A Meta-Analysis of the Relationship Between Emotional Intelligence and Effective Leadership

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Abstract

The purpose of this study was to conduct a meta-analysis to ascertain if there was empirical evidence to support the inclusion of emotional intelligence as a component of effective leadership. It is proposed in this paper that emotional intelligence is a component of transformative leadership that should be evaluated and developed. In order to conduct the study, precise, composite definitions of emotional intelligence and effective leadership were drawn from the respective literature. One hundred and forty-one studies were reviewed for possible analysis with 48 studies meeting the criteria for inclusion. The study concludes that there is a moderately strong relationship between emotional intelligence and effective leadership. This study has implications for candidates of Educational Leadership Preparation Programs and the incorporation of emotional intelligence in the Educational Leadership Preparation Programs curriculum.

One skill set frequently cited in the literature on leadership as necessary in a variety of situations is the intrapersonal and interpersonal skills associated with emotional intelligence (Downey, Papageorgiou, & Stough, 2006; Dulewicz & Higgs, 2003; Rosete & Ciaramichi, 2005). While there are numerous studies that provide empirical evidence that emotional intelligence has a positive effect on leadership effectiveness (Coetzee & Schaap, 2004; Kerr, Garvin, Heaton, & Boyle, 2006; Goleman, 1995,1998; Leban & Zulauf, 2004; Srivastava & Bharamanaikar, 2004; Wong & Law, 2002), studies also reflect that emotional intelligence has no statistical significance in leadership effectiveness (Barbuto & Burbach, 2006; Barchard, 2003; Brown, 2005; Brown, Bryant, & Reilly, 2006; Schulte, 2002; Weinberger, 2003).

The purpose of this study was to conduct a meta-analysis to ascertain if a consistent, research-based link can be established between the concept of emotional intelligence and effective leadership. If this link can be established, it could have a significant impact on the selection and preparation of educational leaders. This linkage would also have implications for the exercise of leadership in educational arenas.

A meta-analysis can be defined as “the statistical analysis of a large collection of analysis results from individual results for the purpose of integrating the findings” (Glass, McGaw, & Smith, 1981, p. 3). Given the ongoing question in the literature of whether emotional intelligence affects leadership effectiveness, the incorporation of a meta-analysis might provide a more robust method to examine this relationship. A meta-analysis conducted by Van Rooy and Viswesvaran (2004) to predict workplace performance based on the level of emotional intelligence provided a starting point for
the current study, but this meta-analysis did not focus on leadership effectiveness as a specific concern for those associated with Educational Leadership Preparation Programs (ELPP).

Transformational Leadership and Emotional Intelligence

The concept of transformational leadership may provide a model for interpreting the relevance of emotions to leadership (Ashforth & Humphrey, 1995). According to Bass and Avolio (1993), there are four dimensions to transformational leadership: (a) idealized influence, (b) inspirational motivation, (c) intellectual stimulation, and (d) individualized consideration. Transformational leadership skills, based on these dimensions, might be considered to be intertwined with the concepts of emotional intelligence in the literature. Skills reflective of an emotional intelligence framework such as identifying and relating emotionally to others, acknowledging the needs, wishes, and feelings of subordinate individuals in an organization, or arousing emotions to foster change and commitment have been reflected in transformational leadership studies (Andersen, 2000; Ashforth & Humphrey, 1995; Hoffman & Frost, 2006). Table 1 shows a strong resemblance between transformational leadership and emotional intelligence no matter which model is examined (Ashkanasy, Hartel, & Daus, 2002).

Table 1
Comparison of Transformational Leadership Components with Emotional Intelligence Models

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Idealized Influence</td>
<td>Intrapersonal</td>
<td>Conscientiousness</td>
<td>Self Management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inspirational Motivation</td>
<td>General Mood</td>
<td>Motivation</td>
<td>Managing Emotions</td>
<td>Relationship Management</td>
<td></td>
</tr>
<tr>
<td>Intellectual Stimulation</td>
<td>Adaptability</td>
<td>Intuitiveness</td>
<td>Facilitating Thought</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individualized Consideration</td>
<td>Interpersonal</td>
<td>Interpersonal Sensitivity</td>
<td>Perceiving Emotions</td>
<td>Social Awareness</td>
<td></td>
</tr>
<tr>
<td>Stress Management</td>
<td>Emotional resilience</td>
<td>Understanding Emotions</td>
<td>Self Awareness</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Self Awareness</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Empirical links with emotional intelligence and transformational leadership behaviors are reported in the literature. Barling, Slater, and Kelloway’s study (2000) revealed emotional intelligence’s association with three aspects of transformational
leadership (idealized influence, inspirational motivation, and individualized consideration) using Bar-On’s 1997 mixed model. In addition, Leban and Zulauf’s 2004 study assessing emotional intelligence using an ability-based model (Mayer-Salovey-Caruso Emotional Intelligence Ability Test (MSCEIT)) and measure of leadership style (the Multifactor Leadership Questionnaire (MLQ)), found the overall emotional intelligence score and the ability to understand the emotions branch of the MSCEIT shared a significant correlation with the inspirational motivation subscale of the MLQ. The strategic use of emotional intelligence also shared a significant correlation with idealized influence and individual consideration. Mandell and Pherwani (2003) provide empirical evidence to support that emotional intelligence and transformational leadership are based on relationships and interrelated concepts. Specifically, the study reported that emotional intelligence scores could predict transformational leadership style. Sivanathan and Fekken (2002) reported followers’ evaluations of leaders’ transformational behaviors were positively related to leaders’ self-reports of emotional intelligence and ratings on leadership effectiveness. The above examples help to illustrate that leadership research considers the linkage between emotional skills of leaders and effectiveness and suggests that emotional intelligence shares a link with many of the elements that comprise transformational leadership.

Defining Effective Leadership and Emotional Intelligence

The question of definitions of variables is a particularly critical component of any meta-analysis. The problem of defining leadership is well established in the literature (Bass, 1990; Collins, 2001; Nahavandi, 2003; Northouse, 2006; Stogdill, 1974). Stogdill said that “there are almost as many different definitions of leadership as there are people who have tried to define it” (p. 7). Collins contends that vague, expansive definitions of leadership create problems when analyzing organizational issues.

When we define leadership by ascribing unlimited and undifferentiated functions and activities in an organization to leadership, according to Collins (2001, p. 22), we have really not defined leadership at all. We have simply thrown up our hands in frustration and “we prevent ourselves from gaining deeper, more scientific understanding about what makes companies tick”.

Although acknowledging the difficulty of providing a precise definition of leadership, Nahavandi (2003) and Northouse (2006), after conducting comprehensive reviews of the leadership literature, have found elements common to the phenomena of leadership no matter where or how leadership is exercised. Both Nahavandi and Northouse list three common elements: (a) Leadership involves interaction with a group, (b) Leadership involves the exercise of influence, and (c) Leadership involves the attainment of a goal.

Once we have established a reasonably precise definition of leadership then effective leadership must be defined. Northouse (2006) stated that leadership effectiveness is measured by the attainment of goals or objectives within a leadership context. Hartman (1999) contends that leadership effectiveness is defined both
objectively and subjectively. Subjective measures are usually based on ratings obtained from the leader’s superiors, peers, or subordinates. Examples of objective measures of performance or goal attainment can include profits, profit margin, test scores, graduation rates, sales increases, market shares, or profitability (Hartman, 1999). The two instruments used to measure leadership effectiveness most frequently cited in the studies included in the meta-analysis were the Multifactor Leadership Questionnaire (MLQ) and the Leadership Practices Inventory (LPI). The MLQ, developed by Bass and Avolio (2000), is a 45-item questionnaire that attempts to determine the multiple factors constituting a person’s leadership style. The Leadership Practices Inventory (LPI), developed by Kouzes and Posner (1995), has been used to assess over 350,000 individuals’ leadership skills. It is based on qualitative and quantitative research of everyday actions and behaviors of exemplary leaders in a variety of settings.

Researchers classify their conception of emotional intelligence as either ability models or mixed models. Ability models of emotional intelligence focus on the interplay of emotion and intelligence as traditionally defined while mixed models describe a conception of intelligence that includes mental abilities and other traits and talents including personality (Mayer, Salovey, & Caruso, 2000). Drawing from diverse elements of the literature, emotional intelligence was defined for the purpose of this study as the advanced ability to use self awareness and insight into self and others’ emotion to aid in cognitive processes to produce desired outcomes (Bar-On, 1997; Dulewicz & Higgs 2000; Goleman, 1998; Mayer, Salovey, & Caruso, 2000; McEnrue & Groves, 2006). One of the most frequently used instruments to measure emotional intelligence cited in this meta-analysis was the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) (Multi Health Systems, Inc, 2002). The MSCEIT is an ability-based scale that measures the capacity to reason using feelings and the capacity of feelings to enhance thought.

**Pertinent Literature**

As mentioned earlier, the meta-analysis performed in 2004 by Van Rooy and Viswesvaran was of assistance in informing this meta-analysis of the relationship between emotional intelligence and effective leadership. It is important to note that the Van Rooy and Viswesvaran study focused on work place performance and emotional intelligence. Also critical to the validity of this analysis were studies that questioned whether emotional intelligence had a significant effect on leadership effectiveness (Brown, Bryant, & Reilly, 2006; Buford, 2001; Collins, 2001; Schulte, 2002; Weinberger, 2003). For example, one study (Antonakis, 2004) included in the meta-analysis cites the claims that emotional intelligence apparently is twice as important as IQ or technical skills for leadership effectiveness as the main argument against emotional intelligence (see also Goleman, 1998). As stated by Mayer and Caruso (2002), emotional intelligence is an important capability, but one that co-exists with other strengths and weaknesses. The inclusion of Antonakis’ study and other work that questioned the linkage of emotional intelligence to leadership effectiveness or stated specifically that emotional intelligence did not contribute to leadership effectiveness provide more credibility for the ultimate conclusions of the study.
Methods and Results

The comprehensive attempt to identify relevant studies on emotional intelligence’s impact on leadership effectiveness conducted between 1990 to the present yielded 141 studies. Forty-eight studies met the criteria for inclusion in the meta-analysis sample. Those 48 studies yielded 99 correlations for analysis. Over half of the studies included in this study were in the form of unpublished dissertations (48%) and theses (8%) with forty-one percent of participants reported serving in the field of business or industry.

Determining the degree of homogeneity of the studies included in a meta-analysis helps to determine the statistical model to be used. A Q statistic was computed to explore whether the variability across effect sizes was greater than expected from sampling error alone. Based on a significant result for the Q statistic for these data, the hypothesis of homogeneity was rejected and a random-effects model was implemented. This significant Q statistic result was not unexpected given the essential random differences between studies that were associated with the framework of emotional intelligence chosen and other study variables (e.g., the framework of leadership effectiveness, occupational setting). Incorporating a random effects model allows for the estimation of the mean of effects which prevents the underestimation of the weight of a small study or the overestimation of the weight of a large study (Borenstein et al., 2007).

Using Biostat’s Comprehensive Meta-Analysis Software Version 2.0 (Borenstein, Hedges, Higgins, & Rothstein, 2005), the 99 effect sizes from the correlational studies with a total of 7,343 subjects were converted into Fisher Z scores and an overall effect size z was computed and converted to the initial metric of correlation coefficient. Based on the rule of thumb for judging the magnitude of the product moment correlation effect size suggested by Lipsey and Wilson (2001), correlation effect size values are considered small if less than or equal to .10, medium if equal to .25, and large if greater than or equal to .40. This meta-analysis yielded a combined effect of \( r = .38 \) which can be interpreted as a moderately strong relationship between emotional intelligence and leadership effectiveness. Although claims of the paramount or essential value of emotional intelligence as a component of leadership may be overstated, it would appear that emotional intelligence is at least an important element in the exercise of effective leadership. This finding can have significance for the evaluation of educational leaders. It would appear that emotional intelligence should be included in the formative evaluation of educational leaders. Table 2 provides a summary of the studies included in the meta-analysis.
Table 2

Summary of Studies Included in Meta-Analysis

<table>
<thead>
<tr>
<th>Study</th>
<th>Source</th>
<th>n</th>
<th>r</th>
<th>Lower limit</th>
<th>Upper limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Batastini, S.D. (2001)</td>
<td>Dissertation</td>
<td>15</td>
<td>0.619</td>
<td>0.156</td>
<td>0.859</td>
</tr>
<tr>
<td>Baumann, D. M. (2006)</td>
<td>Dissertation</td>
<td>62</td>
<td>0.648</td>
<td>0.475</td>
<td>0.773</td>
</tr>
<tr>
<td>BeShears, R. S. (2004)</td>
<td>Dissertation</td>
<td>159</td>
<td>0.453</td>
<td>0.320</td>
<td>0.569</td>
</tr>
<tr>
<td>Bradberry, T. R. (2003)</td>
<td>Dissertation</td>
<td>212</td>
<td>0.747</td>
<td>0.681</td>
<td>0.801</td>
</tr>
<tr>
<td>Brown, F. W., Bryant, S. E., &amp; Reilly, M. D. (2006)</td>
<td>Journal Article</td>
<td>95</td>
<td>0.040</td>
<td>-0.163</td>
<td>0.240</td>
</tr>
<tr>
<td>Buford, B. A. (2001)</td>
<td>Dissertation</td>
<td>108</td>
<td>0.336</td>
<td>0.130</td>
<td>0.514</td>
</tr>
<tr>
<td>Burbach, M. E. (2004)</td>
<td>Dissertation</td>
<td>146</td>
<td>0.150</td>
<td>-0.013</td>
<td>0.305</td>
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<tr>
<td>Carmeli, A. (2003)</td>
<td>Journal Article</td>
<td>98</td>
<td>0.320</td>
<td>0.130</td>
<td>0.487</td>
</tr>
<tr>
<td>Charbonneau, D. &amp; Nicol, A. (2002)</td>
<td>Journal Article</td>
<td>84</td>
<td>0.268</td>
<td>0.057</td>
<td>0.457</td>
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<tr>
<td>Cintron, N. E. (2004)</td>
<td>Dissertation</td>
<td>355</td>
<td>0.110</td>
<td>0.006</td>
<td>0.212</td>
</tr>
<tr>
<td>Coetzee, C. &amp; Schapp, P. (2004)</td>
<td>Journal Article</td>
<td>100</td>
<td>0.149</td>
<td>-0.048</td>
<td>0.336</td>
</tr>
<tr>
<td>Collins, V. L. (2001)</td>
<td>Dissertation</td>
<td>60</td>
<td>0.037</td>
<td>-0.221</td>
<td>0.291</td>
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<tr>
<td>Condren, T., Martin, B. N., &amp; Hutchinson, S. (2006)</td>
<td>Journal Article</td>
<td>32</td>
<td>0.033</td>
<td>-0.338</td>
<td>0.394</td>
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<td>Cote', S. &amp; Miners, C. T. H. (2006)</td>
<td>Journal Article</td>
<td>175</td>
<td>0.190</td>
<td>0.043</td>
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<tr>
<td>Curry, S. M. (2004)</td>
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<td>60</td>
<td>0.471</td>
<td>0.247</td>
<td>0.647</td>
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<td>D'Alessio, F. A. (2006)</td>
<td>Dissertation</td>
<td>375</td>
<td>0.160</td>
<td>0.060</td>
<td>0.257</td>
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<tr>
<td>Danehy, L. S. (2005)</td>
<td>Dissertation</td>
<td>39</td>
<td>0.673</td>
<td>0.328</td>
<td>0.860</td>
</tr>
<tr>
<td>Dulewicz, C., Young, M. &amp; Dulewicz, V. (2005)</td>
<td>Journal Article</td>
<td>103</td>
<td>0.330</td>
<td>0.146</td>
<td>0.492</td>
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<tr>
<td>Evelyn, J. C. (2001)</td>
<td>Thesis</td>
<td>76</td>
<td>0.900</td>
<td>0.846</td>
<td>0.936</td>
</tr>
<tr>
<td>Fall, M. J. (2004)</td>
<td>Dissertation</td>
<td>330</td>
<td>0.840</td>
<td>0.805</td>
<td>0.869</td>
</tr>
<tr>
<td>Gardner, L. &amp; Stough, C. (2002)</td>
<td>Journal Article</td>
<td>110</td>
<td>0.595</td>
<td>0.459</td>
<td>0.704</td>
</tr>
<tr>
<td>Hanley, J. S. (2004)</td>
<td>Dissertation</td>
<td>37</td>
<td>0.552</td>
<td>0.277</td>
<td>0.743</td>
</tr>
<tr>
<td>Hartsfield, M. (2003)</td>
<td>Dissertation</td>
<td>124</td>
<td>0.560</td>
<td>0.426</td>
<td>0.670</td>
</tr>
<tr>
<td>Hayward, B. A. (2005)</td>
<td>Thesis</td>
<td>377</td>
<td>0.670</td>
<td>0.611</td>
<td>0.722</td>
</tr>
<tr>
<td>Heiken, S. E. (2007)</td>
<td>Dissertation</td>
<td>62</td>
<td>0.505</td>
<td>0.292</td>
<td>0.670</td>
</tr>
<tr>
<td>Higgs, M. (2002)</td>
<td>Journal Article</td>
<td>70</td>
<td>0.377</td>
<td>0.156</td>
<td>0.562</td>
</tr>
<tr>
<td>Kerr, R., Garvin, J., Heaton, N. &amp; Boyle, E. (2005)</td>
<td>Journal Article</td>
<td>1197</td>
<td>0.390</td>
<td>0.341</td>
<td>0.437</td>
</tr>
<tr>
<td>Lee, S. &amp; Olszewski-Kubilias, P. (2006)</td>
<td>Journal Article</td>
<td>234</td>
<td>0.000</td>
<td>-0.128</td>
<td>0.128</td>
</tr>
<tr>
<td>Macik-Frey, M. (2007)</td>
<td>Dissertation</td>
<td>112</td>
<td>0.241</td>
<td>0.058</td>
<td>0.409</td>
</tr>
</tbody>
</table>
To examine for possible publication bias, several methods were employed by the researchers. A funnel plot of the standard error on the vertical axis and the converted Fisher’s Z effect size on the horizontal axis was computed and examined. The plot in Figure 1 revealed a largely symmetrical distribution around the mean effect size with no visual indications of extreme outliers, suggesting that the probability of publication bias is low.
Further analysis for publication bias incorporated the calculation of a fail-safe N. The fail-safe N estimates the number of unpublished studies needed to nullify the positive effect found between emotional intelligence and leadership effectiveness (Lipsey & Wilson, 2001). This meta-analysis incorporates data from 48 studies and using the Comprehensive Meta-Analysis Software (Borenstein, Hedges, Higgins, & Rothstein, 2005), the fail-safe N is 1,275. This means that the researcher would need to locate and include 1,275 null studies in order for the combined 2-tailed p-value to exceed 0.05. In other words, there would need to be 235 missing studies that show a negative or non-significant effect for every observed study for the effect to be nullified. The fail-safe N test supports the other data that publication bias was likely not an issue since 60% of the studies included were unpublished sources.

Discussion

The results of this study suggest that emotional intelligence may now need to be considered as a component of leadership effectiveness and as such, changes need to be considered in the preparation for and practice of educational leadership. Developing skills associated with emotional intelligence, no longer a “soft skill”, and implementing a leadership style in practice that is reflective of emotional intelligence may support
greater levels of effectiveness. Given the demanding nature of educational leadership in the current climate of accountability and standards, continued calls for reform, strenuous recruitment and retention efforts for highly qualified staff, and ever changing landscape of reform and demographics, educational leaders may be hard pressed to ignore this finding.

Regarding the preparation of future educational leaders, Educational Leadership Preparation Programs might want to consider incorporating the role of emotions and emotional intelligence in their course design and training experiences. Ashkanasy and Dasborough (2003) support the view that emotions are critical in understanding organizations and in the teaching of leadership. Skillful handling of situations and people, reflective of leaders aware of the importance of emotional intelligence should be given the same attention and importance as the more traditional leadership tasks of budget, finance, and operational skills. Another likely outcome of this finding is the incorporation of a more formal evaluation of emotional intelligence in preservice and current educational leaders.

Several directions for future research can be offered from the current study. Given the availability of several models of emotional intelligence in the literature, an examination of the effectiveness of specific models and their impact on leadership effectiveness is warranted. For example, do the specific and unique components of the various models of emotional intelligence offer differing levels of impact on leadership effectiveness? Also, given that this study focused exclusively on correlational studies of emotional intelligence and leadership effectiveness, further meta-analytic research that examined these outcomes among studies incorporating different methodological procedures is warranted.

References

References marked with an asterisk indicate studies included in the meta-analysis.


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