hastie, 1990). A negotiation situation often involves several choices, courses of action, or alternatives. For example, the amount of annual raise a company offers can be 3%, 5%, or 10% and the starting date for a new job can be immediate, two weeks, or a month after the official offer. Negotiators may have incompatible preferences for the various alternatives (e.g., the job candidate wants the 10% annual raise while the company prefers 3%), or their preferences may be compatible (both the candidate and company prefer a start date of two weeks from the official signing of employment papers). The issue is whether each negotiator has an
accurate perception of the other party’s preferences. With the incompatibility error, the parties assume their preferences are incompatible and thus miss opportunities to agree on common grounds.

In two experimental studies, Thompson and Hastie (1990a) provided evidence that most negotiators began negotiations assuming that the other party’s interests were completely incompatible to their own. Negotiators eventually learned that it was possible to achieve joint gains during the negotiation. Those who learned of their opponent’s interests early in the negotiation achieved better outcomes than those who learned in the later stages of the negotiation. Finally, negotiators who solicited information from the other party and offered information about their own interests made more accurate judgments. They also achieved more integrative agreements that mutually benefited both parties.

**Information Exchange**

Negotiators are more likely to make accurate judgments about the other party’s interests and positions when they have sufficient and accurate information. This means that information exchange is critical for parties to reach integrative agreements that benefit both parties (Thompson, 1991; Walton & McKersie, 1965). According to Walton and McKersie, “When information is low, the result will be a less adequate definition of the problem; fewer alternatives will be generated; and the potential consequences of these alternatives will be less explored…. the parties will produce relatively low-grade solutions” (p. 140).

Thompson (1991) provided evidence that the information-seeking behavior of individuals in a negotiation task were often reciprocated by their opponents who asked for similar information from them. The negotiators who mutually exchanged information eventually reached more integrative outcomes and the improvements in outcomes did not come at the detriment of either party. This was similar to the findings of Kimmel et al. (1980) where negotiating dyads with a high trust factor (both parties were unafraid that the information provided will be used against them) mutually exchanged information on their respective potential profits.

It is generally acknowledged that exchanging information provides additional insights to the other party’s needs and motivations, thus increasing the likelihood that negotiators can find integrative outcomes (Pruitt, 1983; Walton & McKersie, 1965). Research has shown that exchanging information on priorities across multiple issues has enabled negotiators to use a
technique called “logrolling”. Using this technique, “each party concedes on low priority issues in exchange for concessions on issues of higher priority…..each gets that part of its demands that it finds most important” (Pruitt, 1983). For example, a job candidate may communicate her preferences (in order of priority) as (a) a high starting salary, (b) 25 vacation days, and (c) the ability to work from home three days a week. On the other hand, the prospective employer’s preferences in order of priority are (a) employee availability in the office every day, (b) 14 vacation days, and (c) a salary equivalent to market rates. The difference in priorities communicated by the two parties leads to logrolling whereby the company agrees to the higher starting salary and in return, the job candidate drops her demand to work from home. They may split the difference on the remaining issue and mutually agree to 19 vacation days. This type of integrative agreement is possible because of the exchange of information between the negotiating parties (Thompson, 1991; Weingart, Hyder, & Prietula, 1996).

**Negotiation Strategies, Tactics, and Style**

A job candidate’s negotiation strategy is the overall plan of action that will be used to achieve desired goals (Mark & Harold, 2011). This differs from tactics which are short-term adaptive moves used to execute a broader and higher level strategy (Lewicki, Saunders, Barry, & Minton, 2004). A strategy usually involves the use of multiple tactics to accomplish its goals. The recurring use of specific negotiation strategies indicates an individual’s predominant negotiating style (Hames, 2012; Mark & Harold, 2011; Rahim, 1983; Volkema, & Bergmann, 1995).

Much of today’s research on negotiation strategies is influenced by the Dual Concern Model for handling conflicts introduced by Blake and Moulton in 1964 (Marks & Harold, 2011; Rahim, 1983; Shell, 2007; Thomas & Kilmann, 1974; Van de Vliert & Kabanoff, 1990). The two dimensions of the dual-concern model are (a) the desire to satisfy one’s own needs (assertive) and the (b) desire to satisfy the other party’s needs (cooperative). The two dimensions are then interpreted into five types of negotiation strategies (see Figure 2.1).

**Competing.** The competing strategy represents a higher concern for one’s own outcomes than for the relationship with the opponent negotiator (Marks & Harold, 2011). This strategy focuses on claiming value for oneself and is typically utilized when the negotiators’ goals are in
direct conflict with one another, there are limited resources, the outcome is more valued than the relationship, and there is a lack of trust between the parties involved (Hames, 2012).

Figure 2.1. The Dual Concern Model and how different concerns affect the type of negotiation strategies used.

Tactics used by job applicants who prefer this style of negotiation include:

a) presenting previous experiences and qualifications to improve the quality of the company’s offer,

b) emphasizing the value and benefit the applicant could bring to the company,

c) directly letting the company know if the offer is unreasonable,

d) presenting market value information relevant to the position being applied for, and

e) threatening to withdraw from the process if the company does not improve upon the offer (Marks & Harold, 2011)

**Collaborating.** The collaborating strategy places a high concern for both the relationship and the desired outcome for both parties. Also known as an integrating or problem solving approach, the collaborating strategy focuses on exchanging accurate and meaningful information to uncover the basic interests of the parties involved (Marks & Harold, 2011). The emphasis is on creating value so that both negotiators benefit from the agreement. This strategy is typically used when the two parties’ goals are not directly opposed, the resources are not fixed, there
exists enough trust between the negotiators, and both parties want to secure an agreement that mutually benefits them (Hames, 2012).

Job applicants who prefer the collaborative style tend to use the following tactics:

a) mutually exchanging accurate information on needs and priorities,
b) discussing all concerns openly to resolve issues in the best way possible,
c) working with the company to understand its position on the various issues being negotiated, and
d) integrating the interests of both the company and the job candidate to arrive at a solution supported by both sides (Marks & Harold, 2011).

**Accommodating.** The accommodating strategy places a higher concern for the other parties’ outcomes than one’s own needs. While this strategy is not the best option when negotiating important issues, it may be appropriate if the priority is on a long-term relationship or if one is negotiating from a position of weakness or limited power (Marks & Harold, 2011).

Job applicants resorting to this strategy tend to employ the following tactics (Marks & Harold, 2011):

a) initiating the negotiation but eventually giving in to the company’s demands
b) making more concessions than the company is offering in order to reach an agreement

**Compromising.** The compromising approach has some degree of concern for both one’s own outcome and the outcome for the other party.

Job applicants who utilize the compromising style tend to apply the following tactics (Marks & Harold, 2011):

a) using “give and take” to reach a compromise
b) finding a middle ground to resolve the differences between the two sides

**Avoiding.** This is not really a negotiation strategy since it involves evading the opportunity. Although it may be prudent to avoid negotiating to avert conflict in some cases, this approach in the context of job negotiation essentially “leaves money on the table” (p. 374, Marks & Harold, 2011) when some gains could be obtained from utilizing one of the other strategies.
Many negotiation situations require a mixed-method approach, especially those involving multiple issues. Strategic and tactical knowledge enable a negotiator to decide which are the most appropriate strategies or even if a strategy is available in that situation (Caroll & Payne, 1991). This affects their interaction with the other party which in turn generates new knowledge and subsequent readjustment of strategies until an agreement or impasse is reached.

In a survey of newly hired employees to identify the effects of negotiation tactics on salary outcomes, Marks and Harold (2011) found that those who chose to negotiate were able to increase their starting salaries by $5,000. The most increases, however, came from using a combination of competing tactics (to claim resources for oneself using persuasion, threats, or even misrepresentation) and collaborating tactics (to consider the need of the other party by exchanging information, and having open discussions of one’s positions, perspectives, and issues).

Many of the studies mentioned in this literature review assessed negotiation performance using role-playing within controlled sessions (Elfenbein et al., 2008; Pinkley et al., 1994; Steinel et al., 2007; Stuhlmacher & Champagne, 2000). The biggest advantage to using such a controlled experimental design is the ability to manipulate specific variables within the study (Carnevale & De Dreu, 2005). While negotiation simulations provide the most realistic method of assessing negotiation skills, it is also very time consuming to execute and require trained observers to achieve a high inter-rater reliability. Another common method of assessing negotiation knowledge and skills is to use surveys that provide self-reported data (Curhan et al., 2009; Marks & Harold, 2011; O’Shea & Bush, 2002). This method enables efficient collection of data but may not provide an accurate assessment of ability at a granular level that considers context and decision making processes within complex interactions. Also, students may not be truthful or reliable in their estimation of their own capabilities.

When assessing a large number of college students, a more practical and efficient assessment tool needs to be developed so that the students’ strengths and weaknesses in negotiation can be diagnosed in a quick, reliable, and valid manner. A viable solution is to use the evidence-centered design (ECD) framework to develop a branching simulation assessment tool, which will be discussed in the next section.
Negotiation Efficacy

Self-efficacy is a person’s belief in his or her capability to utilize motivation, cognitive resources, and specific actions needed to meet the demands of a task (Wood & Bandura, 1989). Bandura’s self-efficacy theory (1977) suggests that people who have a high level of confidence in their ability to perform a specific task expect a successful outcome, focus their cognitive processes on achieving success, and persist even when they face difficulties. On the other hand, those with low self-efficacy for a task will avoid such tasks or give up prematurely (Bandura & Cervone, 1986; Cervone & Peake, 1986; Sullivan, O’Connor, & Burris, 2006).

It stands to reason that such behavior would seem highly relevant to negotiation situations. Research in negotiation efficacy provides some evidence that those with high levels of self-efficacy are more likely to initiate negotiation (Volkema & Fleck, 2012) and obtain better negotiated outcomes (Brett, Pinkley, & Jackovsky, 1996; Elfenbein et al., 2008; Leon-Perez, Medina, & Munduate, 2011; Gist, Stevens, & Bavetta, 1991; Sullivan, O’Connor, & Burris, 2006).

A high level of self-efficacy also buffers negotiators from the negative effects of reaching an impasse that could affect future behavior such as being less willing to cooperate, losing faith in the process of negotiation, and planning to share less information (O’Connor & Arnold, 2001). Additionally, self-efficacy moderates the feeling of anxiety that could cause individuals to make low offers, exit early from the negotiation, and therefore achieve a lesser outcome (Brooks & Schweitzer, 2011).

Sullivan et al. (2006), however, argued that while these findings indicate the importance of self-efficacy, they do not describe how self-efficacy operates during the negotiation process. Many of these studies also use general self-efficacy assessments and their usefulness in predicting negotiator’s choices of specific tactics is questionable. Sullivan and colleagues instead took a different approach by measuring self-efficacy in the context of specific behaviors (the use of integrative and distributive tactics). A key premise of their study is that “negotiators have varying levels of self-efficacy for particular sets of strategies. The higher their level of self-efficacy for a given strategy, the more likely they are to sample the tactics associated with this strategy” (p. 568). Their series of studies thus focused on developing, validating, and measuring two constructs – distributive self-efficacy (DSE) and integrative self-efficacy (ISE).

The DSE measure consists of four distributive tactics:
a) persuade the other negotiator to make most of the concessions,
b) convince the other negotiator to agree with you,
c) gain the upper hand against the other negotiator, and
d) prevent the other negotiator from exploiting your weaknesses.

The ISE measure, on the other hand, consists of the following integrative tactics:

a) find tradeoffs that benefit both parties,
b) exchange concessions,
c) look for an agreement that maximizes both negotiators’ interests, and
d) establish a high level of rapport with the other negotiator.

These scales were used in a pre-negotiation survey and students used a 100-point scale (0=no confidence, 100=full confidence) to rate how confident they were in using these tactics in a negotiation situation with several distributive and integrative issues. Students then indicated in a post-negotiation questionnaire the extent to which they used the tactics during the face-to-face negotiation (1=not at all and 7=to a great extent) and these findings were then compared with the negotiated outcomes.

The studies provided evidence that self-efficacy has an influence on negotiators’ behaviors; DSE is positively correlated to the use of distributive tactics and ISE is positively related to the use of integrative tactics. In addition, the use of tactics congruent with the type of issues (distributive or integrative), lead to positive outcomes for the negotiators.

Other researchers, however, caution against measuring task-specific self-efficacy to predict negotiated outcomes and propose instead the measurement of overall negotiation efficacy (Miles & Maurer, 2012). They argue that negotiation is a task that involves two or more parties whose actions are interdependent. So even though a person may have high self-efficacy in using specific tactics, the actions and counter-actions of the other party increase the complexity of the task. This dynamic process could reduce the strength of the correlation between self-efficacy and performance.

Self-efficacy and other determinants of negotiation outcomes discussed earlier are personal traits that affect performance or inter-related skills that are often difficult to assess. A feasible solution is to utilize an evidence-centered design approach to guide the systematic development of an assessment tool that produces valid and reliable performance data.
Evidence-Centered Design

The basic purpose of an assessment is to gather information that will enable the assessor to make inferences about a person’s level of competency – what they know, what they can do, and to what degree (Shute, Masduki, & Donmez, 2010). Evidence-Centered Design (Mislevy, Steinberg, & Almond, 2003) is a framework that places an emphasis on the assessment purpose being the starting point for the assessor to (a) define the claims about what the student knows and can do (competencies), (b) determine what constitutes valid evidence to support the claims, and (c) identify the features of tasks and situations that will elicit that evidence. When the evidentiary argument is made explicit, the argument can be examined, shared, and further refined. Figure 2.2 shows the basic structure of the ECD approach to assessment design.

In designing a job negotiation assessment using branching scenarios, the assessor needs to identify the variables within these models and their interrelationships in order to answer the following questions posed by Messick (1994) that gets to the crux of assessment design:

- **Competency model**: What is the complex of knowledge, skills, and other attributes that should be assessed?

- **Evidence model**: What types of performance will serve as evidence for job negotiation competencies? This model has two components in terms of (a) the scores assigned for the different levels of performance, and (b) the scoring model explicating the relationships between the competency model and the scores.

- **Task model**: What tasks or situations should produce those behaviors? This model describes the branching scenarios where students should demonstrate desired
behaviors by making correct decisions when faced with choices within the negotiation process.

**Competency Model**

An assessment is meant to support inferences for some purpose, such as grading, certification, or providing diagnostic feedback. The objective of the assessment in this study is to quickly diagnose college students’ competencies in job negotiation situations and to provide immediate feedback in terms of their performance. This feedback can then be used by the students to rectify areas of weakness during negotiation as part of their job search preparation.

An assessment generates information that contribute to an evaluator’s understanding of the meaning of the scores and to then draw inferences about the student’s abilities and knowledge. The validity of such inferences are strengthened when the information derived fits with theoretically expected patterns of relationship between test scores, item scores, or other measures of the same construct (Messick, 1995). A common method in identifying such relationships is the development of a competency model.

For this study, I developed a model based on multiple sources of information such as a review of prior research on job negotiation (discussed earlier in the literature review), a review of existing negotiation skills assessment tools, and educational texts. This model was later validated by a group of negotiation experts.

A major consideration in selecting the competencies to include in the model is the time and development constraint of designing and developing a branching simulation assessment. Ideally, the assessment tool should diagnose a reasonable number of competencies at a level of granularity suitable for the purpose of the assessment (Rupp et al., 2010). At the same time, there should not be so many variables being assessed that the branching simulation becomes too confusing for the students and too complex to grade (Mislevy, 2011).

Therefore, this study focused on two key behaviors when negotiating the terms of a job offer—(a) make counteroffers and (b) make reasonable compromises to reach an agreement. Figure 2.3 shows the preliminary job negotiation competency model with the main variables and their associated sub-competencies. The competency model will be further discussed in the Results section.
Figure 2.3. The preliminary job negotiation competency model focus on two key behaviors of making counteroffers and making reasonable compromises.

**Evidence Model**

The evidence model is the intermediary between the competency model and the task model (Mislevy, 2011) and it contains two parts:

a. the evaluation component that defines behaviors providing evidence for the performance claims being made, and

b. the scoring method used to provide values indicating different levels of performance for each variable in the competency model.

Performance claims are specific statements about the student’s knowledge, skills, and attributes based on the observed evidence from the simulation (Mislevy, 2011). In this case, the evidence constitutes choices made by the student on what the characters should say or do in the negotiation scenarios (see Table 2.1 for an example).

A computer-based branching simulation consists of multiple decision points within a scenario. Each decision point could have three options (what the character should say or do) that are designed to elicit evidence of students’ knowledge and skills (see Figure 2.4 for an example of a decision point).
Figure 2.4. A screenshot depicting a decision point for the character in the simulation.

The choices are considered good, mediocre, or bad based on the skills defined in the competency model. Depending on the choice made by the student, the scenario then proceeds to the next decision point.

Figure 2.5 shows how evidence of performance derived from the simulation (represented by choices made at decision points D1, D2,….D6) feeds into the sub-skills (represented by C1, C2,…C6), which, in turn, informs the main competencies (represented by M1 and M2) for each of the three scenarios (represented by S1, S2, and S3).

The accumulated values from the scenarios then inform the overall job negotiation competency variable as represented by θ. The scores for the main competencies are then totaled across the three scenarios and the range of points determined to classify students in terms of high, medium, or low job negotiation competency.

To further clarify the relationships between claims and evidence, Table 2.1 provides a sample of the competencies, performance claims, the consequences or outcomes in the simulation based on the choices made, and the scores to be assigned. See Appendix H for the whole table.
A challenge posed by a branching assessment simulation is the alternate outcomes that are created based on a student’s choice. Branching occurs at each decision point and the next
choice to be made is based on the outcome from the previous decision. This link between choices at different decision points poses a challenge to the assessment designer to ensure that students are not continuously penalized for a single bad choice made early in the negotiation process. When a student makes a few bad choices that are leading to a sequence of poor outcomes, there should be an option to return to a point in the negotiation that gives them another chance to try out a different approach and make a better choice.

For example, there may be three choices leading to different outcomes at a decision point where students need to identify benefits or options that were not in the initial offer (expanding the pie).

a) The good choice is one where the student asks if the organization would consider a later start date and a performance bonus (these are important issues for the character).

b) The mediocre choice is one where the student asks if the organization would consider additional days for personal leave and flexible hours (these are not important issues for the character).

c) The poor choice is one where the student continues to insist on a higher salary that the company is clearly unwilling/unable to agree to and even threatened to accept another company’s offer (BATNA).

In Figure 2.6, the flowchart demonstrates the decision to be made and the three choices available. When a student has selected a poor choice and is now facing an undesirable outcome (the other negotiator says no to the higher salary request and in the tense situation, even suggests that the character take the other company’s offer instead). Now the student has three new choices (a) agree to the original offer, (b) accept the other company’s offer, or (c) defuse the situation and continue to negotiate. The first two choices would end the simulation prematurely and the student would have failed to take the negotiation to its maximum potential. The third choice, however, brings the student to Outcome 1 (same point in the negotiation as someone who had made the good choice). This gives the student a chance to make correct decisions for subsequent decision points instead of having the negotiation scenario end prematurely. This second chance, however, comes with a cost and the student will have points penalized at every decision from here onwards.
Scores are aggregated across tasks (decision points) for all three scenarios to inform the student of his or her performance on the two major competencies — make counteroffers and make reasonable compromises.

Besides competency scores, another outcome measure is the value of the compensation package negotiated by the end of the scenario (e.g., starting salary, vacation days, bonus, location). This value is calculated through a payoff table that reflects the priorities of the
character in the scenario. Table 2.2 provides an example of scores calculated for a student negotiating on three issues within a scenario – salary, vacation time, and a performance bonus.

Table 2.2
An Example of Scores Attained for Negotiating Items Based on a Character’s Priorities

<table>
<thead>
<tr>
<th>Start Date</th>
<th>Salary</th>
<th>Performance Bonus</th>
</tr>
</thead>
<tbody>
<tr>
<td>(High priority)</td>
<td>(Medium priority)</td>
<td>(Low priority)</td>
</tr>
<tr>
<td>Immediate (0 point)</td>
<td>$42,000 (0 point)</td>
<td>None (0 point)</td>
</tr>
<tr>
<td>2 weeks later (350 points)</td>
<td>$44,000 (250 points)</td>
<td>3% (150 points)</td>
</tr>
<tr>
<td>4 weeks later (700 points)</td>
<td>$46,000 (500 points)</td>
<td>5% (300 points)</td>
</tr>
</tbody>
</table>

Total Possible Points= 1500 points

The character in the scenario has the following priorities (from highest to lowest) – start date, salary, and performance bonus. The value of each component is weighted according to the character’s priority.

In this illustration, the most number of points to be attained is 1500 points for a job package of $46,000 starting salary, 5% performance bonus, and a start date four weeks later than what the employer would have preferred. However, this is not achievable in the simulation because the employer (simulation program) will have one or two priorities that are at odds with the student’s payoffs. For example, the employer’s priorities (from highest to lowest) could be – the salary, performance bonus, and later start date. This forces the student to make concessions and in order to do so she must first identify the employer’s needs and order of priorities. These actions then lead to opportunities for making trade-offs to achieve a win-win outcome (for example, compromise on the performance bonus to get the later start date).

While students can pursue an aggressive strategy to maximize their own personal gains, the simulation will end poorly for them with strained relations with their future employer, or worse, the employer will withdraw the offer. Conversely, if students are too accommodating, their payoff is minimal and this constitutes poor negotiation performance. The simulation is set up to capture a strong positive correlation between high competency and the win-win outcome (combination of the competitive approach to maximize gain and the collaborative approach to integrate the needs of both parties).
Task Model

Tasks are the most prominent part of an assessment and their primary purpose is to generate evidence through scores (observable) for inferences about competencies (non-observable). The task model guides the development of scenarios and assessment tasks that can provide the evidence.

Shute, Hansen, and Almond (2008) maintained that at a minimum, the task model should specify:

a) the stimuli materials presented to students (e.g., instructions, graphics, and tables), and
b) the outcome (e.g., amount of negotiated salary) or work products (e.g., selections made at decision points, completed table, a diagram).

The model should also define task features controlled by the assessment designer that:

a) determine the focus of evidence within the simulation (e.g., number of decision points within each scenario in the branching simulation, number of choices within each decision point, branching outcomes of decisions made),
b) indicate the degree of difficulty (e.g., scenarios get more complex with more compensation items to be negotiated, the interviewer is more uncompromising), and
c) describe incidental features that can be used to add variety to the tasks (e.g., main characters within scenarios, companies involved in the negotiation).

Figure 2.7. Decision points in each scenario that represent the basic negotiation process.
A well-designed task model should be able to support multiple representations of the same scenario type with task features that are equivalent in psychometric characteristics and suitable for the objective of the assessment. This enables the task model to facilitate the development of a scoring system that is applicable across the multiple representations of the scenario type with few adjustments (Braun, Bejar, & Williamson, 2006). In this study, therefore, each scenario followed a similar negotiation process represented by decision points (see Figure 2.7).

At the same time, there are several task features that could make a negotiation scenario more complex. This involves the manipulation of situational factors within the simulations such as the balance of power between the character and the employer. Within the job negotiation context, power can be operationalized as:

a) *Informational power*. The scenario is easier when the character knows up front what the salary and benefits are for the organization’s current employees or knows the market value of experts in the same field. On the other hand, the scenario is more complex if such information is not provided up front and the character has to find a way to glean that information from the prospective employer as part of the information exchange.

b) *Alternative job offers*. The scenario is easier when the character has more than one job offer and more challenging when there are no other job offers (poor BATNA). It can also be more challenging when the character has 2 or 3 offers to compare and contrast, or the employer has multiple qualified candidates for the position.

c) *Work experience*. The scenario is easier when the character has a lot of relevant work experience and can therefore negotiate a better salary. It becomes harder when the job seeker has little or non-relevant work experience.

Another task feature that can be manipulated to increase negotiation complexity is the degree of conflict between the character’s and the employer’s priorities (the character needs flexible hours due to family commitments while the employer needs a project leader to be on-site). This requires the student to work harder to find common ground and opportunities for integrative agreements.
These situational factors can be used to make the scenarios progressively more complex to elicit a distinction in performance between those who have basic negotiation skills and those who are highly skilled in negotiation.
CHAPTER THREE

METHODS

The purpose of this study is to investigate the use of the evidence-centered design framework (ECD) to develop a branching simulation tool that quickly diagnoses the job negotiation competencies of college students in a valid manner. This study was guided by the following research questions:

1. What are the core job negotiation competencies to be measured using the simulation tool?
2. How valid is this simulation tool for measuring the core competencies?
3. How do individual differences affect the outcome of the simulation?

This chapter describes how the study was conducted and is divided into several sub-sections. These include a discussion of the participants, scenario-based simulation and tasks, instruments, and dependent variables. It also discusses the methods used to analyze the data for answering the research questions.

Participants

The study consisted of 87 undergraduate students and 51 graduate students in the college of business at a southeastern university who volunteered to participate. The undergraduate students who were mostly seniors (average age $M= 23.07, SD= 2.74$) were enrolled in basic negotiation classes and consisted of 53.5% females and 46.5% males. This is a 3-credit course offered every semester and followed a lecture format. Concepts and skills taught included:

a) strategies and tactics of distributive and integrative bargaining,
b) collaborative negotiations,
c) cross-cultural negotiations,
d) individual differences,
e) gender and negotiation
f) negotiation power,
g) planning for negotiation, and
h) perception and cognition.
There were also role-playing opportunities for students to put the theories into practice. Students practiced their skills in simulated scenarios such as buying a car and negotiating a job offer. Students participated in this study towards the end of the semester after they had benefited from most of the lectures and practice role plays. They were interested in participating in this research study due to its relevance to the course.

The graduate students (average age $M=28.82$, $SD=3.11$) were enrolled in operations management classes offered online and consisted of 59.1% female and 41.9% male. These online classes taught students the design and management of production systems including the efficient and effective use of resources such as labor, capital, information, facilities, and materials. The management component of the course focuses on issues such as project management, resources planning, lean operations, and quality control. Students were introduced to these topics through business case studies in manufacturing and services delivery. Students were assigned a set of discussion questions each week. They posted their personal responses to the discussion board and critiqued other students’ submissions. The students also formed teams to analyze two unique business cases per team. Students from these classes were interested in participating in this research study because negotiation skills are important for most business students and they hoped to learn something from participating in the study. Additionally, they would also like to be better prepared for their own job search upon graduation.

Participants in the study also completed a demographics survey with four items that estimated their experience in negotiation and knowledge of negotiation tactics. Based on an analysis of these items, 63 students were categorized as high expertise in negotiation skills and 77 were categorized as low expertise.

**Materials and Tasks**

All students completed the branching simulation tool developed using Adobe Captivate and available through www.jobnegotiations.com. Students who participated in the study were each assigned a research identification and password to log onto the website. The website automatically tracked their completion of all the simulation scenarios and stored their performance data on a secure server. The students also completed three survey instruments through Qualtrics.com.
Tutorial and Instructions

Students completed a 5-minute tutorial on how to navigate the simulation interface. Brief annotations were provided to show the use of buttons to progress through the simulation or access critical information.

![Tutorial: Interface](image)

Figure 3.1. A screenshot of the tutorial module to familiarize students with the interface.

In this tutorial, students were also provided instructions for completing the scenarios:

“The three scenarios in this simulation seek to provide a quick diagnosis of your knowledge and skills in job negotiation. You’ll play the role of a character who has been offered a job. Your main objective is to negotiate a better deal than what’s been offered. You also have the option of declining the offer or choosing an offer from another company. During the negotiation, you’ll be given several options. Each of these represents what the character can say or do at that point in the negotiation. Select what you think is the best course of action by clicking the text provided for the option. Click the “Send Scores” button after each scenario has been completed to send your answers and scores to the computer server.”
**Character Profiles**

At the start of each scenario, students were asked to carefully read a profile sheet that stated the following details about a character:

- personal background (such as education, professional experience, and friends or family expectations),
- professional and personal needs,
- negotiation priorities,
- details of the job offer being negotiated, and
- the BATNA (an alternative job offer from another company to be used as potential leverage).

**Scenario 1.** Students played the role of Josh Wellington, a 23-year-old Computer Science graduate with a passion for computer games development. He had a job offer from a game development company for a Junior Developer position and another from a bank for a System Analyst position (see Appendix D for Josh Wellington’s profile sheet). Students negotiated with the game company for a higher starting salary, a performance bonus, and a later start date.

**Scenario 2.** In this scenario, students stepped into the shoes of a young mother with a graduate degree in Child Development. Shauna Williams is looking for a part-time position so that she can spend time with her son and earn some extra income for her family. She received job offers from a nearby tutoring center and another from a family health club with an enrichment program for kids (see Appendix E for Shauna Williams’ profile sheet). Students negotiated with the tutoring center for a higher hourly rate, a substantial subsidy to enroll Shauna’s son into their enrichment program, and a higher referral fee for referring other child development specialists to the center for employment.

**Scenario 3.** In the final scenario, students took on the role of a soon-to-graduate business student interning at a bank. Aileen Chang has no other job offers and she is in competition with another intern for an open position at the bank (see Appendix F for Aileen Chang’s profile sheet). In this scenario, students negotiated for a higher starting salary, an earlier performance review, and a training budget.
Using the information provided, students made trade-offs on the negotiated items and attempted to secure the best possible outcomes in terms of job offer and highest number of points.

![Counteroffer screen where students enter possible values for the negotiated items and make trade-offs to secure the highest number of points.](image)

**Figure 3.2.** Counteroffer screen where students enter possible values for the negotiated items and make trade-offs to secure the highest number of points.

**Performance Report**

Students were provided with a personalized performance report (see Figure 3.3) with their competency results calculated for each scenario and an overall competency score. They were also encouraged to download a document, “Tips for Job Negotiation”, that described negotiation strategies and tactics based on the six competencies. This document provided value for the students who could identify their areas of weakness from the performance report and use the tips provided to improve on their skills and knowledge.

**Instruments**

**Personal Profile Survey**

This survey collected the following information – gender, age, college major, and college level (undergraduate or graduate student). Several items were included to assess how much job negotiation experience, knowledge of negotiation tactics, and negotiation training a person has had (see Appendix A).
Preferred Negotiation Strategies Survey

Students’ preferred negotiation strategies were assessed using an instrument developed by Marks & Harold (2011) who in turn adapted it from the more established instrument, the Rahim Organizational Conflict Inventory or ROCI-II (Rahim, 1983). The ROCI-II questionnaire has been shown to have good internal reliability. A study by Weider-Hatfield (1998) showed that it has an average Cronbach alpha of 0.79. Other studies have also demonstrated construct validity for the ROCI-II (Rahim, 2001; Rahim, Antonioni, and Psenicka, 2001; King and Miles, 1990). The survey (Appendix B) assesses an individual’s preferences for job negotiation strategies that fall under the following categories: competing, collaborating, accommodating, and compromising (see discussion of these characteristics on pages 19-21).

For this survey, students were given 20 statements representing the four negotiation strategies (seven items for collaborating, six items for competing, three items for compromising, and four items for accommodating). Students then rated each item on a 5-point Likert scale in terms of how true each statement would be for them during a job negotiation situation. The ratings were scored as:
Students who performed well in the assessment simulation were expected to score high in their preference for collaborative negotiation strategies. This strategy is considered appropriate for negotiating better terms of employment since it demonstrates initiative, problem solving, and the ability to develop or maintain good relations with a future employer. The results from this survey would be used to provide construct validity data for the assessment tool.

**Negotiation Self-Efficacy Survey**

The Sullivan et al. (2006) instrument on negotiation self-efficacy was used to measure students’ confidence in using distributive and integrative negotiation tactics. Students were given eight statements (see Appendix C) and they used a 5-point scale (1=no confidence, 5=full confidence) to rate how confident they would be in using these tactics during job negotiation. Students who felt highly confident using integrative tactics (which encourage collaboration) were expected to also perform well in the job negotiation simulation that was geared towards assessing the use of collaborative tactics. The results of this survey would also be used to provide construct validity data for the assessment tool.

**Dependent Variables**

The dependent variables that were the focus of this study were overall competency scores and the value of the negotiated package.

**Overall Competency Score**

A dependent variable of interest was the overall job negotiation competency scores attained by the students based on the choices they made during the assessment. There were common decision points in all three scenarios that required students to select the most appropriate action from several choices. Each choice was associated with a level of performance
(good, mediocre, or bad) for the competencies. The best choice at each decision point received the most points and the worse choice received the least. The points attained were then aggregated across all three scenarios to show the level of performance in each sub-competency. The totaled sub-competency scores then informed the overall competency score (see Figure 2.5 on p. 28).

**Value of Negotiated Package**

Another dependent variable of interest was the score attained by the students based on the negotiated outcome for each scenario. Each scenario had a payoff table that reflected the character’s priorities on issues and indicated the points to be gained for successfully improving the terms of each item on the final offer (see Figure 3.4).

**Aileen Chang’s Payoff Table**

<table>
<thead>
<tr>
<th>Starting Salary (High Priority)</th>
<th>Performance Review (Moderate Priority)</th>
<th>Training Budget (Low Priority)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$30,000 (0 point)</td>
<td>9 months (0 point)</td>
<td>0 (None) (0 point)</td>
</tr>
<tr>
<td>$33,000 (350 points)</td>
<td>6 months (250 points)</td>
<td>$3,000 (150 points)</td>
</tr>
<tr>
<td>$35,000 (700 points)</td>
<td>3 months (500 points)</td>
<td>$5,000 (300 points)</td>
</tr>
</tbody>
</table>

Total Possible Points = 1500 points

Figure 3.4. A screenshot of the payoff table from Scenario 3.

For example, if the character’s list of priorities was starting salary, performance review, and training budget (in that order of importance), the students’ negotiated outcome scores were best when they were able to secure a starting pay of $35,000 (highest priority), a performance review in 3 months, and a $5,000 training budget (lowest priority).

In such a scenario, the item they should use to logroll (offer a concession in exchange for getting a better deal on the higher priority items) would be the training budget. Table 3.1 illustrates this scoring process using scores from three fictitious students who attained different outcomes at the end of the scenario.
The best negotiated outcome score was attained by Student A who got the Human Resource Manager to agree to $35,000 starting salary and a performance review in six months. In exchange for the concessions from the manager, this student gave in on the training budget (which was the item of least importance). This student therefore scored a total of 950 points for that scenario.

Table 3.1
An Example of Three Students with Different Negotiated Outcome Scores

<table>
<thead>
<tr>
<th></th>
<th>Starting Salary (High priority)</th>
<th>Performance Review (Medium priority)</th>
<th>Training Budget (Low priority)</th>
<th>Negotiated Outcome Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A:</td>
<td>$35,000 (700 points)</td>
<td>6 months (250 point)</td>
<td>None (0 points)</td>
<td>950 points</td>
</tr>
<tr>
<td>B:</td>
<td>$33,000 (350 points)</td>
<td>6 months (250 point)</td>
<td>$3,000 (150 points)</td>
<td>750 points</td>
</tr>
<tr>
<td>C:</td>
<td>$30,000 (0 point)</td>
<td>3 months (500 points)</td>
<td>$3,000 (150 points)</td>
<td>650 points</td>
</tr>
</tbody>
</table>

Data Analysis

The following methods were used to analyze the data for answering the research questions.

Research Question 1: What are the job negotiation competencies to be measured using the simulation tool?

The comprehensive literature review provided a solid foundation for identifying the competencies needed in job negotiation situations. A preliminary competency model was created and then validated by a panel of experts (n= 3) through several discussions.

Research Question 2: How valid is this simulation tool for measuring the core competencies?

Two types of validity were examined in this study – content validity and construct validity.
**Content validity.** The final competency model was used to develop the evidence and task models. The experts then reviewed and validated these two models, too. In addition, they provided additional insights in terms of:

a) the knowledge, skills and attributes of competent job negotiators (competency model),

b) the interrelationships between the higher level nodes and the lower level ones (competency model),

c) the behavioral indicators and levels of performance (evidence model),

d) the suitability of scenarios used for the tasks (task model),

e) the appropriateness of the branching outcomes within the tasks (task model), and

f) the scores assigned to the various branching options (evidence model).

**Construct validity.** The assessment tool should be able to distinguish performance between novice and expert negotiators. The level of expertise attributed to the students was based on their answers on 4 questions in the Personal Profile Survey (Appendix A):

a) How many times have you attempted to negotiate a job offer?
   (1=Never, 2= One to two times, 3= Three to four times, 4= Five to six times, 5= Seven times or more)

b) When you negotiated, how many times have you successfully improved on the original job offer?
   (1=Never, 2= One to two times, 3= Three to four times, 4= Five to six times, 5= Seven times or more)

c) Rate how well you know the strategies, tactics, and counter tactics of job negotiation.
   (1= Not at all to 5= Extremely well)

d) Have you had other types of experience with negotiation? (work, organizational, student activities, etc.). If “Yes”, please briefly describe your experience.

A score of 1 to 5 for the last item was estimated by the researcher based on the additional information provided by the student in the survey instrument (see Table 4.3 for the guidelines used to assign scores). For example, negotiating a 5-year lease agreement for use of an office space which is a transaction of moderate complexity that happens infrequently is allocated a score of 3 for “other types of negotiation experience”. However, someone who had worked as a litigator and frequently involved in complex negotiations would receive a score of 5.
A composite index of negotiation expertise was then created using the scores. A median split was assigned based on the frequency distribution on the index. Those below the 50% median are assigned “low” on expertise (considered novices) and those above 50% as “high” on expertise. The expert classification based on negotiation expertise was then correlated with the overall competency scores and negotiated outcome scores from the simulation to provide evidence of construct validity.

I hypothesized that those classified as high expertise would perform better than those classified as low expertise in terms of overall competency and negotiated outcome scores.

The outcomes of the simulation were also compared with outcomes from other measures of negotiation competency. For this study, students completed the Preferred Negotiation Strategies Survey (Appendix B) where they responded to each statement on a 5-point Likert scale. Their scores for each type of negotiation strategy were then calculated. Correlation analyses were done to find the relationships among strategy preference, overall competency, and negotiated outcomes.

I hypothesized that students who showed a high preference for competing and collaborating strategies would perform better in overall competency and negotiated outcome than students who showed a high preference for compromising and accommodating strategies.

Additionally, students also completed the Negotiation Self-efficacy Measure (Appendix C) where they rated their confidence in using four distributive tactics and four integrative tactics on a scale of 1 (No Confidence) to 5 (Full Confidence). Participants’ scores on the Distributive Self-Efficacy (DSE) and Integrative Self-Efficacy (ISE) measures were then correlated with the assessment outcomes.

I hypothesized that students who were highly confident in their ability to use the distributive and integrative tactics would score higher on overall competency and negotiated outcomes compared to those who have low confidence.
Research Question 3: How do individual differences affect the outcome of the simulation?

Multiple regression analyses were conducted to determine how gender, expertise, age, preference for collaborative negotiation strategies, and training affected overall job negotiation competency and value of negotiated outcome.

\[ Y_{\text{OverallCompetency}} = \beta_0 + \beta_1 X_{\text{Gender}} + \beta_2 X_{\text{Expertise}} + \beta_3 X_{\text{Age}} + \beta_4 X_{\text{CollaborativeStrategies}} + \beta_5 X_{\text{Training}} \]

\[ Y_{\text{OutcomeValue}} = \beta_0 + \beta_1 X_{\text{Gender}} + \beta_2 X_{\text{Expertise}} + \beta_3 X_{\text{Age}} + \beta_4 X_{\text{CollaborativeStrategies}} + \beta_5 X_{\text{Training}} \]

Several statistical tests were done to ensure the data met all the assumptions for performing multiple regression analyses. Once it was established that there was no violation of the assumptions, separate multiple regression analyses were done on the two models mentioned above.

Power Analysis

The analysis involved three variables: (a) the statistical significance criterion used in the test, (b) the effect size of interest in the population, and (c) the sample size used to detect the effect.

A statistical power analysis tool, G*Power, was used to generate the effect sizes and sample sizes needed for a significance criterion of 0.05.

The effect sizes used in the analysis were for small, medium, and large effects of .1, .25, and .4 respectively as suggested by Cohen (1988).

The statistical test selected in the analysis was for “Linear multiple regression: Fixed model, \( R^2 \) deviation from zero” under \( F \) tests.

The analysis resulted in the following sample sizes to achieve the corresponding effect size and statistical powers (Table 3.2).

For this study, I would need at least 60 students in each group to attain a power of .90, with a moderate effect size (.25), at the .05 level.
Table 3.2
Estimated Parameters in the Power Analysis

<table>
<thead>
<tr>
<th>Power (1-β)</th>
<th>Effect size (d)</th>
<th>Sample Size (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Novice Group</td>
</tr>
<tr>
<td>.95</td>
<td>.10</td>
<td>204</td>
</tr>
<tr>
<td></td>
<td>.25</td>
<td>85</td>
</tr>
<tr>
<td></td>
<td>.40</td>
<td>56</td>
</tr>
<tr>
<td>.90</td>
<td>.10</td>
<td>143</td>
</tr>
<tr>
<td></td>
<td>.25</td>
<td>61</td>
</tr>
<tr>
<td></td>
<td>.40</td>
<td>40</td>
</tr>
<tr>
<td>.80</td>
<td>.10</td>
<td>83</td>
</tr>
<tr>
<td></td>
<td>.25</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>.40</td>
<td>24</td>
</tr>
</tbody>
</table>
CHAPTER FOUR
RESULTS

This study examined the design and validation of a branching simulation tool to assess the job negotiation competencies of college students. The assessment tool was developed using the evidence-centered design (ECD) framework with the purpose of providing a quick and basic diagnosis of college students’ job negotiation competencies.

The goal of the study was to answer the following research questions:
1) What are the core job negotiation competencies to be measured using the simulation tool?
2) How valid is this simulation tool for measuring the core competencies?
3) How do individual differences affect the outcome of the simulation?

The first section of this chapter presents the demographic data of research participants and descriptive statistics. The second section discusses the development of the job negotiation competency model and how it was validated using a panel of experts. The third section examines whether the assessment tool has content and construct validity. Finally, the fourth section presents data on individual factors that affect negotiation outcomes.

Demographic Data

There were 137 business students who participated in this study. They consisted of 86 mostly senior undergraduate students enrolled in negotiation classes and 51 graduate students taking operations management classes in the college of business.

In this study, 64 of the participants were male and 73 were female. Their ages ranged from 21 to 42-years-old with a mean age of 25.09. The mean age for undergraduates was 23.07 years and 28.82 years for graduate students. See Table 4.1 for more detailed information on the participants for this study.
Table 4.1
Demographic Characteristics (N= 137)

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>64</td>
<td>46.72</td>
</tr>
<tr>
<td>Female</td>
<td>73</td>
<td>53.28</td>
</tr>
<tr>
<td>Level of study</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undergraduate</td>
<td>86</td>
<td>62.77</td>
</tr>
<tr>
<td>Graduate</td>
<td>51</td>
<td>37.23</td>
</tr>
<tr>
<td>Age (M = 25.09, SD= 4.44)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undergraduate (M = 23.07, SD = 2.74)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 – 24</td>
<td>78</td>
<td>56.90</td>
</tr>
<tr>
<td>25 – 29</td>
<td>3</td>
<td>2.20</td>
</tr>
<tr>
<td>30 – 34</td>
<td>2</td>
<td>1.50</td>
</tr>
<tr>
<td>35 – 39</td>
<td>2</td>
<td>1.50</td>
</tr>
<tr>
<td>40 - 45</td>
<td>1</td>
<td>0.70</td>
</tr>
<tr>
<td>Graduate (M = 28.82, SD = 3.11)</td>
<td>1</td>
<td>0.70</td>
</tr>
<tr>
<td>20 – 24</td>
<td>29</td>
<td>21.20</td>
</tr>
<tr>
<td>25 – 29</td>
<td>19</td>
<td>13.90</td>
</tr>
<tr>
<td>30 – 34</td>
<td>2</td>
<td>1.50</td>
</tr>
<tr>
<td>35 – 39</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Expertise**

Students’ classification as experts or non-experts were based on self-reported data derived from the Personal Profile survey. A total of four items provided information on their level of expertise. Students rated themselves on these items and the outcomes were then scored for analysis in the following way (see Table 4.2):
### Table 4.2
Scoring the Items for Expertise Level

<table>
<thead>
<tr>
<th>Survey Items</th>
<th>Never</th>
<th>1 to 2 times</th>
<th>3 to 4 times</th>
<th>5 to 6 times</th>
<th>7 times or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>How many times have you attempted to negotiate a job offer?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>When you negotiated, how many times have you successfully improved on the original job offer?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Rate how well you know the strategies, tactics, and counter tactics of negotiation.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you had other types of negotiation experience? If “yes”, please briefly describe experience.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 4.3
Guidelines Used to Assign Scores for Other Types of Negotiation Experience

<table>
<thead>
<tr>
<th>Type of Negotiation Experience</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Very Low Impact</strong>: Negotiating incidents that occur in daily life. Examples include negotiating with a sibling for use of a gaming device, negotiating later curfew hours with a parent, etc.</td>
<td>1</td>
</tr>
<tr>
<td><strong>Low Impact</strong>: Negotiating incidents that involve significant gains but occur infrequently. Examples include buying or selling a car, negotiating a move-in date on a new apartment, negotiating with a contractor on the terms of a home renovation project, etc.</td>
<td>2</td>
</tr>
<tr>
<td><strong>Moderate Impact</strong>: Conducting moderately complex negotiations that are not done on a regular basis. Examples include negotiating terms of vehicle rental for an organization, managing workplace conflicts, negotiating a 5-year lease agreement for use of an office space, etc.</td>
<td>3</td>
</tr>
<tr>
<td><strong>High Impact</strong>: Conducting complex negotiations that are not done on a regular basis. Examples include negotiating high-value purchase and sales transactions, negotiating real estate deals, etc.</td>
<td>4</td>
</tr>
<tr>
<td><strong>Very High Impact</strong>: Conducting frequent and complex negotiations that involve significant gains. Examples include negotiating corporate mergers, bargaining on behalf of union workers, negotiating as an agent for celebrities, conducting arbitration and mediation, negotiating for litigation purposes, etc.</td>
<td>5</td>
</tr>
</tbody>
</table>
The last item asked for a description of other types of negotiation experience and scores were assigned using the guidelines shown in Table 4.3. The students’ scores for the four items on the survey were then aggregated and the median score of 6 was identified for the median split method of categorizing students into high expertise and low expertise.

Table 4.4
Frequency Scores for Students’ Experience Level (*Median = 6*)

<table>
<thead>
<tr>
<th>Experience scores</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.00</td>
<td>2</td>
<td>1.50</td>
</tr>
<tr>
<td>3.00</td>
<td>10</td>
<td>7.30</td>
</tr>
<tr>
<td>4.00</td>
<td>23</td>
<td>16.80</td>
</tr>
<tr>
<td>5.00</td>
<td>16</td>
<td>11.70</td>
</tr>
<tr>
<td>6.00</td>
<td>20</td>
<td>14.60</td>
</tr>
<tr>
<td>7.00</td>
<td>12</td>
<td>8.80</td>
</tr>
<tr>
<td>8.00</td>
<td>17</td>
<td>12.40</td>
</tr>
<tr>
<td>9.00</td>
<td>13</td>
<td>9.50</td>
</tr>
<tr>
<td>10.00</td>
<td>14</td>
<td>10.20</td>
</tr>
<tr>
<td>11.00</td>
<td>6</td>
<td>4.40</td>
</tr>
<tr>
<td>12.00</td>
<td>4</td>
<td>2.90</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>137</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

**Training**

Training in this study refers to some form of formal instruction such as a semester-long college-level class, negotiation workshops, graduate or executive certificate in negotiation, or nationally-recognized certification such as the Master Certified Negotiation Expert (MCNE). I used the following criteria to assign ratings for each student:

1 – no training
2 – two or three-day workshops
3 – semester-long class at college level
4 – executive-level certificate program
5 – nationally-recognized certification program
In terms of training, participants in this study fell mainly into two categories (see Table 4.5). Students who took the college-level class participated at the end of the semester so they had benefited from most of the knowledge and skills taught in the class.

Table 4.5
Types of Participant Training and Frequency Values (N=137)

<table>
<thead>
<tr>
<th>Types of training</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No training</td>
<td>60</td>
<td>43.80</td>
</tr>
<tr>
<td>Two or three-day workshops</td>
<td>2</td>
<td>1.50</td>
</tr>
<tr>
<td>Semester-long class at college level</td>
<td>73</td>
<td>53.30</td>
</tr>
<tr>
<td>Executive-level certificate program</td>
<td>1</td>
<td>0.70</td>
</tr>
<tr>
<td>Nationally-recognized certification program</td>
<td>1</td>
<td>0.70</td>
</tr>
<tr>
<td>Total</td>
<td>137</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Job Negotiation Competencies

The first research question is — what are the core job negotiation competencies to be measured using the simulation tool? For this study, a preliminary model was developed using multiple sources of information that included reviewing existing research on job negotiation, assessment tools for negotiation skills, and educational texts. This initial model focused on two key behaviors when negotiating a job offer: (a) make counteroffers, and (b) make reasonable compromises to reach an agreement (see Figure 4.1).

A panel of experts then reviewed this model and provided their feedback. The first expert is an assistant professor in the Department of Human Resource Management at a northeastern university. She has a doctorate degree in Industrial and Organizational Psychology and her research focuses on management practices and characteristics that contribute to perceptions of workplace fairness and counterproductive behaviors. She has researched and published multiple papers on negotiation in the workplace. She had also been instrumental in the development of an instrument for assessing negotiation styles. The second expert has a master’s degree in General Management. His professional experience included stints as an executive director with a major U.S. corporation providing test and college preparation services and as campus vice-president of
a southeastern private university. Hence, he has a lot of experience hiring and managing talent at various levels. The third expert has a master’s degree in Business Administration and a doctorate in Organizational Behavior and Human Resources. His negotiation experience included years of working as a sales representative and licensed loan originator.

The experts were mostly in agreement with the lower-level competencies in the preliminary model (C1-C7) as behaviors that competent negotiators should demonstrate in a job negotiation situation. Even though they came from different backgrounds and their application of negotiation skills took place in settings different from job negotiations, the experts agreed that the competencies identified in the preliminary model were appropriate for the study purpose.

The academic researcher, however, suggested that the ability to use BATNA for leverage should be a part of the ability to “Provide justification in proposing counteroffers” (C1). She reasoned that not everyone who negotiates has a BATNA in hand. But when they do, it is a very strong reason to justify a higher salary than the original offer. The rest of the experts agreed with the change and this reduced the number of lower-level competencies from seven to six.
The business executive recommended that “Make reasonable compromises” (M3) be changed to “Make reasonable concessions” since the word “concessions” is the more accurate term to use in negotiation. The word “compromises” according to the expert, denotes a lazy way of negotiating that sometimes fail to take into account opportunities for integrating both parties’ needs that could lead to a better solution. After some discussion, the experts also agreed that the lower-level competencies for “Make reasonable compromises” be described as “Identify items that have potential for concessions” and “Offer concessions” (see Figure 4.2 for the final and validated competency model).

Figure 4.2. The final competency model validated by negotiation experts.

In this validated model, the first competency is to “Make counteroffers.” Individuals with high competency in making counteroffers should demonstrate a collaborative approach where the negotiation process resembles problem solving (Marks & Harold, 2010). They should be able to provide good reasons for demanding a higher salary than the original offer. This includes mentioning fair market rates and highlighting additional qualifications. Recent graduates with little job experience could highlight previous part-time jobs, internships, or volunteer experience.
To persuade future employers, job seekers should also be able to utilize their BATNAs (if they have receive alternative job offers) to gain leverage.

Highly competent negotiators would also explore options that are not in the original offer. They should explore other benefits that have value to them such as flexible office hours, stock options, training budget, or a closer office location, to name a few. This technique is called “increasing the pie” and involves increasing the potential gains by including items or issues that were not in the initial offer (Kurtzberg & Naguin, 2011; Lewicki, Saunders, Barry, & Minton et al., 2004).

Job candidates should also communicate their own personal needs and priorities while gathering information on the employer’s needs and priorities. Productive information exchange should take place between the two parties and if enough trust has been built, savvy negotiators would capitalize on the information learned to increase their gains (Kurtzberg & Naguin, 2011).

Once all negotiable items have been identified, job seekers should try to find an agreement that meets the needs and priorities of both parties by making reasonable concessions. Basically, this entails offering concessions on items that are of least importance to the job seekers and asking for concessions from the future employers on items that are of least importance to them. This is known as “logrolling” and enables job seekers to achieve negotiated gains that correspond to their priorities while meeting the priorities of the future employers.

The experts also elaborated on the model by providing real-world examples for each competency (see Appendix G).

**Data on Validity**

*How valid is this simulation tool for measuring the core competencies?*

There were two types of validity examined in this study – content and construct validity.

**Content Validity**

The experts’ guidance was heavily relied on to provide content validity for the simulation tool. Besides the competency model, the experts also validated the evidence and task models. In addition, they tested a prototype of the assessment tool and identified several technical issues or bugs. In addition, they provided additional insights that helped improve the tool.
Behavioral indicators and levels of performance. The validated competency model guided the development of the evidence model that mapped out the relationships between performance claims and scores attained by students at different levels of performance. The task model was then developed to describe the three scenarios, decision points, branching options, consequences, and the characters’ reactions. Although the development of the competency, evidence, and task models were done sequentially, refining the evidence and task models was an ongoing, iterative process.

The experts struggled with this part of the validation process due to their unfamiliarity with the mechanics and limitations of a branching simulation. It was difficult for them to visualize the interrelationships between the tasks, choices, and consequences. The development of a visual task model was instrumental in helping the experts see the relationships between the competencies, tasks, decision points, consequences, and the scoring mechanism (see Figure 4.3 for a small segment of the task model and see Appendix I for the full task model).

Figure 4.3. A segment of the task model showing the competencies being assessed, the choices available, the consequences of a decision, and how the choices were graded (“G” being a good answer, “M” for mediocre, and “P” for a poor answer).

It was also quite challenging for the experts to agree on which choices represent good, mediocre, or poor answers. The task model had the choices listed for each decision point and they were asked to assign the best answers a score of 5, mediocre answers a score of 3, and poor answers a 1. They were also asked to provide the rationale for their scoring. At times, the personal preferences of the experts placed them at odds with one another. For example, one expert felt that providing specific details of the BATNA could be detrimental and weaken the
position of the job seeker. He argued that the potential employer could use the information to limit the number of negotiable items only to those covered in the BATNA. This limits the job seeker’s ability to expand the pie and seek other potential items to negotiate. Another expert disagreed and felt sharing the BATNA could be used to frame the negotiation at a higher salary range without limiting the potential for discovering other opportunities.

Using the consensus estimate method of interrater reliability, a mean interrater agreement of only 60.7% was reached in the first round of rating by the experts. A significant cause of the disagreement stemmed from the way the options were worded. After a discussion via web conference, the experts recommended changes to the wording of the options. The experts then rated the options again and the mean interrater agreement improved to 75.9%. A final round of discussion was conducted and further rewording of the choices was recommended. In the final rating, the interrater reliability was 91.1%.

**Other feedback.** The experts also provided feedback on the following issues:

a) *Accuracy.* The simulation used the correct terms and definitions such as “integrating needs” and making “concessions” that negotiators typically used.

b) *Relevance.* The experts thought that the various job negotiation scenarios were relevant to undergraduate and graduate students. The tool itself could be a great activity for a negotiation class and is similar to many role playing activities typically offered in negotiation courses. In addition, the tool has value for students preparing for job interviews. They supported the idea of offering the tool to the university’s Career Center and to faculty members teaching negotiation and career planning classes.

c) *Clarity.* The tutorial was easy to understand and prepared the students for handling the various tasks within the assessment tool. Some of the terminology used, however, could be too technical for students to understand especially if they had never taken a class in negotiation. Terms such “distributive” and “integrative” needed to be elaborated on to improve understanding of the task at hand or the choices being made. In addition, the character details provided through the profile sheets may be too much and could potentially cause cognitive overload for some students.
d) *Appropriateness of language.* The experts felt that the language used in general was suitable for college students and the dialog between characters was conversational and realistic.

e) *Usability.* The experts pointed out that the simulation did not work on Firefox browser which was a known technical issue with the HTML5 rendering of *Adobe Captivate* applications. Older Apple machines also had issues with playing the simulation on Safari and users had to switch to IE browsers instead. The experts recommended that the assessment website lists the browsers that are compatible with the simulations to help students use the appropriate one.

**Construct Validity**

The assessment tool should be able to distinguish performance between novice and expert negotiators. Students were classified according to low expertise or high expertise using the negotiation expertise index. The index was based on 4 questions students answered in the Personal Profile Survey. Based on a median value of 6 for the index, 71 students were classified as low expertise and 66 classified as high expertise (see Table 4.6).

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low expertise</td>
<td>71</td>
<td>51.82</td>
</tr>
<tr>
<td>High expertise</td>
<td>66</td>
<td>48.18</td>
</tr>
</tbody>
</table>

**Table 4.6**
Number of Students Classified as Low or High Expertise

<table>
<thead>
<tr>
<th>Outcome Measures</th>
<th>Novice $n = 71$</th>
<th>Expert $n = 66$</th>
<th>Total $n = 137$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall competency</td>
<td>$M = 65.62$</td>
<td>$M = 73.37$</td>
<td>$M = 69.35$</td>
</tr>
<tr>
<td></td>
<td>$SD = 9.55$</td>
<td>$SD = 13.02$</td>
<td>$SD = 11.96$</td>
</tr>
<tr>
<td>Negotiated Outcome</td>
<td>$M = 586.91$</td>
<td>$M = 648.74$</td>
<td>$M = 616.70$</td>
</tr>
<tr>
<td></td>
<td>$SD = 134.28$</td>
<td>$SD = 128.68$</td>
<td>$SD = 134.75$</td>
</tr>
</tbody>
</table>
Differences in outcomes. For this component of the research question, I hypothesized that those classified as high expertise would perform better in terms of overall competency and negotiated outcome scores than those who were low expertise. In order to examine differences in overall competency between novice and expert groups, an independent samples t-test was conducted. The Levene’s test showed a violation of the homogeneity of variance assumption. Therefore, a t-test not assuming homogenous variances was calculated instead (see Table 4.8). The results of this test indicated that there was significant difference between the two groups $t(118.70) = 3.95, p < .01$. The results suggested that overall competency scores were significantly higher for the expert group ($M = 73.37, SD = 13.02$) than for the novice group ($M = 65.62, SD = 9.55$).

For negotiated outcome, the results also indicated a significant difference between the two groups $t(134.87) = 2.75, p < .01$. These results suggested that negotiated outcome scores were also significantly higher for the expert group ($M = 648.74, SD = 128.68$) than for the novice group ($M = 586.91, SD = 134.28$).

Table 4.8
Independent Samples T-Test for Overall Competency and Negotiated Outcome Scores

|                        | Independent Samples Test |  |  |  |
|------------------------|--------------------------|--|--------------------------|
|                        | $t$                      | df | Mean Difference | Std. Error Difference |
| Overall competency     | Equal variances not assumed | 3.95** | 118.70 | -7.75 | 1.96 |
| Negotiated outcome     | Equal variances not assumed | 2.75** | 134.87 | -61.83 | 22.46 |

** $p < 0.01$ (2-tailed)

Correlation between expertise and outcomes. Results indicated there is a significant correlation between overall competency score and expertise, $r(135) = .33, p < .01$. There is also a significant correlation between expertise and the negotiated outcome score, $r(135) = .23, p < .01$.

The outcomes of the assessment tool were also compared with outcomes from other measures of negotiation aptitude. The first instrument determined if students’ preference for
Correlation between strategy preference and outcomes. I hypothesized that students who showed a high preference for competitive and collaborative strategies would score higher on overall competency and negotiated outcomes scores. The correlation analyses produced the following results for relationships among preferred strategies, overall competency, and negotiated outcome scores.

a) Competing strategies. The results showed no relationship between preference for use of competitive strategies and overall competency scores. There is, however, a small negative relationship between competitive strategies and negotiated outcome scores, \( r(135) = -.18, \ p < .05 \).

b) Collaborating strategies. There is a positive relationship between preference for collaborative strategies and overall competency scores, \( r(135) = .30, \ p < .01 \). There is, however, no relationship with the negotiated outcome scores.

c) Compromising strategies. There is a negative relationship between preference for compromising strategies and the overall competency scores, \( r(135) = -.26, \ p < .01 \). Similarly, compromising strategies also have a negative relationship with negotiated outcome scores, \( r(135) = -.37, \ p < .01 \).

d) Accommodating strategies. There is a negative relationship between preference for accommodating strategies and both measured outcomes of this study. The results showed moderate negative correlation with overall competency, \( r(135) = -.58, \ p < .01 \) and moderate negative correlation with negotiated outcome scores, \( r(135) = -.41, \ p < .01 \).

Correlation between self-efficacy and outcomes. The correlation analyses produced no significant relationships between overall competency scores and the self-efficacy scores for distributive and integrative strategies. The same is true for negotiated outcome scores.
Data on Individual Differences

How do individual differences affect the outcome of the simulation?

Multiple regression analyses were conducted to determine how gender, expertise, age, preferred negotiation strategies (score on collaborative strategies), and training affected overall job negotiation competency and negotiated outcome score.

\[
Y_{\text{OverallCompetency}} = \beta_0 + \beta_1 X_{\text{Gender}} + \beta_2 X_{\text{Expertise}} + \beta_3 X_{\text{Age}} + \beta_4 X_{\text{CollaborativeStrategies}} + \beta_5 X_{\text{Training}}
\]

\[
Y_{\text{OutcomeValue}} = \beta_0 + \beta_1 X_{\text{Gender}} + \beta_2 X_{\text{Expertise}} + \beta_3 X_{\text{Age}} + \beta_4 X_{\text{CollaborativeStrategies}} + \beta_5 X_{\text{Training}}
\]

Assumptions of Multiple Linear Regression

Several analyses were done to check that the assumptions for using multiple regression were being met. In these analyses, gender was coded as 0 for females and 1 for males. First, an analysis of standard residuals was carried out, which indicated that the data contained no outliers for (a) overall competency scores (Std. Residual Min = -2.390, Std. Residual Max = 2.30), and (b) negotiated outcome scores (Std. Residual Min = -2.99, Std. Residual Max = 2.08). The assumption of independent errors was also met with Durbin-Watson value = 2.31 for overall competency, and Durbin-Watson = 1.77 for negotiated outcome. Histograms of standardized residuals for both showed data that contained approximately normally distributed errors. The normal P-P plots of standardized residuals for both variables also showed the points were close along the line. In addition, the scatterplots of standardized residuals for both showed that the data met the assumptions of homogeneity of variance and linearity. The data also met the assumption of non-zero variances.

Tests to see if the data met the assumption of collinearity indicated that there was a problem. Some of the predictors were highly correlated (above .5) with each other as can be seen from Table 4.9 where age is significantly correlated with expertise (-.54) and training (-.78). Simultaneously, expertise is highly correlated with training (-.54). This means that they would not have contributed much to the multiple regression models predicting the two outcomes.
Table 4.9
Correlations among Age, Expertise, and Training on Outcome Measures

<table>
<thead>
<tr>
<th>Variables</th>
<th>Gender</th>
<th>Expertise</th>
<th>Age</th>
<th>Collaborative</th>
<th>Training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall competency</td>
<td>.22**</td>
<td>.38**</td>
<td>.07</td>
<td>.04</td>
<td>.13</td>
</tr>
<tr>
<td>Negotiated outcome</td>
<td>.23**</td>
<td>.30**</td>
<td>-.03**</td>
<td>-.07</td>
<td>.18*</td>
</tr>
<tr>
<td>Gender</td>
<td>—</td>
<td>.04</td>
<td>.04</td>
<td>-.04</td>
<td>.03</td>
</tr>
<tr>
<td>Expertise</td>
<td>.04</td>
<td>—</td>
<td>.54**</td>
<td>-.01</td>
<td>-.54**</td>
</tr>
<tr>
<td>Age</td>
<td>.04</td>
<td>.54**</td>
<td>—</td>
<td>-.08</td>
<td>-.78**</td>
</tr>
<tr>
<td>Collaborative Strategies</td>
<td>-.04</td>
<td>-.01</td>
<td>-.08</td>
<td>—</td>
<td>-.04</td>
</tr>
<tr>
<td>Training</td>
<td>.03</td>
<td>-.54**</td>
<td>-.78**</td>
<td>-.04</td>
<td>—</td>
</tr>
</tbody>
</table>

** p < 0.01 (2-tailed)
* p < 0.05 (2-tailed)

An analysis of collinearity statistics for overall competency showed that tolerance values for age and training predictors were less than .62 (based on 1 - .38). The predictor expertise, however, was above .62 (see Table 4.10).

Table 4.10
Overall Competency Collinearity Statistics Showed Low Tolerance Values For Age and Training Predictors

<table>
<thead>
<tr>
<th></th>
<th>R²</th>
<th>1 – R²</th>
<th>Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Age</td>
</tr>
<tr>
<td></td>
<td>.38</td>
<td>.62</td>
<td>.36</td>
</tr>
</tbody>
</table>

This indicated that expertise could be a significant contributor to the multiple regression model for overall competency even though it was highly correlated with other variables. However, age and expertise would not contribute meaningfully to the model.

Collinearity statistics for negotiated outcome showed that tolerance values for age, training, and expertise were less than .69 (1 - .31) indicating that these predictors would not contribute meaningfully to the negotiated outcome multiple regression model due to
multicollinearity (see Table 4.11). The descriptive statistics for the variables are provided in Table 4.12.

Table 4.11
Negotiated Outcome Collinearity Statistics Showed Low Tolerance Values for Age and Training Predictors

<table>
<thead>
<tr>
<th>R²</th>
<th>1 – R²</th>
<th>Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>.31</td>
<td>.69</td>
<td>.36</td>
</tr>
<tr>
<td></td>
<td></td>
<td>.36</td>
</tr>
<tr>
<td></td>
<td></td>
<td>.67</td>
</tr>
</tbody>
</table>

Table 4.12
Means and Standard Deviations for Variables (N = 137)

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Competency</td>
<td>69.35</td>
<td>11.96</td>
</tr>
<tr>
<td>Negotiated Outcome</td>
<td>616.70</td>
<td>134.75</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>25.09</td>
<td>4.44</td>
</tr>
<tr>
<td>Gender</td>
<td>0.47</td>
<td>0.50</td>
</tr>
<tr>
<td>Expertise</td>
<td>6.69</td>
<td>2.54</td>
</tr>
<tr>
<td>Training</td>
<td>2.09</td>
<td>0.99</td>
</tr>
<tr>
<td>Collaborative Strategies</td>
<td>4.37</td>
<td>0.45</td>
</tr>
</tbody>
</table>

Multiple Linear Regression for Overall Competency

As a result of the multicollinearity analysis, age was eliminated from the multiple regression analysis due to its high correlation with expertise and training. Multiple regression was then conducted to determine the best combination of gender, expertise, training, and use of collaborative strategies for predicting overall competency.

The generated model significantly predicted overall competency, $F(4, 132) = 17.98$, $p < .001$, but with only gender, expertise, and training variables being significant. Use of collaborative strategies as a variable was not significant (see Table 4.13). The adjusted $R$ squared value = .33 indicating that 33% of the variance in overall competency was explained by this model, which is a large effect according to Cohen (1988). The beta weights ($\beta$) suggests that...
expertise contributed most to predicting overall competency, and that being male and having benefited from negotiation training also contributed to this prediction.

Table 4.13
Multiple Regression Analysis Summary for Gender, Expertise, Training, and Collaborative Strategies Predicting Overall Competency

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SEB</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>4.33</td>
<td>1.68</td>
<td>0.18*</td>
</tr>
<tr>
<td>Expertise</td>
<td>3.00</td>
<td>0.39</td>
<td>0.64**</td>
</tr>
<tr>
<td>Training</td>
<td>5.76</td>
<td>1.00</td>
<td>0.48**</td>
</tr>
<tr>
<td>Collaborative Strategies</td>
<td>1.96</td>
<td>1.88</td>
<td>0.07</td>
</tr>
</tbody>
</table>

** p < 0.01 (2-tailed)
* p < 0.05 (2-tailed)

Multiple Linear Regression for Negotiated Outcome

Multiple linear regression was done for negotiated outcome with age eliminated from the model, also due to collinearity. The model significantly predicted negotiated outcome, $F(4, 132) = 14.27, p < .001$, but with only gender, expertise, and training contributing being significant. The adjusted $R^2$ squared value = .28 indicating that only 28% of the variance in overall competency was explained by this model which is a moderate effect. As with the previous regression analysis, collaborative strategies were not a significant contributor.

The beta weights ($\beta$) suggest that expertise contributed most to the prediction of overall competency, and that being male and having benefited from negotiation training also contributed to a better negotiated outcome (see Table 4.14).

Power

The statistical test used in the power analysis was for “Linear multiple regression: Fixed model, $R^2$ deviation from zero” under $F$ tests (see Table 4.15). Based on the analysis, a sample size of 71 participants in the novice group and 66 participants in the expert group (total of 137 participants) yielded a power of .99 with a medium effect as according to Cohen (1988).
Table 4.14
Multiple Regression Analysis Summary for Gender, Expertise, Training, and Collaborative Strategies Predicting Negotiated Outcome

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SEB</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>50.39</td>
<td>19.64</td>
<td>.18*</td>
</tr>
<tr>
<td>Expertise</td>
<td>29.46</td>
<td>4.61</td>
<td>.56**</td>
</tr>
<tr>
<td>Training</td>
<td>64.45</td>
<td>11.73</td>
<td>.48**</td>
</tr>
<tr>
<td>Collaborative Strategies</td>
<td>-12.68</td>
<td>22.0</td>
<td>-.04</td>
</tr>
</tbody>
</table>

Table 4.15
Power Analysis Based on 137 Students in the Sample Size

<table>
<thead>
<tr>
<th>Power (1-β)</th>
<th>Effect size (d)</th>
<th>Sample Size (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Novice Group</td>
<td>Expert Group</td>
</tr>
<tr>
<td>.99</td>
<td>.25</td>
<td>66</td>
</tr>
</tbody>
</table>
CHAPTER FIVE

DISCUSSION

The purpose of this study was to design and validate an assessment tool that could quickly diagnose college students’ basic job negotiation skills. The tool was designed using the evidence-centered design (ECD) approach to ensure that inferences made about the students’ performance are based on evidentiary reasoning. The resulting scenario-based branching simulation tool could be used in classrooms as a precursor to instruction on negotiation. Job-seeking college students could also use the online tool to better prepare for job interviews by quickly having their strengths and weaknesses assessed in key job negotiation competencies.

The goal of the study was the answer the following research questions:

1) What are the core job negotiation competencies to be measured using the simulation tool?
2) How valid is this simulation tool for measuring the core competencies?
3) How do individual differences affect the outcome of the simulation?

Referring back to the first question, the tool was developed with participation from two negotiation professionals and a negotiation researcher. The process began with a comprehensive literature review of the job negotiation domain to identify the knowledge, skills, and other attributes that would be revealed by the assessment tasks. The panel of experts then provided their feedback and an updated model was finalized. This model guided the development of an evidence model and a task model with the experts involved in many aspects of the process.

The tool was then utilized by undergraduate and graduate business students who participated voluntarily for the study. Participants completed the three scenarios within the assessment tool and answered questions on two other instruments that provided alternative measures of the competencies being assessed.

To answer the second question, the students’ performance data on the simulation was used to make inferences about their knowledge and skills on job negotiation. The analysis also examined whether the tool could distinguish performance between students classified as low and high expertise.
The third question examined the impact of students’ personal characteristics on the overall competency score and value of the negotiated outcome. Multiple regression analyses were used to estimate the contribution of the personal variables towards these outcomes.

In this chapter, I provide a discussion of the results of the three research questions. I also examine the limitations of the study and discuss future research suggestions. Finally, I discuss my overall conclusions on using a branching simulation tool to assess a complex skill like job negotiation, and how using a framework like ECD helped to clarify the process.

**Developing and Validating the Competency Model**

The first research question focused on the development of a competency model to identify the core competencies of job negotiation. According to the literature review, there are many steps involved in a negotiation process depending on the complexity of the negotiation. These actions generally require a competent negotiator to:

- a) research information on the opponent and the issues in conflict,
- b) identify goals that are realistic and attainable,
- c) communicate facts and arguments,
- d) listen and reflect on the discussion,
- e) clarify problems and resolve disagreements,
- f) make quick adjustments to new facts or ideas,
- g) propose and review possible options, and
- h) make reasonable concessions (U.S. Department of Labor, 1992, pp. 2-37).

It became clear early in the process of developing the competency model for this study that assessing all of these skills within a dissertation project would be impractical given the constraints of time and resources for me, the experts, and the participants. O’Neil et al. (1997) faced the same dilemma in their research study and argued that (g) propose and review possible options and (h) make reasonable concessions are key terminal behaviors in a negotiation while the rest are prerequisites to these 2 behaviors. Therefore, I made a similar decision as these researchers to focus on the terminal behaviors and their sub-competencies. Rather than have students go through activities a) and b) to acquire market salary data, company information, and set specific negotiation goals, the simulation assumed these activities were done beforehand. The simulation then provided the information through the character profiles for students to use as part
of the negotiation. As the simulation progresses, the choices to be made parallel the types of activities and decision-making expected of a competent negotiator which are activities c) to f).

On a separate note, the experts provided invaluable feedback in the development of the final model. At the start of the validation process the discussion revolved around the challenges of identifying and agreeing on a core set of skills. This is due to the complex communication process involved, the many steps that take place in a negotiation, and personal characteristics of negotiators that could affect the final outcomes. However, upon being presented with a much narrower job negotiation model to work with (the preliminary model), the experts were able to focus their discussions on the relevant competencies.

I also observed that the experts differed in their opinion or approach to negotiation due to their diverse backgrounds. This affected their view of specific behaviors associated with low and high ability for the competencies. The validation process itself was an exercise in negotiation as the experts worked through the behavioral descriptions of the competencies.

Validity of the Assessment Tool

The second research question called for evidence that the assessment tool is capable of measuring the core competencies of job negotiation in a valid manner. This is where I find the ECD’s systematic way of designing an assessment to be of great use. My design choices in terms of the scope, level of complexity, assessment mechanism, and assessment delivery were guided by ECD’s emphasis on the purpose of the assessment being the starting point. I chose to develop a scenario-based branching simulation tool because it fulfilled the intent to provide a way to assess a large number of students with a quick diagnosis of their skills and knowledge. This resonates with Messick’s (1995) argument that the relevance of the test for its purpose and the usefulness of the test in an applied setting can be considered as evidence of construct validity.

Relationship between Expertise and Outcomes

Another key aspect of construct validity relates to an assessment’s tool ability to distinguish performance between those who have low and high competency. I hypothesized that experts will have higher competency scores and negotiated outcomes than novices and the findings seem to support this. There is a significant correlation between expertise and overall
competency score \( r = .33, p < .01 \). Similarly, there is correlation between expertise and negotiated outcome \( r = .23, p < .01 \).

However, these are low to medium-sized effects and there are several possible reasons the correlations were not stronger. First, the mean age of the undergraduates was \( M = 23.07 \). This was a young group of participants who mostly were in school full-time with little work experience beyond part-time work, summer jobs, or internships. They have not had much experience negotiating salaries or other benefits. Even the graduate students were relatively young with a mean age of \( M = 28.82 \). It was quite likely they did not have much experience negotiating salaries either although many of them do have other types of negotiation experience that were job-related. So even though the participants were categorized as low or high competency in this study, there was actually very little difference in their level of negotiation expertise.

I believe that a wider variance in participants’ age and a sample population that included working adults who have been in the work force for at least 15 years, would result in a stronger correlation between expertise and the outcomes of the assessment tool.

Another possibility for the findings could be the items that made up the expertise index and the ratings assigned to those items (see Table 4.1). I made the assumption that someone who has actually attempted to negotiate (whether successfully or not) would have gained some form of experience. The more they negotiated the more experienced and confident they would become, and this would eventually lead to the development of expertise. Thompson’s research (1990a, 1990b) supported this phenomenon where personal gains improved as naïve negotiators gained more experience.

In the same vein, those who have successfully negotiated better offers most likely have some expertise that helped them be more effective. However, this reasoning may be flawed because some researchers have found that experience alone does not lead to better performance (Nadler, Thompson, & Van Bowen, 2003; Steinel, Abele, & De Dreu, 2007; Thompson, & Deharpport, 1994). These researchers found that experience coupled with feedback on the type of negotiation strategies to use lead to better outcomes. Therefore, basing a person’s level of expertise on the number of times they negotiated and the number of times they were successful may not be good indicators of level of expertise.
The third item, “Rate how well you know the strategies, tactics, and counter tactics of negotiation”, was included because knowledge is an important aspect of expertise and knowing what negotiation strategies and tactics to use could lead to better outcomes (Weingart et al., 1996). In this study, the self-reported data may have led to some participants overestimating their ability to apply this knowledge in a job negotiation setting. Most of the participants who rated their knowledge of strategies and tactics as a 4 or 5 only had one class in basic job negotiation.

The final item, “Have you had other types of negotiation experience? If yes, please briefly describe your experience.” The assumption I made was that basic negotiation skills are transferable to different types of negotiation. Someone who has had years of negotiating as a sales representative would be able to negotiate a job offer better than a novice. I used my judgment to assign a score of 1 (low impact) to 5 (high impact) on their level of expertise. At least another rater should have been used to assign the scores and a high interrater agreement should have been achieved before using this item as part of the expertise index.

In a nutshell, the instrument for assessing the level of expertise has several weaknesses that may have affected the research findings.

Comparison of Assessment Outcomes with Outcomes from Other Measures

Performance outcomes from the simulation tool were compared with outcomes from two other instruments – one measured preferred negotiation strategies (Marks & Harold, 2011) and the other self-efficacy in the use of integrative and distributive tactics (Sullivan, 2006).

Preferred negotiation strategies. Previous studies have provided evidence that competing and collaborating strategies produced better negotiated outcomes because the former focused on claiming value for one self and the later on integrating needs so that both negotiating parties face a win-win situation (Pruitt & Lewis, 1975; Pruitt, 1983; Shell, 2007). I hypothesized that students with high scores in their preference for competing and collaborating strategies would also have higher scores in overall competency and value of the negotiated outcomes. On the other hand, students with high scores in their preference for accommodating and compromising strategies would have lower scores in the assessment outcomes.
Table 5.1
A Summary of the Relationships between Preferences for the Four Types of Negotiation Strategies and the Assessment Tool’s Outcomes

<table>
<thead>
<tr>
<th></th>
<th>Competitive Strategies</th>
<th>Collaborative Strategies</th>
<th>Compromising Strategies</th>
<th>Accommodating Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall competency</td>
<td>None</td>
<td>Positive and moderate relationship ( r = .30^{**} )</td>
<td>Negative and moderate relationship ( r = -.26^{**} )</td>
<td>Negative and moderate relationship ( r = -.58^{**} )</td>
</tr>
<tr>
<td>Negotiated outcome</td>
<td>Negative and small relationship ( r = -.18^{*} )</td>
<td>None</td>
<td>Negative and moderate relationship ( r = -.37^{**} )</td>
<td>Negative and moderate relationship ( r = -.41^{**} )</td>
</tr>
</tbody>
</table>

\( ** p < 0.01 \) (2-tailed)  
\( * p < 0.05 \) (2-tailed)

Table 5.1 provides evidence that the outcomes from the Preferred Negotiation Strategies instrument supported my hypothesis that students with high scores in accommodating and compromising preferences would have lower scores on overall competency and negotiated outcome. But the mixed findings for competing and collaborating preferences only partially supported my hypothesis.

When Mark and Harolds (2011) conducted their study using the Preferred Negotiation Strategies Survey, their participants had just negotiated a salary in real life and then self-reported the strategies they used during the recent negotiation. Their answers were highly influenced by what actually happened during the negotiations.

The participants in my study, on the other hand, filled in the survey instrument as an academic activity. Their answers reflected what they would do or should do and not what they actually did in a real situation. They may have overstated or understated their preferences for the strategies without fully understanding how the strategies play out in a real negotiation. These elements could have introduced some inaccuracies into the overall findings.

**Self-efficacy in using distributive and integrative strategies.** The other instrument used to provide evidence of construct validity was the Negotiation Self-Efficacy Survey that
assesses level of confidence in using Distributive tactics (DSE) and Integrative tactics (ISE). According to Sullivan et al. (2006) self-efficacy influences a person’s choice and use of tactics. A person with high DSE scores would be more likely to use distributive tactics and try to maximize their personal gains. Alternatively, someone with high ISE scores would be inclined to integrate the needs of both parties and make concessions to find a solution acceptable to both parties.

For this study, I hypothesized that there would be a positive link between high self-efficacy scores and the outcomes of the assessment tool. The findings, however, showed there was no relationship between those with high DSE or ISE scores and their assessment outcomes.

One possible reason for this finding is the self-reported nature of the data from the survey. The authenticity or accuracy of the participants’ responses could not be objectively verified. It could be that some participants claimed higher levels of confidence in a theoretical situation (see instructions for instrument in Appendix C) than they otherwise would if they had just completed a real negotiation. If the negotiation had gone unfavorably, their assessment of self-confidence would have been even lower. If this survey had been taken after a real event and participants reflected on their experience before completing the survey, the outcomes could have been different.

To sum up, neither the Preferred Negotiation Strategies Survey nor the Negotiation Self-Efficacy Survey directly measures the same constructs as the simulation tool that was focused on specific competencies. The competency modeling aspect of the study was exploratory research so there is no other tool that could provide an equivalent assessment. At best, these alternative instruments provided indirect inferences that students who did well in the simulation would demonstrate specific characteristics like preferred negotiation styles or high self-confidence.

**Impact of Individual Differences**

A substantial amount of research interest in this field had focused on individual differences and how these impact negotiation behaviors and performance. Some of the most popular personal traits researched have been gender (Barron, 2003; Kray & Thomson, 2005; Miles & Clenney, 2010), negotiation styles (Shell, 2007; Mark & Harold, 2011), and experience (Thomson, 1990b; Steinel et al., 2007). Although there is solid evidence that negotiation outcomes are influenced by the inherent characteristics of negotiators, many researchers also
believe that negotiation skills can be taught (Core, Traum, Lane, Swartout, Gratch, Van Lent, Marsella, 2006; Movius, 2008; Nadler et al., 2003). Therefore, I attempted to examine the impact of similar variables on the outcomes of the assessment tool.

**Gender**

The result of the analyses showed that gender influenced the outcomes of the simulation tool, with males slightly outperforming females on overall competency scores and value of negotiated outcomes. The final task in the simulation required students to make reasonable concessions based on what they knew to be the priorities of the character and the company. Students typically began by claiming as much as they could by entering the maximum salary or most value for other benefits before realizing the simulation program (represented by the company’s reactions in the scenario) would reject the counteroffers if the character exceeded a certain score for the value of negotiated outcome. Limited to only three tries to make alternative offers (thus forcing students to make concessions based on priorities), it is possible that male students remained relatively aggressive in claiming value even at the risk of reaching an impasse. Female students on the other hand, may have lowered their expectations and entered counteroffers that were lower than what the program would have been willing to accept. This led to lower values for negotiated outcomes.

This is a plausible explanation because other researchers have found that women tend to have lower salary expectations than men for the same contributions (Kaman & Hartel, 1994; Major, McFarlin, & Gagnon, 1984). Also, in a study by Barron (2003), women were less inclined than men to ask for a salary that is more than what others typically receive.

Similarly, women’s overall competency scores were lower because some of them may have aborted the negotiation sooner than they have to when the employer in the scenario stayed firm on the salary offer.

**Experience**

In terms of other personal factors, experience had the largest influence on the simulation outcomes. This corresponded with other research studies that indicated experience to be an important determinant of performance. According to Neale and Northcraft (1991), experienced negotiators have a greater ability to recognize opportunities that lead to integrative agreements.
than do novice negotiators. They have learned strategies that are effective across different circumstances. They also have more accurate judgments about their opponent and situation (Thompson, 1990c).

In this study, the tasks elicited evidence of competency that parallel successful collaborative negotiation strategies (such as soliciting information, identifying items to logroll, and making reasonable concessions). The students were given choices at each decision point that represented specific tactics used under collaborating strategies. They also needed to exercise judgment in terms of which tactic works better than others. For example, is it better to highlight research on market rates or to mention the BATNA? Expert negotiators could tap into past experiences or at least recognize similarities between the job negotiation scenario and other similar negotiation situations; then pick out the best answer. As a result, their competency scores would be higher than novices.

Moreover, highly experienced negotiators also set high aspirations, make small concessions, and are adept at proposing several different offers (Thomson, 1990c). In the simulation’s final task students were required to propose an integrative solution by making counteroffers. The experienced negotiators may have been more aggressive in claiming their share of the pie for items of most importance and made as little concession as they could get away with. This would be in contrast to novices who may have focused on items of least importance or claimed too little for themselves.

**Training**

The final factor identified as having an impact on performance in this study is training. This could be in the form of a negotiation class or course. All the undergraduates in this study were enrolled in a basic negotiation class and some graduate students have also had negotiation training on the job.

Due to the training experienced by more than half of the study participants, the multiple regression analyses identified training as a major predictor of performance for both the overall competency and negotiated outcome.

There are multiple research studies that identified training as a major determinant of negotiation performance. Some researchers found that experience coupled with advice on negotiation tactics led to better performance than experience alone (Nadler et al., 2003; Steinel et
al., 2007; Thompson & DeHarpport, 1998). Weingart et al. (1996) found that novice negotiators who were provided with tactical knowledge demonstrated more integrative negotiation behaviors and achieved higher joint outcomes than those who were not provided with the information.

Negotiation training, therefore, is a major research interest. Corporations have spent millions of dollars in training over the last decade to help improve negotiation outcomes, processes, and business relationships. However, very little systematic research has been done concerning the actual effectiveness of the training (Movius, 2008).

This is where this study and the simulation tool could contribute to this body of knowledge. One of the goals of this study was to design a tool that quickly diagnoses students’ negotiation competencies so that the information could be used to help with training and instruction. This would provide a more focused approach to teaching the skills and if used as a post-training device, could also be useful in evaluating the effectiveness of training.

**Limitations**

The use of a branching simulation tool based on multiple choice format to assess a complex domain like negotiation could be criticized as being too rigid. It does not capture the complex and dynamic interactions between a job candidate and the prospective employer as they seek information from each other and trade counteroffers. Instead, the interactions between characters in the assessment were highly scripted and presented as text-based choices available at each decision point. This limited what students could demonstrate in terms of their expertise level (for example, someone who recognized that one answer sounded better than the other two choices would do just as well as another student with superior communication skill who could have come up with better answers than the ones presented).

However, the basic negotiation process itself is almost formulaic especially if it is as simple as a salary negotiation (and not something complex like a trade agreement or a peace treaty). Experts generally agree that collaborative strategies provide a very good chance of reaching an integrated agreement. Therefore, the competencies identified in this study represented the main steps involved in such a negotiation and mimicked them in a simpler form. The limited number of decision points in the assessment simplifies a much longer iterative process of eliciting information, building trust, communicating different offers, convincing the other party, identifying common interests, and many other steps. Instead, the simulation
highlighted critical junctures in many negotiation situations and assessed the students’ recognition of the tactics they should be using. So as simplistic as a multiple choice simulation may sound, it is appropriate for the purpose at hand.

A multiple choice simulation was also chosen to be the assessment format because there was a limited amount of resources available to design and develop the assessment. This was an undertaking that required multiple skills and expertise such as scenario development, scriptwriting, designing the interface, generating graphics, and programming the branching options that could easily get out of control if too many options were presented. I did all of the work myself with the help of a single programmer who was paid to develop the more complex actions, the password-protected website, and the database.

On a separate note, this study relied heavily on self-reported data, hence possibly introducing inaccuracies or biases into the data. Participants may have been overly optimistic of their actual ability to utilize negotiation tactics especially in a hypothetical situation. They may have also overstated their experience in various negotiation settings.

Additionally, self-reported data were used to categorize students into high or low expertise level using the median split method. Using this method, there is not much separation of performance for those students in the middle range. This reduced the power of the analysis and possibly made it harder to find effects that were really there.

Finally, there is a lack of validated instruments that assess the same competencies as those in the study. This provided a challenge in producing evidence of construct validity based on similarity of results with other measures. Finding more suitable instruments to provide parallel measures of the competencies becomes critical for future research on this assessment tool.

**Future Research**

I would like to offer this tool to career centers at community colleges and universities so that students could use it to prepare for job interviews and salary negotiations. This tool could also be used by career planning classes and negotiation classes. This would present an enormous opportunity to gather negotiation performance data on a more diverse population. This study supported several findings from earlier research, namely the effect of gender, experience, and training on negotiation outcomes. With a bigger sample, I could explore the generalizability of
my preliminary findings to the population at large. I would also like to include additional variables such as ethnicity, educational background, motivations, and expectations, among others; to identify a wider variety of factors that impact performance outcomes.

This study is interesting because it examined specific competencies within the negotiation process. However, it does so at the surface level and not much is known about the cognitive processes that students rely on when they made their selection at each decision point in the simulation. I would like to include a mechanism where students provide a rationale for their choices. This would generate qualitative data that I could study to identify themes in students’ thought processes as they navigate the scenarios. It would enable me to make more accurate inferences of the students’ skills and knowledge based on insights from their thought processes.

I would also like to explore the use of this tool as part of negotiation instruction. This tool could be the assessment component for evaluating different training approaches. I would like to examine the types of training that are most effective in developing the competencies identified in this study.

**Conclusion**

In conclusion, the simulation created using the ECD framework is a valid assessment tool. Experts reviewed the competency model, evidence models, and task models and agreed that the tool demonstrated sufficient content validity. There was also some support for construct validity where it parallels outcomes from other measures of negotiation competency. This easily available online tool could be used to help students self-diagnose their strengths and weaknesses in job negotiation.

The resulting simulation is a formative assessment tool since it provides a diagnosis, followed by feedback and elaboration on how to overcome the weaknesses. These features support learning of job negotiation skills and make it a good tool to be used in classrooms.

Simulation as a learning tool is increasingly being used not only in classrooms but in organizational and corporate settings to teach soft skills like negotiation, leadership, customer service, communication, and many more. It has great appeal because simulations enable these skills to be taught in context and contribute to a richer learning experience. The greater affordability of multimedia authoring tools also means that the cost of development has been reduced, further increasing the utility and popularity of simulations. Since simulations are now
increasingly accepted and used in a variety of instructional settings, it is only natural that simulation environments are also being considered for assessing skills.

Designing a valid simulation-based assessment, however, is quite complex. A major challenge involves getting a team of experts with skills from disparate domains to work together to fulfill the assessment’s purpose. These skills include subject matter expertise, software design, psychometrics, assessment design, and pedagogical knowledge (Mislevy, 2010). Hence, a design framework like ECD is a useful conceptual design framework in such a setting.

The ECD framework supports a wide range of assessment types. These include standardized tests, classroom quizzes, game play assessments, coached practice systems, assessments for certification, and simulation-based assessments. The framework places an emphasis on the assessment purpose being the starting point for the assessor. This is followed by a systematic way to (a) define the claims about what the students can or cannot do (b) identify what constitutes valid evidence to support such claims, and (c) identify the features of tasks and situations that will produce that evidence. This structured approach enables different talents working on the simulation to be on the same page when it comes to assessment design. The same method of design and development could be used to generate other types of soft skills assessment that are relatively easy to implement while adhering to solid evidence-based assessment principles.
APPENDIX A
PERSONAL PROFILE SURVEY

Please answer the following questions about yourself.

What is your gender?
___ Male
___ Female

What is your age?
_____

What is your college major? (if not applicable skip to the next question)
__________________________

What is your college level? (if not applicable skip to the next question)
___ Undergraduate student
___ Graduate student

How many times have you attempted to negotiate a job offer?
___ Never
___ 1 to 2 times
___ 3 to 4 times
___ 5 to 6 times
___ 7 times or more

When you negotiated, how many times have you successfully improved on the original job offer?
___ Never
___ 1 to 2 times
___ 3 to 4 times
___ 5 to 6 times
___ 7 times or more

Have you had other types of experience with negotiation? (work, organizational, student activities, etc.)
___ No
___ Yes
If “Yes”, please briefly describe your experience.
_______________________________________________________________________
_______________________________________________________________________
_______________________________________________________________________
_______________________________________________________________________

Rate how well you know the strategies, tactics, and counter tactics of job negotiation.

__ 1 – Not at all
__ 2
__ 3
__ 4
__ 5 – Extremely well

Have you had formal training in negotiation? (a training course or a class)

__ Yes
__ No

If yes, please briefly describe the training:
_______________________________________________________________________
_______________________________________________________________________
_______________________________________________________________________

_______________________________________________________________________
Below are 21 statements relating to job negotiation tactics. Please think about each statement and indicate how true it is for you. There is no right or wrong answer because each person has his or her own preferred style of negotiation. Give the answer that truly applies to you, and not what you would like to be true, or what you think others want to hear. When you have finished answering all the questions, click on the Submit button at the bottom of the page.

<table>
<thead>
<tr>
<th></th>
<th>Statement</th>
<th>Not True</th>
<th>Slightly True</th>
<th>Moderately True</th>
<th>Mostly True</th>
<th>Very True</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>During negotiation, I will try to persuade the organization to better my offer by threatening to withdraw from the process.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>In the negotiation process, I will present information about my past record and qualifications to improve the quality of the offer extended to me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>During negotiations, I will make clear the value and benefit I can bring to the organization, in an attempt to influence the process.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>While negotiating, I will not take “no” for an answer.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>During the negotiation process, if I feel that the organization’s offer is unreasonable, I will make sure to make my feelings known.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>I will present information about the market value of the position for which I was hired.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7</td>
<td>I will try to negotiate an offer that is acceptable to both me and the organization.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8</td>
<td>I will try to integrate my interests with those of the organization to come up with an offer supported by both sides.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9</td>
<td>I will try to work with the organization to come up with an acceptable offer.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10</td>
<td>I will exchange accurate information with the organization to come to a joint agreement.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11</td>
<td>I will try to bring all of our concerns out in the open so that the issues can be resolved in the best possible way.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12</td>
<td>I will collaborate with the organization to come up with an offer acceptable to both of us.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13</td>
<td>I will try to work with the organization to gain a thorough understanding of their position.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14</td>
<td>I will try to find a middle ground to reach an acceptable offer.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Description</td>
<td>Rating</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>-----------------------------------------------------------------------------</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>I will propose a middle ground to resolve the differences between our two sides.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>I will “give and take” so that compromise can be made.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>I will initiate job negotiations, but I will give in to the demands of the organization.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>To reach an agreement, I will allow more concessions than the organization.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>I will feel that I am trying to accommodate the wishes of the organization.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>Though I will attempt to negotiate, I will find myself going along with much of what the organization initially offered.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX C

NEGOTIATION SELF-EFFICACY SURVEY

(Sullivan, O’Connor, & Burris, 2006)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>No Confidence</th>
<th></th>
<th>Full Confidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Establish a high level of rapport with the other negotiator.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Prevent the other negotiator from exploiting your weaknesses.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Find tradeoffs that benefit both parties.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Convince the other negotiator to agree with you.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Persuade the other negotiator to make most of the concessions.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Look for an agreement that maximizes both negotiators’ interests.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Gain the upper hand against the other negotiator.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Exchange concessions.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Imagine yourself in a job negotiation situation. Please estimate your level of confidence that you can effectively perform each of the negotiation tactics listed below. For each tactic, estimate your confidence on a scale of 1 (No Confidence) to 5 (Full Confidence). Give the answer that truly applies to you, and not what you would like to be true, or what you think others want to hear.
Who is Josh Wellington?
Josh Wellington is a 23 year-old recent computer science graduate with a deep passion for computer games. He’s highly competitive, enjoys new challenges, and hopes to one day become a lead game developer at a major games company. He loves creative environments where he can be independent, have fun working in a relaxed informal setting, and try out new ideas. While in college, Josh and his best friends, Lamar Wilkins and Ryan Copeland, developed several basic games. Their iPhone apps saw modest success at the iTunes store. After a couple of months searching for a job, Josh has two job offers.

The more attractive offer came from Mindmeld Enterprises, a 2 year-old startup company specializing in social media marketing and game applications for iPhone, iPad, Android, and Windows Mobile devices.

What is the offer?
The company offered him a basic salary of $42,000 as a Junior Mobile Developer, basic health and dental benefits, and 15 days personal leave. Josh is not too happy about the low starting pay. He has a $30,000 student loan that he would like to pay off as soon as he can and save some money so that he can travel to interesting places around the world. His research at Salary.com shows that the average pay for a junior programmer is $40,000 to $55,000. Josh would like the company to offer more money.

They also want him to start immediately since they are rather short-handed right now. This poses a problem because Josh, Lamar, and Ryan had saved and planned for a backpacking trip to Europe since last year.
They are leaving in a couple of weeks and will not be back for a month. If Josh backs out of the trip, he will forfeit what he has paid in advance for the airfare and lodgings. As such, he would prefer to have a later start date.

Josh would also like the company to offer a performance bonus. He may accept a lower salary if a performance bonus is given out to reward outstanding performance.

**What is the Best Alternative To Negotiated Agreement (BATNA)?**

The alternative offer was from Intel Systems, an established software company that serves financial institutions. They've offered him an Associate Programmer Analyst position starting at $46,000. The position requires traditional computer programming skills and the work environment is not as appealing. Josh prefers to work for Mindmeld but if they can’t make a better offer, he may need to accept Intel Systems’ offer instead.

**Josh Wellington’s Priorities Based on His Needs**

- Later Start Date (High Priority)
- Higher Salary (Medium Priority)
- Performance Bonus (Low Priority)
Who is Shauna Williams?
Shauna, 27-years-old, enjoys being around young children and had worked as a child care teacher for a few years. When the recent depression hit and she lost her job, Shauna decided to go back to school and get an online Masters degree in Child Development.

Shauna has a 5-year-old son, Lamar. Her husband, Travis, works full-time as a Sales Consultant to support the family. They are struggling to make ends meet on Travis’ single income due to her $35,000 student loans, mortgage payment, and daily expenses.

Shauna is looking for a job to help supplement her family income. She wants a job that’s challenging and satisfying; yet provides time for her to enjoy life with her family. After searching for several weeks, Shauna’s efforts were rewarded when two companies made her an offer.

What is the offer?
The offer she really liked is from a family-owned company called Smart Prep. It’s a center close to Shauna’s home that provides enrichment and tutoring services for children between the ages of 5 to 12. As a part-time tutor and enrichment specialist, Shauna can work 20 hours per week at $20 per hour.

After doing a little research, however, Shauna found out that the average hourly rate for this position ranges from $25 to $35 per hour, depending on the tutor’s area of expertise and experience.
As a Math major in college, Shauna knew her expertise is in high demand. She would like Smart Prep to increase their offer to $35/hr. Shauna is also concerned that she may need to pay a babysitter or daycare for her son. But she wouldn't need a babysitter if her son is enrolled in the center's programs while she's working close by.

Shauna knows a number of classmates and friends who may be looking for similar opportunities. These contacts are highly qualified individuals who would make great additions to the center. The company’s website showed that Smart Prep offers employee referral bonuses of $100. She would like SmartPrep to offer $150 each time someone she recommends get hired by them.

What are her BATNAs?
The other offer was from Healthy for Life, a health fitness club offering $40,000 a year plus benefits for Shauna. It’s an exciting opportunity for her to design and be involved in enrichment programs that inspire kids to eat right, have fun, and be creative problem solvers. The money would go a long way towards helping her family pay the bills and student loans. However, she would be working 40 hours per week. Shauna prefers to work at Smart Prep but if she cannot negotiate what she needs from the SmartPrep, she may have no choice but to accept Life Time’s offer.

Shauna Williams’ Priorities Based on Her Needs
Higher Hourly Rate (High Priority)
Full Subsidy for Enrichment Programs (Medium Priority)
Higher Referral Bonus (Low Priority)
Who is Aileen Chang?
Aileen Chang is a 21-year-old Senior studying Business Administration with a major in Management. She and her parents migrated from China while Aileen was still a toddler. Her parents had toiled long hours in the small convenience store they owned to put Aileen through college. Her mom also works part-time as a bookkeeper for another small company.

She’s now a few months away from graduating and for the last few months she has been doing an internship with a local bank near her college, Integrity Plus Credit Union. Aileen does special projects for the Human Resources Manager. Her boss, Raj Patel, has been very impressed with her work. He explained that he sees a lot of potential in Aileen and is even talking about her being part of a junior management team eventually.

What is the offer?
Aileen did some research on Salary.com and found that the average starting salary for a Human Resource Assistant is $35,000. The bank is only offering $30,000 a year but provides a generous benefits package. Raj also mentioned that the probationary period for employees is nine months and if Aileen does well, he would try to get her a raise.

What is the offer?
Aileen did some research on Salary.com and found that the average starting salary for a Human Resource Assistant is $35,000. The bank is only offering $30,000 a year but provides a generous benefits package.
Raj also mentioned that the probationary period for employees is nine months and if Aileen does well, he would try to get her a raise.

Aileen discussed the offer with her parents. They told her that she should not be so picky in this economy. “Just take the job,” they advised, “Unlike many of your friends, you’ll actually have a job when you graduate and it’ll be good work experience.”

Aileen is smart, hardworking, ambitious, and in a hurry to start making good money so that her parents won't have to work so hard. As their only child, she felt a strong duty to support her family. She prefers the opportunity to make more money sooner rather than later. She also recognizes that she has a lot to learn in her first job. A degree in business administration is a good start but there is still much to learn about human resource functions and the banking industry in general.

Raj Patel has been a very good mentor and Aileen enjoys working with him. She knows she has to approach the negotiation carefully because if it goes badly, it might affect her working relationship with Raj for the rest of her internship at the bank.

What are her BATNAs?
Aileen has a challenge ahead of her. She needs to convince Raj to improve the offer but she has no other offers to use as leverage in the negotiation. If Raj refuses to increase the starting salary, she will be making $5,000 less than her counterparts. Then there’s Matt Stanford, the other Business undergraduate interning with her. Judy is concerned that Raj may offer Matt the job instead.

Aileen Chang's Priorities Based on Her Needs
Better Salary (High Priority)
Quick Performance Review (Medium Priority)
Training Budget (Low Priority)
APPENDIX G

ELABORATION OF JOB NEGOTIATION COMPETENCIES

- **Make Counter Offers (M1)**
  - Identify options that are not in the initial offer (C2)
    - Includes healthcare benefits, stock options, retirement benefits, modification of job title and job description, conference budget, professional development, travel allowance, clothing allowance, more personal leave, bonuses, a performance review sooner than normal followed by a possible raise, relocation expenses, tuition reimbursement, flexible work time, telecommuting, sick leave, unpaid leave, technology or special equipment, child care, company car, starting date, etc.

- **Make Reasonable Concessions (M2)**
  - Solicit information on the employer's needs and priorities (C4)
    - Identify the issues that the organization can be flexible on and those they place on high priority
    - Includes flexible hours, start dates, various types of allowances, moving expenses, training budget, performance targets such as sales, billable hours, etc.
  - Identify items that have potential for concession (C5)
    - Examine the similarities and differences in priorities between the two negotiating parties and use the information to highlight possibilities for give and take.
  - Offer concessions (C6)
    - Use logroll techniques by giving in on items of less importance to get items of higher priority, split the difference on all issues, etc.

- **Overall Job Negotiation Competency (O)**
  - Discuss own priorities and the company's priorities to find common ground (C3)
    - Highlight personal needs such as relocation needs, transportation allowance, expense card, additional training, professional development, flexible hours, later start date, more vacation time, telecommuting, etc.

  - Provide justification in proposing counter offers (C1)
    - Uses Best Alternative to Negotiated Agreement (BATNA)
    - Mentions mentioning fair market rates, additional qualifications, more experience than a typical newcomer, related coursework and projects
    - Highlights previous jobs, internships, student organization experience, volunteer experience, job specific competencies
    - Highlights specific attributes attractive to employers and job specific competencies, etc.
## APPENDIX H

### COMBINED EVIDENCE MODEL AND TASK MODEL

<table>
<thead>
<tr>
<th>Competencies</th>
<th>Performance Claims</th>
<th>Task Performance</th>
<th>Consequences in Simulation</th>
</tr>
</thead>
</table>
| Make Counteroffers (M1)       | Student can provide justification in proposing counteroffers (C1).                 | Good Choice (Score: 5) Student selects options that provide excellent justification for the requests. The reasoning used should appeal to fairness in terms of equality-based, needs-based, or equity-based. | Good Outcome
The employer agrees to most of the requests. |
|                               |                                                                                    | Mediocre Choice (Score: 4) Student selects options that provide reasonable justification for the requests. | Mediocre Outcome
The employer agrees to one or two of the requests. |
|                               |                                                                                    | Poor Choice (Score: 0) Student selects options that provide poor justification for the requests. | Poor Outcome
The employer does not agree to any of the requests. |
| Make Counteroffers (M1)       | Student can identify options that are not in the initial offer and meet personal priorities (C2). | Good Choice (Score: 5) Student selects options proposing counteroffers (additional benefits) that meet personal priorities. | Good Outcome
Student has the opportunity to add other compensation items or negotiate a working arrangement that benefits both parties. |
|                               |                                                                                    | Mediocre Choice (Score: 4) Student selects options proposing counteroffers (additional benefits) that do not meet personal priorities. | Mediocre Outcome
Student has the opportunity to add one or two compensation items or negotiate a working arrangement that benefits both parties. |
|                               |                                                                                    | Poor Choice (Score: 0) Student selects options that focus on one item on which to negotiate that does not meet personal priorities. | Poor Outcome
Student has no opportunity to add other compensation items or negotiate a working arrangement that benefits both parties. |
<table>
<thead>
<tr>
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<th>Task Performance</th>
<th>Consequences in Simulation</th>
</tr>
</thead>
</table>
| Make Counteroffers (M1)   | Student can communicate personal needs and priorities (C3).                        | Good Choice (Score: 5)  
Student selects options that demonstrate openness about own needs and clearly indicate priorities. | Good Outcome  
Employer expresses willingness to explore other ways to meet the character’s needs. |
|                           |                                                                                    | Mediocre Choice (Score: 4)  
Student selects options that demonstrate some willingness to talk about own needs but do not distinguish between needs and priorities. | Mediocre Outcome  
Employer expresses some willingness to explore other ways to meet the character’s needs but without knowing the priorities, may offer something of less value. |
|                           |                                                                                    | Poor Choice (Score: 0)  
Student selects options that do not communicate own needs and priorities, but focuses instead on one issue (e.g., starting salary). | Poor Outcome  
Employer is not willing to provide concession and there is no discussion of other options. |
| Make Counteroffers (M1)   | Student can solicit information on the employer’s needs and priorities (C4).       | Good Choice (Score: 5)  
Student selects options that gather information about the employer’s needs and priorities. | Good Outcome  
Student is able to use information to negotiate terms that include more items while meeting the employer’s priorities. |
|                           |                                                                                    | Mediocre Choice (Score: 4)  
Student selects options that gather information about the employer’s needs but not the priorities. | Mediocre Outcome  
Student is able to use information to gain one or two items but does not meet the employer’s priorities. |
|                           |                                                                                    | Poor Choice (Score: 0)  
Student selects options that fail to gather information about the employer’s needs and priorities. The student instead focuses on a single issue that is not a high priority to either party. | Poor Outcome  
Student is unable to get more concessions from the employer since student has no knowledge of what the employer’s priorities are. |
<table>
<thead>
<tr>
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<th>Task Performance</th>
<th>Consequences in Simulation</th>
</tr>
</thead>
</table>
| Make reasonable Compromises  | Student can identify strategies for making concessions (C5).                         | Good Choice (Score: 5) selects options that suggests both parties make reasonable concessions based on needs and priorities. | Good Outcome  
Character and company develop trust and are able to negotiate in good faith.         |
| Students can make reasonable compromises (M2). |                                                                                      | Mediocre Choice (Score: 4) selects options that offers to simply split the difference on all issues. | Mediocre Outcome  
Character and company develop some mistrust and the negotiation becomes strained. |
| Given a detailed case study (with a payoff table as a guide), student will be able to make trade-offs that satisfy both parties. |                                                                                      | Poor Choice (Score: +0) selects options that does not offer any concessions.               | Poor Outcome  
Character and company do not trust each other and the negotiation becomes frustrating for one or both parties. |
| Make reasonable Compromises  | Student can offer concessions (C6)                                                  | Good Make counteroffers that get maximum gains on items of higher priorities.        | Good Outcome  
Student scores above 750 points.                                                      |
| Students can make reasonable compromises (M2). |                                                                                      | Mediocre Make counteroffers that splits the difference on all issues.                | Mediocre Outcome  
Student scores between 300 to 750 points.                                               |
|                             |                                                                                      | Poor Make counteroffers that did not take into account the priorities.                | Poor Outcome  
Student scores less than 300 points.                                                  |
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</table>
| Make reasonable Compromises  | Students can offer concessions on items of least importance to gain concessions from employer on more important ones (C7). | Good Choice (Score: 5)  
Student uses the trade-off matrix provided to select options that (a) offer to give up items of least importance to the student to accommodate the interviewer’s most important needs AND (b) asks employer to give in to items that are least important to the organization to accommodate the student’s most important needs (collaborative strategy). | Good Outcome  
The parties came to an agreement and both sides are happy with the negotiation outcome. The student started work and was a productive and motivated employee. |
| Students can make reasonable compromises (M2). |                                                                                   | Mediocre Choice (Score: 4)  
Student uses the trade-off matrix provided to select options that offer a middle ground on some of the items being negotiated (compromising strategy). | Mediocre Outcome  
The parties came to an agreement but neither side is really happy with the negotiated outcome. The student started work but felt resentful and quit the job a year later. |
|                              |                                                                                   | Poor Choice 1 (Score: 0)  
Student asks for concession on own needs but does not offer to give anything up to accommodate priorities of company (competitive strategy). | Poor Outcome 1  
The character rejects the offer. |
|                              |                                                                                   | Poor Choice 2 (Score: 0)  
Student offers no concession nor asks for any from company. | Poor Outcome 2  
The employer rescinds the offer. |
|                              |                                                                                   |                                                                                   | Poor Outcome 3  
The parties come to an agreement, but the student was unhappy with the negotiated outcome. The student resigned 6 months later to find a new job. |
APPENDIX I

TASK MODEL
Slide 9: Mindmeld is silent or puzzled (when muligan offered) (graphic neutral)
- Ask if organization would consider a later start date and a performance bonus of 5%. (G)
- Ask for more personal leave and flexible hours. (M)
- Insist on higher salary of at least $45,000 and threaten to accept Akron offer. (P)

Slide 10: Mindmeld asks why it should agree to such requests. (graphic not too happy)
- Explain that the trip is hard to reschedule and need the performance bonus to compensate for taking lower salary. (G)
- Explain that other organizations are offering similar benefits and you prefer to start later due to prior commitments. (M)
- Explain that since the starting pay is below market rate, you need to ask for any other benefits. (P)

Slide 11: Mindmeld is open to considering the additional options but appear hesitant to commit. (graphic not too happy)
- Ask Mindmeld what are their most important priorities. (G)
- Ask Mindmeld what their priorities are. (M)
- Assure Mindmeld that you're worth the investment. (P)

Slide 12: Eric is silent or puzzled when muligan offered (graphic neutral)
- Accept offer
- Reject offer and go with Akron Tech. (M)

Slide 13: Eric is silent or puzzled (when muligan offered) (graphic neutral)
- Ask if organization would consider a later start date and a performance bonus of 5%. (G)
- Ask for more personal leave and flexible hours. (M)
- Insist on higher salary of at least $45,000 and threaten to accept Akron offer. (P)

Slide 14: Josh took the offer with Akron Tech but he is not happy with the filming environment and the work he's doing. He ends up quitting 6 months later to find another job in game development. (S=0)
- P=250
Slide 11: Mindmeld is open to considering the additional options but appears hesitant to commit. (graphic not too happy)
- Ask Mindmeld what their most important priorities are. (G)
- Ask if Mindmeld has any concerns. (M)
- Assure Mindmeld that you're worth the investment. (P)

Slide 12: Mindmeld expresses concerns (3 different descriptions based on previous slide's choice)
- Mindmeld explains that keeping costs low is a top priority for them. So it's important for them to not overcommit resources to compensation. They are also quite concerned that the later start date will affect their production deadline although they can hold the fort for 2 weeks. (graphic is neutral)
- Mind explains that they have three issues of concern—salary, bonus, and start date. (graphic is concerned)
- Mindmeld is not impressed (graphic looks hostile) but they also shared their concerns with regards to salary, bonus, and delay start date.

Offer concessions
- Offer to make concessions on starting salary, delay start dates, and annual bonus. But tell Mindmeld that you expect them to give in on some of these issues as well.
- Politely but firmly stick with $46,000, delay start date by 4 weeks, and performance bonus of 5%.
- Offer to split the difference on all items being negotiated—$45,000 on starting salary, delay start date by 2 weeks, and performance bonus of 5%.

Slide 13: Mindmeld is not impressed (graphic looks hostile) but they also shared their concerns with regards to salary, bonus, and delay start date.

Slide 14: Eric is silent or puzzled when Mulligan offered (graphic neutral)
- Ask if organization would consider a later start date and a performance bonus of 5%. (G)
- Ask for more personal leave and flexible hours. (M)

Slide 15: Eric is silent or puzzled when Mulligan offered (graphic neutral)

Slide 16: Eric is silent or puzzled when Mulligan offered (graphic neutral)

Slide 17: Eric is silent or puzzled when Mulligan offered (graphic neutral)

Slide 18: Eric is silent or puzzled when Mulligan offered (graphic neutral)
- Ask if organization would consider a later start date and a performance bonus of 5%. (G)
- Ask for more personal leave and flexible hours. (M)
APPENDIX J

HUMAN SUBJECT APPROVAL

Office of the Vice President for Research
Human Subjects Committee
Tallahassee, Florida 32306-2742
(850) 644-8673 · FAX (850) 644-4392

APPROVAL MEMORANDUM

Date: 03/16/2013

To: Iskandaria Masduki

Address: 2802

Dept.: Center for Information, Management & Educational Services

From: Thomas L. Jacobson, Chair

Re: Use of Human Subjects in Research:
Evidence-Centered Design of Branching Simulation to Assess Job Negotiation Competencies of College Students

The application that you submitted to this office in regard to the use of human subjects in the proposal referenced above have been reviewed by the Secretary, the Chair, and two members of the Human Subjects Committee. Your project is determined to be Expedited per 45 CFR § 46.110(7) and has been approved by an expedited review process.

The Human Subjects Committee has not evaluated your proposal for scientific merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefit. This approval does not replace any departmental or other approvals, which may be required.

If you submitted a proposed consent form with your application, the approved stamped consent form is attached to this approval notice. Only the stamped version of the consent form may be used in recruiting research subjects.

If the project has not been completed by 06/14/2013 you must request a renewal of approval for continuation of the project. As a courtesy, a renewal notice will be sent to you prior to your expiration date; however, it is your responsibility as the Principal Investigator to timely request renewal of your approval from the Committee.

You are advised that any change in protocol for this project must be reviewed and approved by the Committee prior to implementation of the proposed change in the protocol. A protocol change/amendment form is required to be submitted for approval by the Committee. In addition, federal regulations require that the Principal Investigator promptly report, in writing any unanticipated problems or adverse events involving risks to research subjects or others.

By copy of this memorandum, the chairman of your department and/or your major professor is reminded that he/she is responsible for being informed concerning research projects involving human subjects in the department, and should review protocols as often as needed to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

This institution has an Assurance on file with the Office for Human Research Protection. The Assurance Number is IRB00000446.

Cc: Valerie Shute <vshute@fsu.edu>, Advisor
HSC No. 2012.8198
Office of the Vice President For Research  
Human Subjects Committee  
P. O. Box 3062742  
Tallahassee, Florida 32306-2742  
(850) 644-8673 - FAX (850) 644-4392

RE-APPROVAL MEMORANDUM

Date: 03/15/2014

To: Iskandaria Masadui

Address: 2802

Dept.: Center for Information, Management & Educational Services

From: Thomas L. Jacobson, Chair

Re: Re-approval of Use of Human subjects in Research:  
Evidence-Centered Design of Branching Simulation to Assess Job Negotiation Competencies of College Students

Your request to continue the research project listed above involving human subjects has been approved by the Human Subjects Committee. If your project has not been completed by 06/13/2014, you must request renewed approval by the Committee.

If you submitted a proposed consent form with your renewal request, the approved stamped consent form is attached to this re-approval notice. Only the stamped version of the consent form may be used in recruiting of research subjects. You are reminded that any change in protocol for this project must be reviewed and approved by the Committee prior to implementation of the proposed change in the protocol. A protocol change/amendment form is required to be submitted for approval by the Committee. In addition, federal regulations require that the Principal Investigator promptly report in writing, any unanticipated problems or adverse events involving risks to research subjects or others.

By copy of this memorandum, the Chairman of your department and/or your major professor are reminded of their responsibility for being informed concerning research projects involving human subjects in their department. They are advised to review the protocols as often as necessary to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

Cc:  
HSC No. 2013.10271
RE-APPROVAL MEMORANDUM

Date: 02/24/2015

To: Iskandaria Masduki

Address: 2802

Dept.: Center for Information, Management & Educational Services

From: Thomas L. Jacobson, Chair

Re: Re-approval of Use of Human subjects in Research:
   Evidence-Centered Design of Branching Simulation to Assess Job Negotiation Competencies of College Students

Your request to continue the research project listed above involving human subjects has been approved by the Human Subjects Committee. If your project has not been completed by 02/23/2016, you must request renewed approval by the Committee.

If you submitted a proposed consent form with your renewal request, the approved stamped consent form is attached to this re-approval notice. Only the stamped version of the consent form may be used in recruiting of research subjects. You are reminded that any change in protocol for this project must be reviewed and approved by the Committee prior to implementation of the proposed change in the protocol. A protocol change/amendment form is required to be submitted for approval by the Committee. In addition, federal regulations require that the Principal Investigator promptly report in writing, any unanticipated problems or adverse events involving risks to research subjects or others.

By copy of this memorandum, the Chairman of your department and/or your major professor are reminded of their responsibility for being informed concerning research projects involving human subjects in their department. They are advised to review the protocols as often as necessary to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

Cc: HSC No. 2014.12517
INFORMED CONSENT TO PARTICIPATE IN A RESEARCH STUDY
FLORIDA STATE UNIVERSITY

TITLE: Evidence-Centered Design of Branching Simulation to Assess Job Negotiation Competencies of College Students

You are invited to participate in a research study conducted by Iskandaria Masduki. The purpose of this research is to develop a branching simulation tool that could diagnose college students’ knowledge, skills, and abilities in job negotiation.

By participating in this study, you will
(a) validate a competency model identified through literature review
(b) determine the suitability of branching job negotiation scenarios developed by the researcher,
(c) provide feedback on an assessment simulation prototype, and
(d) provide feedback on the final product.

The total amount of time required for your participation will be
a) 2 hours to validate the competency model,
b) 2 hours to assess the suitability of the job negotiation scenarios,
c) 2 hours to provide feedback on the simulation prototype, and
d) 2 hours to provide feedback on the final product.

These activities may occur on separate occasions and will be scheduled according to your and the other experts’ availability.

Risks and discomforts
There are no known risks associated with this research.

Potential benefits
You will learn more about the most current research in negotiation.

Audio Recording
The researcher would like your permission to record audio during the focus group to make sure that the information she gets is accurately recorded. However, if you do not wish to be recorded, you can still take part in this study and she will take handwritten notes instead.

Protection of confidentiality
The researcher will do everything she can to protect your privacy to the extent allowed by law. The research data will be kept on a password-protected computer and only the researcher will have access to the data. Also, your identity will not be revealed in any publication that might result from this study.

HSC # 2013.10271
Voluntary participation
Your participation in this research study is voluntary. You may choose not to participate and you may withdraw your consent to participate at any time.

Contact information
If you have any questions or concerns about this study or if any problems arise, please contact Iskandaria Masduki at Florida State University

Major Professor: Dr Valerie J. Shute
(850) 644-8785
vshute@fsu.edu

Human Subjects Office: (850) 644-7900
humansubjects@magnet.fsu.edu

CONSENT

I have read this consent form and have been given the opportunity to ask questions. I give my consent to participate in this study.

Participant’s signature: ____________________________ Date: ____________

A copy of this consent form should be given to you.

INFORMED CONSENT TO PARTICIPATE IN A RESEARCH STUDY
FLORIDA STATE UNIVERSITY

TITLE: Evidence-Centered Design of Branching Simulation to Assess Job Negotiation Competencies of College Students

You are invited to participate in a research study conducted by Iskandaria Masduki. The purpose of this research is to develop a branching simulation tool that could diagnose college students' knowledge, skills, and abilities in job negotiation.

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c) 2 hours to provide feedback on the simulation prototype, and
d) 2 hours to provide feedback on the final product.

These activities will occur on four separate occasions and will be scheduled according to your and the other experts' availability.

Risks and discomforts
There are no known risks associated with this research.

Potential benefits
You will learn more about the most current research in negotiation.

Audio Recording
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FSU Human Subjects Committee approved on 6/15/2012. Void after 6/14/2013. HSC # 2012.8198
Voluntary participation
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FSU Human Subjects Committee approved on 6/15/2012. Void after 6/14/2013. HSC # 2012.8198
REFERENCES


**BIOGRAPHICAL SKETCH**

**ISKANDARIA MASDUKI**

**EDUCATION**

<table>
<thead>
<tr>
<th>Degree</th>
<th>Institution</th>
<th>Year</th>
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<tbody>
<tr>
<td>Ph.D. in Instructional Systems and Learning Technologies</td>
<td>Florida State University</td>
<td>2015</td>
</tr>
<tr>
<td>Masters of Science in Instructional Design &amp; Technology</td>
<td>California State University, Fullerton</td>
<td>2005</td>
</tr>
<tr>
<td>Bachelor of Business Administration</td>
<td>National University of Singapore</td>
<td>1993</td>
</tr>
<tr>
<td>Advanced Diploma in Computer Animation &amp; Visualization</td>
<td>Singapore Polytechnic</td>
<td>1998</td>
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**Certificates**

<table>
<thead>
<tr>
<th>Florida State University</th>
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<tr>
<td>Human Performance and Technology</td>
<td></td>
<td>2009</td>
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<tr>
<td>Program Evaluation</td>
<td></td>
<td>2009</td>
</tr>
<tr>
<td>Measurement and Statistics</td>
<td></td>
<td>2009</td>
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</table>

**PROFESSIONAL AND RESEARCH EXPERIENCE**

**User Experience and Instructional Designer**

*Florida Virtual Campus, University of West Florida*

- manage web development projects across multiple groups
- conduct research on user needs and develop user scenarios
- produce wireframes, flowcharts, storyboards, design documents, and production documents
- conduct usability testing of prototypes to identify effective navigation systems and content classification
- design interfaces for websites and e-learning materials according to principles of user-centered design
- develop websites using Sharepoint and Liferay content management systems
- create graphics and video assets for websites
- conduct learning needs analysis
- design and develop training materials using e-learning authoring tools

2014 - Present
Senior Research Associate and Instructional Design Coordinator  
Center for Information Management and Educational Services, Florida State University

- conducted research on competencies and training effectiveness utilizing surveys, performance tests, in-depth interviews, observations, and focus groups
- performed all phases of the ADDIE instructional design process including needs analysis, design, development, implementation, and evaluation
- conceptualized and designed engaging learning approaches for multimedia content utilizing scenarios, real-world tasks, animation, narration, 3D virtual characters, 2D simulations, learning checks, and online activities
- produced project and design documentation
- worked closely with subject matter experts to develop scripts and storyboards based on solid instructional design methods
- worked closely with clients and project developers to ensure content is delivered on time and within specifications
- developed multimedia learning modules using e-learning authoring tools
- supervised and mentored junior instructional designers

Graduate Assistant  
Florida State University

- conducted research on cognitive complexity
- developed a cognitive complexity model for the Florida Teacher Certification Examination
- facilitated usability tests of cognitive model
- produced training materials on cognitive complexity for educators

Adjunct Faculty  
California State University, Fullerton

- designed class curriculum and produced online tutorials to teach Adobe Captivate and Flash multimedia development
- conducted assessments, provided support for online graduate students, and utilized Blackboard to facilitate online discussions

Faculty  
The Art Institute, Orange County

- designed class curriculum and taught classes in instructional design, information design, motion graphics, character animation, image manipulation, and interface design for interactive media
Web Designer
Malfer Multimedia

- designed effective user interfaces and developed websites utilizing Flash animation, HTML and JavaScript
- responsible for content writing and editing
- participated in business development efforts to generate new projects

New Media Producer
NBC

- responsible for editorial content of www.nbc4.tv site
- video/audio editing for online streaming, web design, HTML coding, and Flash programming

Newscaster
Television Corporation of Singapore

- anchored the evening news
- news reporting and television production
- identified and established relations with contacts in private and government sectors

Regional Marketing Communications
Electronic Data Systems, Singapore

- managed telemarketing initiatives
- organized marketing seminars for software applications
- developed concepts, content and designs for promotional materials and regional newsletter
- created multimedia business presentations

HONORS AND AWARDS

APEX Award for Publication Excellence in the Education, Training, and Electronic Media category. Received for Project Traffic Forecasting training for the Florida Department of Transportation. 2014

APEX Award for Publication Excellence for Education, Training, and Video Publications category. Received for State Instructional Materials Committee training for the Florida Department of Education. 2008

1st Place Winner in Pacificorp Design and Development Competition. Presented at Association for Educational Communications and Technology (AECT) International Conference. 2008
Finalist for the Ruby Diamond Future Professor award for excellent performance in the instructional systems program. 2008

Finalist for the Liliana Mulhman Masoner award for excellent performance as an international student in the instructional systems program. 2008, 2009, & 2012

Finalist for the Gagne/Briggs award for excellent performance in the instructional systems doctoral program. 2012

Faculty of the Quarter award, The Art Institutes of California. 2005

PUBLICATIONS

Ifenthaler, D., Masduki, I., & Seel, N. M. (2011). The mystery of cognitive structure and how we can detect it: Tracking the development of cognitive structures over time. *Instructional Science, 39*(1), 41-61.


PRESENTATIONS


Association for Educational Communications and Technology International Convention, Orlando, FL.


REFEREED PAPERS AT CONFERENCES
