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LINKING EMOTIONAL INTELLIGENCE TO CRITICAL THINKING: BALANCING OUR
CURRICULUM WITHIN LEADERSHIP EDUCATION

Presentation Track: Research

Session Description:

This research session will provide attendees with a new view of Emotional Intelligence and Critical Thinking. Presenters will offer data supporting the relationship between the two and innovative ways to ensure that leadership educators are providing students with the necessary tools to be successful in today's workforce.

Bios:

Nicole Stedman, Assistant Professor, is a faculty member of the Agricultural Education Department. She came to Texas A&M in July, 2004 to teach Agricultural Leadership courses at the Undergraduate and Graduate levels. Dr. Stedman's Bachelors of Science, in Human Resource Development, Masters of Science, in Leadership, and Doctorate, in Leadership Education, are from the University of Florida in Gainesville. Prior to completing her PhD she spent four years working with youth through the justice system. Her current research interests include developing strategies for the teaching of leadership emphasizing Emotional Intelligence, Critical Thinking and change.

Tony currently serves as the Senior Employee Development Specialist for the Employee Development area of the Human Resource Department at Texas A&M University. A native of Cleveland, Ohio, Tony earned his Bachelor of Science degree in Communication from the University of Toledo, his Master of Science in Educational Administration from Texas A&M University, and his PhD in Leadership Development from Texas A&M University. He holds

certifications in Professional College Teaching, Instructional Leadership Development, Diversity Education, and Administrative Leadership. His research interests include the link between Emotional Intelligence and Critical Thinking, student development and empowerment, the globalization of leadership curricula, and empowering leadership creativity and intelligence.

LINKING EMOTIONAL INTELLIGENCE TO CRITICAL THINKING: BALANCING OUR CURRICULUM WITHIN LEADERSHIP EDUCATION

Introduction

Educators are faced with the daunting task of producing relevant leadership curricula capable of assisting in the development of successful students amid the backdrop of ever-changing conditions, including technological innovation, shifting social pressures and demographic diversity, and organizational dynamics. This challenge, coupled with the current organizational mega trends detailing the need for a globalized curriculum and the expectation for graduates to possess international perspectives (Barrett, 2001), forces leadership educators to be dynamic in their approach to developing skills and competencies within leaders. This dynamic approach is not only critical for the development of our students, but critical for the future of industry, business and related fields.

Katz (1955) put forth the three-skill approach model, which explained that leaders must have a mix of technical skill, human skill, and conceptual skill. Reiterated by Mumford, Zaccaro, Harding, Owens Jacobs, and Fleishman (2000), leaders must exemplify three skills, problem-solving skills, social judgment skills, and knowledge. In both of these models, it becomes evident that a leader must be able to do two things, work with and understand people and make good decisions.

Mixed methods and multi-media are becoming the standard and developing how students think is becoming as important as what students think. This philosophy translates into new opportunities for instruction and foundational approach for determining how educators can develop how students think. Two of the topical areas included in a foundational approach to leadership education are Critical Thinking and Emotional Intelligence.

Conceptual and Theoretical Framework

Facione (1990) defines Critical Thinking as “purposeful, self regulatory judgment which results in the interpretation, analysis, evaluation, and inference as well as the explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which judgment is based” (p. 2). Rudd, Baker, and Hoover (2000) furthered this concept citing that Critical Thinking is a “reasoned, purposive, and introspective approach to solving problems or addressing questions with incomplete evidence and information for which an incontrovertible solution is unlikely” (p.5). It is vital for students aspiring to serve in leadership positions to develop the ability to think critically as they attempt to solve problems and make decisions that have organizational implications. However, thinking skills are not developed in an accidental fashion (Beyer, 1987). The ability to develop thinking skills is an intentional process inclusive of the catalytic instructor. Perkins (1985) noted that skillful thinking is unnatural as demonstrated by Rodin’s sculpture “The Thinker”. The sculpture depicts an individual thinking in a particularly uncomfortable position alluding to the idea that thinking can be difficult, confusing, and even unnatural (1985). Beyer explains that “thinking requires deliberate, continuing instruction, guidance, and practice to develop its full potential” (1987, p.2).

Understanding the idea that the use of Critical Thinking skills increases the probability of desired outcomes (Halpern, 1996), then developing Critical Thinking skills amongst students becomes a palpable charge for leadership educators. As graduates assume leadership positions, Critical Thinking becomes paramount as they attempt to face decision making circumstances without having any habitual or learned knowledge of how to make these decisions. Thus, it is imperative that Critical Thinking is a foundational element of leadership education.

In the past, the majority of research and practice within education was focused on the skills of Critical Thinking. This narrow focus contributed to a skewed view of Critical Thinking by characterizing it as an assortment of skills rather than a complex and intentional process allowing for reasoned and judicious decisions to be made (Paul, 1990). However, over the past decade Critical Thinking skills have been lessened in priority to the learner's disposition to Critical Thinking skills within the educational and psychological arenas (Ennis, 1996, Esterle, 1993; Facione & Facione, 1992; Paul, 1990; Siegel, 1988; Tishman & Andrade, 1996,).

Together, the two factors provide educators with a much more holistic understanding of Critical Thinking and how to begin the process of empowering it. Plus, employers value both (Halpern, 1996), making them compulsory to higher education and vocational preparation. In fact when addressing education developmentally, it is suggested that skills and disposition are inherently linked and should be developed jointly (Kitchener & King, 1995). To assist educators in understanding this idea, Ennis (1994) and Perkins, Jay, and Tishman (1993) explain that much like a cup that breaks must have been breakable, if a person demonstrates a Critical Thinking skill, it can be substantiated that the person is disposed to using that skill (Facione, Facione, & Giancarlo, 2000).

To effectively understand disposition of Critical Thinking and its relationship to Critical Thinking skills it is important to operationalize a definition of Critical Thinking disposition. Critical Thinking disposition has been characterized as the consistent internal motivation to engage problems and make decisions by using Critical Thinking (Facione, Facione, Giancarlo, 1996). Unfortunately, this makes teaching Critical Thinking skills and increasing disposition to Critical Thinking more difficult for educators. Because motivation precedes learning, it is essential for educators to prioritize Critical Thinking as a means for success within the minds of

their students. If educators enhance the internal motivation to acquire Critical Thinking skills within their students, they will effectively increase students' disposition to Critical Thinking.

Critical Thinking can be broken down into six core skills, interpretation, analysis, evaluation, inference, explanation, and Self-Regulation (Facione, 1990). Although each of these are essential to the development of leadership students, for the purpose of this paper we will focus on the final core skill, Self-Regulation. Self-Regulation is important because it allows good critical thinkers to develop their own ability to think (Facione, 1990). This skill acts as a system of checks and balances allowing a student to review, challenge, and revise a decision that he or she has made and his or her decision making process. Facione explains that experts define Self-Regulation as:

“Self-consciously monitoring one’s cognitive abilities, the elements used in those activities, and the results induced, particularly by applying skills in analysis, and evaluation to one’s own inferential judgments with a view toward questioning, confirming, validation, or correcting either one’s reasoning or results” (1990, p.6).

The ability to self-monitor the decision making process becomes imperative for students aspiring to work in leadership capacities. It provides them with a foundation for empowering change, creating plans of action, addressing resistance, and visioning with their future organization and employees. Without a strong grounding in Self-Regulation, organizational decisions may become impulsive and rigid, leading to organizational stagnation and eventual failure.

Another tenet of leadership education is the development of emotional skills to enhance personal and organizational development. Langdon (1996) reported that there is an influx in the understanding of educators that emotional and social learning should be promoted in school

(Akers, Miller, Frazee, & Haygood, 2002). Jensen (1998) also notes that social and emotional education could be considered as the education's missing piece. Moreover, Akers et al. (2002) provides that development of Emotional Intelligence is fundamental to the philosophy of Agricultural Education. Emotional Intelligence is rooted in the work of Thorndike (1920) who explained that social intelligence is "the ability to understand and manage women and men, boys and girls – to act wisely in human relations" (p. 228). Emotional intelligence can be broken down into two areas as outlined by Salovey and Sluyter (1997). The areas are the understanding of emotion and the understanding of intelligence. These two ideas are concretely united in an effort to delineate the idea of Emotional Intelligence (Akers, et al., 2002). Thus, educators are forced to explore creative means of delivering curricula which dispose students to Emotional Intelligence and develop specific areas of Emotional Intelligence. Akers et al. (2002) provides the foundation for teaching Emotional Intelligence within Agricultural Education. She explains that that success in the adult world depends on both academic ability and social and emotional skills (Goleman, 1995).

Maintaining that Critical Thinking and Emotional Intelligence are both part of the underpinning of leadership education, it is important to question if there is a connection between the two. Through the examination of these two concepts one can infer that Self-Regulation, as a skill of Critical Thinking, can be likened to certain aspects of the core emotional competencies of Emotional Intelligence. The four core competencies are as follows (Salovey & Mayer, 1990):

1. The ability to accurately perceive, appraise, and express emotion
2. The ability to access or generate feelings on demand when they can facilitate understanding of yourself and another person

3. The ability to understand emotions and the knowledge that derives from them
4. The ability to regulate emotions to promote emotional and intellectual growth

Self-Awareness emerged from these four core emotional competencies as a governing tenet for the development of Emotional Intelligence. Self-Awareness refers to the ability to recognize a feeling as it happens (Goleman, 1995). This ability is paramount for students exploring service in leadership positions. Goleman noted that “the ability to monitor feelings from moment to moment is crucial to psychological insight and self-understanding” (1995, p.43). He further asserts that if individuals fail to recognize their true feelings, it can be detrimental (Goleman, 1995). “People with greater certainty about their feelings are better pilots of their lives, having a surer sense of how they feel about personal decisions, from who to marry, to what job to take” (1995, p. 43).

This is highly transferable to the work environment as leaders try to manage the daily activities required of them in their organizational roles. The lack of Emotional Intelligence undermines both a company’s growth and successes, and conversely the use of Emotional Intelligence can lead to more productive outcomes at the individual and organizational level (Weisinger, 1998). This is further confirmed by the overwhelming majority of employers who feel that Emotional Intelligence, and specifically Self-Awareness, is critical to success in business (Goleman, 1998). High Self-Awareness is the foundation from which all other Emotional Intelligence stems from (Weisinger, 1998). This coupled with the idea that employers expect employees to have high Emotional Intelligence, because it is highly correlated with positive social interaction (Lopes, Brackett, Nezlek, Schultz, Sellin, & Salovey, 2003) makes it

blatantly apparent that the development of Self-Awareness must be a foundational pillar of the leadership curricula.

Through an examination of Critical Thinking and Emotional Intelligence it is apparent that there is a link between the two philosophies. Self-Regulation within Critical Thinking and Self-Awareness within Emotional Intelligence are indelibly tied together as individuals develop the ability to identify and manage their feelings regarding the decisions that they make. High level abilities in both of these skills would allow for individuals to make effective decisions, have the ability to readdress and revise those decisions, and manage his or her feelings to enhance effectiveness throughout the process. This connection and development of these skills are critical to the foundation of leadership education.

This paper provides the empirical evidence for the connection between Critical Thinking and Emotional Intelligence, a demonstrated importance of these abilities to post-graduate success in leadership positions, and solidifies a foundation for a balanced curriculum within Agricultural Education. The purpose of this research was to investigate the relationship between Emotional Intelligence and Critical Thinking disposition in undergraduates of a leadership development program.

Methods

This correlational study used a survey research methodology to explore the relationship between Critical Thinking disposition and Emotional Intelligence. With that, questionnaires were used to measure the specific constructs of Emotional Intelligence and Critical Thinking disposition. This design allowed the researchers to discover relationships existing between Emotional Intelligence and Critical Thinking disposition using correlational statistics. A

scattergram was used to initially determine if a relationship was plausible and the normality of the data (Figure 1).

Undergraduates enrolled in a leading change course at a large Land Grant University were used as the population for this study. Data were collected during the spring and summer of 2005 (N=200). There were 164 students who submitted their questionnaires for useable data for a total response rate of 82%.

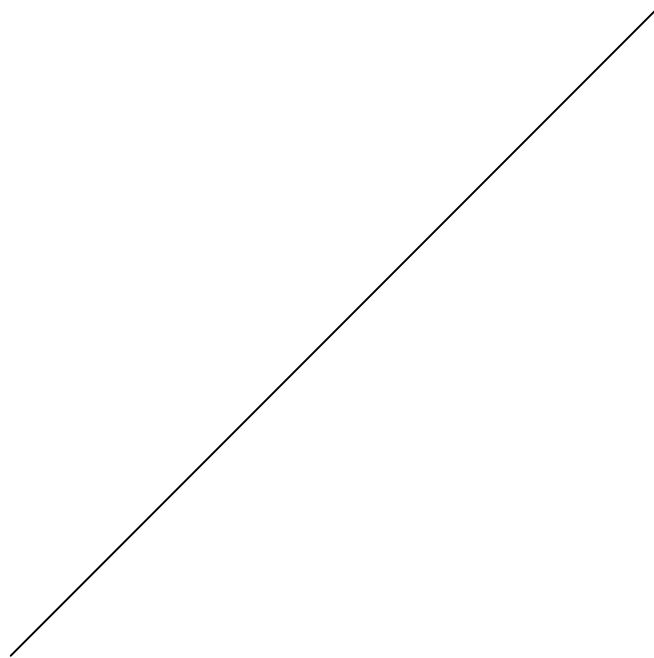


Figure 1. Scattergram of Emotional Intelligence and Critical Thinking Disposition Scores (n=164).

Instrumentation

As stated previously, the researchers used two questionnaires to collect data. These were the EMI and an abbreviated Emotional Intelligence Instrument.

In order to measure Critical Thinking disposition the EMI instrument was used (Ricketts & Rudd, 2005). The EMI was developed by Ricketts and Rudd (2005) to measure three identified scales, Engagement, Cognitive Maturity and Innovativeness. The EMI consisted of 26

questions measured on a Likert-type scale. The 26 questions were broken down into the three factors or scales; Engagement consisted of 11 questions, Cognitive Maturity 8 questions, and Innovativeness 7 questions. Although the questionnaire had already undergone reliability testing by the developers, Cronbach's alpha coefficients were calculated for each subscale. The Cronbach's alpha coefficient for Engagement was .78, Cognitive Maturity was .68, and Innovativeness was .75. These coefficients were acceptable for the purposes of this research due to the nature of measuring Critical Thinking disposition (Ricketts & Rudd, 2005).

Emotional Intelligence was measured using an abbreviated version (Daft, 2002) of the Developing Your Emotional Intelligence instrument developed by Weisinger (1998). This 25 question instrument contained five subscales of Emotional Intelligence Self-Awareness, Managing Emotions, Motivating Yourself, Empathy, and Social Awareness. Five questions measured each subscale. Cronbach's alpha coefficients were calculated for each subscale. The coefficients for the scales were: a) Self-Awareness, .71, b) Managing Emotions, .72, c) Motivating Yourself, .74, d) Empathy, .76, and e) Social Awareness, .76. Included on the Emotional Intelligence instrument was a short demographic questionnaire, which included 4 questions. These were gender, race/ethnicity, major and approximated GPR.

In order to determine the strength and direction of the relationships between the constructs of Critical Thinking and Emotional Intelligence Pearson Product-Moment Correlation Coefficients were computed using SPSS® Statistical Software for Windows®. Researchers chose the product-moment correlation coefficient r because of its ability to determine the magnitude of relationship between scores of two measures (Gall, Gall & Borg, 2003).

Researchers identified the following limitations of the study: a) the generalizability to other populations outside of the study, b) the abbreviated nature of the Emotional Intelligence instrument, and c) the self-reporting and self-perception nature of the instruments.

Findings

The researchers were guided by one research objective because the intent of the study was to establish baseline data exploring the relationship between the constructs of Critical Thinking disposition and Emotional Intelligence. Pearson Product-Moment Correlation Coefficients were computed for subscales of Critical Thinking disposition as reported on the EMI and Emotional Intelligence as reported on the abbreviated Developing Your Emotional Intelligence instrument, as well as the total scores for Critical Thinking and Emotional Intelligence. The Pearson Product-Moment Correlation Coefficients were computed using all returned questionnaires (n=164).

The magnitude of the Pearson Product-Moment Correlation Coefficients for the subscales of Emotional Intelligence and subscales of Critical Thinking disposition were determined using the following parameters: $r = 1.0$, perfect; $r = 0.99 - 0.7$, very high; $r = 0.69 - 0.50$, substantial; $r = 0.49 - 0.30$, moderate; $r = 0.29 - 0.10$, low; and $r = 0.09 - 0.01$, negligible (Miller, 1998).

Review of the correlational matrix showed significant positive correlations between all the subscales of Emotional Intelligence and Critical Thinking disposition. With that, Managing Emotions was found to have low to moderate positive correlations with the subscales of Critical Thinking disposition. These were with Cognitive Maturity, $r = .25, p < .05$; Engagement, $r = .17, p < .05$; and Innovativeness, $r = .33, p < .05$. The correlation with the combined Critical Thinking score was $r = .30, p < .05$.

Self-Awareness was also found to have low to moderate significant positive correlations with each subscale. These were with Cognitive Maturity, $r=.27, p<.05$; Engagement, $r=.22, p<.05$, Innovativeness, $r=.26, p<.05$ and total Critical Thinking disposition score, $r=.32, p<.05$.

The third subscale analyzed was Motivating Yourself and was found to have low to moderate significant positive correlations with the subscales of Critical Thinking disposition. The Pearson Product-Moment Correlation Coefficients for these were, Cognitive Maturity, $r=.29, p<.05$, Engagement, $r=.44, p<.05$, and Innovativeness, $r=.46, p<.05$. The correlation coefficient for the total score was, $r=.49, p<.05$.

Empathy was also found to have low to moderate significant positive correlations with Critical Thinking disposition scores on the three subscales. These were Cognitive Maturity, $r=.39, p<.05$, Engagement, $r=.29, p<.05$, and Innovativeness, $r=.20, p<.05$. The Pearson Product-Moment Correlation Coefficient for the total Critical Thinking disposition score was $r=.36, p<.05$.

The fifth subscale shown to have low to moderate significant positive correlations with the Critical Thinking disposition subscales was Social Awareness. The Pearson Product-Moment Correlation Coefficients were Cognitive Awareness, $r=.33, p<.05$, Engagement, $r=.36, p<.05$, and Innovativeness, $r=.22, p<.05$. The total Critical Thinking disposition score had a coefficient of $r=.37, p<.05$.

Lastly, the total score of Emotional Intelligence was analyzed for relationship magnitude and direction with the subscales of Critical Thinking Disposition. These Pearson Product-Moment Correlation Coefficients were found to be moderate significant and positive. These were Cognitive Maturity, $r=.43, p<.05$, Engagement, $r=.42, p<.05$, and Innovativeness, $r=.43, p<.05$.

When analyzing the relationship existing between the two computed scales of Emotional Intelligence and Critical Thinking Disposition, the Pearson Product-Moment Correlation Coefficient was significant, substantial and positive, $r=.53$, $p<.05$. This coefficient showed the relationship of the two constructs in whole, reiterating the relationships found among the subscales. These findings are represented in Table 1.

Table 1. Pearson Product-Moment Correlation Coefficients for Subscales of Emotional Intelligence and Critical Thinking Disposition (n=164)

Scale	Cognitive Maturity	Engagement	Innovativeness	Critical Thinking Disposition
Managing Emotions	.25	.17	.33	.30
Self-Awareness	.27	.22	.26	.32
Motivating Yourself	.29	.44	.46	.49
Empathy	.39	.29	.20	.36
Social Awareness	.33	.36	.22	.37
Emotional Intelligence	.43	.42	.43	.56

*Note: all significant at $p<.05$

Conclusions and Recommendations

Readers should approach the following conclusions and recommendations with caution due to the limitations discussed previously. Because the intent of this study was to establish baseline empirical data linking Emotional Intelligence and Critical Thinking, through the measurement of Emotional Intelligence and Critical Thinking disposition subscales, using data collected from undergraduates in a college of agriculture at a large Land Grant University conclusions and recommendations will be drawn for this population.

Although one can liken the difference between Emotional Intelligence and Critical Thinking to the difference between the heart and the head, the literature supports the notion that Critical Thinking and Emotional Intelligence are linked through identified behaviors such as Self-Awareness and Self-Regulation (Facione, 1990; Goleman, 1995). However, there has been significant lacking in identifying through empirical findings that a relationship does exist. The

findings substantiate the relationship between Emotional Intelligence and Critical Thinking disposition.

The relationship identified between the two constructs of Emotional Intelligence and Critical Thinking disposition through the Pearson Product-Moment Correlation Coefficient indicates that the relationship not only exists, but is one of significant moderate strength and positive direction ($r=.53, p<.05$). Even though the data does not imply causality, we can begin to explore the impact that these two constructs impart on one another. It may be that as one demonstrates a certain disposition to Critical Thinking that his/her Emotional Intelligence increases, or that if one shows a certain ability for Emotional Intelligence that (s)he also has a natural inclination to critically think.

So, what does this mean as we embark on strengthening our leadership education curricula for students entering the workforce? To refer back to Perkins (1985) depiction of skillful thinking there is an underlying message to educators; teaching one to think critically is not an easy task. However, combining Critical Thinking and Emotional Intelligence together, might yield an easier transition. Yet, placing both of these teachable practices in leadership education is an appropriate fit. The model proposed by Mumford, Zaccaro, Harding, et. al. (2000) provides a strong basis for leaders needing to demonstrate both Emotional Intelligence (social judgment skills) and Critical Thinking (problem-solving skills).

Tishman (1996) agreed that the workforce is seeking individuals with both Critical Thinking skills and a positive disposition toward Critical Thinking. Goleman (1995) and Weisinger (1998) both addressed the importance of Emotional Intelligence to the workplace and the need for employees with this attribute. Some of the greatest benefits to both students and the future employers they will serve, will stem from provide students with real case scenarios

allowing them to practice these skills. This reinforces Beyer (1987, p.2), who provided that the Critical Thinking is fully developed only under, "...continuing instruction, [and] guidance..."

Jensen (1998) went on to further explain that too often social and emotional education goes missing, leaving an opportunity to develop students in these areas. In Agricultural Education, leadership programs provide a natural fit to reinforce these skills (Akers, 2002). If we are challenged as a profession to prepare individuals for the working world and addressing the needs of employers, then it seems impervious that a strong emphasis be placed on Emotional Intelligence and Critical Thinking. If we are able to combine these two ideas in curricula than we have a much higher probability for reaching students, for changing them, and for developing them into leaders.

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