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Anthony J. Onwuegbuzie and John R. Slate, Editors
Editorial: Citation Errors Revisited: The Case for Educational Researcher

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In a previous editorial, Onwuegbuzie, Frels, and Slate (2010) examined the characteristics and prevalence of citation errors, which occurs when authors fail “to make certain that each source referenced appears in both places [text and reference list] and that the text citation and reference list entry are identical in spelling of author names and year” (American Psychological Association [APA], 2010, p. 174). By conducting a mixed analysis (i.e., involving the combining of quantitative analyses and qualitative analyses) of 150 manuscripts submitted to Research in the Schools over a 7-year period, which revealed that citation errors were committed by 91.8% of the authors. These authors concluded that citation errors not only represented the most pervasive APA error, but citation errors also predicted whether a manuscript was accepted for publication. However, these authors questioned whether the same citation error rates would be observed among manuscripts submitted to Tier I journals. Consequently, in the present editorial, we replicate and extend their work by using mixed analysis techniques to examine the citation error rate of 88 manuscripts submitted to the highest ranked educational journal, Educational Researcher, over a 3-year period. Disturbingly, 88.6% of the manuscripts contained one or more citation errors. Further, the mean number of citation errors per manuscript was 7.83 (SD = 8.59), with the number of citation errors being as high as 42. Findings also revealed that for every 4 references included, on average, 1 of them represented a citation error. A multiple regression analysis revealed that every additional author of a manuscript was associated with an increase of 3.30 citation errors, on average. Further, every additional 9 references tended to be associated with an increase of 1.00 citation error. Consequently, we provide a checklist for reducing citation errors, as well as a practice exercise. We hope that the tools and strategies we provide will help authors to prevent citation errors in the future.

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Based on these and other findings, Onwuegbuzie, Frels, et al. (2010) concluded that citation errors represent a widespread problem that is committed by an unacceptably high proportion of RITS authors and that is an important predictor of the quality of a manuscript. As posed by Onwuegbuzie, Frels, et al. (2010), the question to be asked at this stage is: Does the high citation error rate associated with RITS authors represent an outlier? That is, is this high citation error rate more reflective of the amount of influence that RITS has on the educational community than it is reflective of a rampant problem among authors of empirical articles representing the field of education in general? Interestingly, with an editorial board of national and international scholars, with authors submitting manuscripts to RITS who are affiliated with institutions that represent more than one half of the states in the United States (Frels, Onwuegbuzie, & Slate, 2009), and with authors who have published articles in RITS being “affiliated with various school districts, the private sector, branches of the U.S. Government, and public and private universities in the United States, France, China, Guam, Israel, and Turkey” (Frels, Onwuegbuzie, & Slate, 2010, p. xiv), it is difficult to argue that RITS does not have national visibility. Moreover, the national visibility of RITS is increasing at a fast rate. For example, utilizing Harzing’s (2009) Publish or Perish software and Google Scholar, Frels et al. (2009) reported that RITS articles were cited 838 times, yielding 55.87 citations per year. In less than 2 years, the number of times that RITS articles have been cited has more than doubled (n = 1,998), yielding 83.25 citations per year. Further, the h-index, which provides an index of sustained impact (Hirsch, 2005), in this same short time span, incredibly has increased from 15 to 24.

Table 1 presents impact indices for all journals associated with regional or state associations that are affiliated with the American Educational Research Association (AERA). It can be seen from this table that RITS has, by far, better impact indices than do any of the six other journals that are associated with a state or regional educational research association.

Table 1

<table>
<thead>
<tr>
<th>Educational Association</th>
<th>Name of Journal</th>
<th>Number of Articles Published</th>
<th>Total Number of Citations</th>
<th>Mean Number of Citations per Year</th>
<th>h-index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mid-South Educational Research Association</td>
<td>Research in the Schools</td>
<td>219</td>
<td>1,998</td>
<td>83.25</td>
<td>24</td>
</tr>
<tr>
<td>Mid-Western Educational Research Association</td>
<td>Mid-Western Educational Researcher</td>
<td>144</td>
<td>245</td>
<td>8.45</td>
<td>8</td>
</tr>
<tr>
<td>Northern Rocky Mountain Educational Research Association</td>
<td>The Researcher</td>
<td>91</td>
<td>246</td>
<td>2.83</td>
<td>7</td>
</tr>
<tr>
<td>Louisiana Educational Research Association</td>
<td>Contemporary Issues in Educational Research</td>
<td>238</td>
<td>120</td>
<td>40.00</td>
<td>4</td>
</tr>
<tr>
<td>American Educational Research Association</td>
<td>Educational Researcher</td>
<td>3,670</td>
<td>139,377</td>
<td>2,965.47</td>
<td>177</td>
</tr>
</tbody>
</table>
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Despite this evidence of increasing impact, RITS, as yet, has not reached the highest echelons of journals. Thus, although some of the authors who publish articles in RITS are among the most prolific, it is likely that most of the prolific authors will submit manuscripts to journals with the highest impact factors. And, assuming that prolific authors tend to commit less citation errors, it is reasonable to hypothesize that journals with the highest impact factors would have manuscripts submitted to their journals that have significantly lower citation error rates. To this end, in this editorial, we replicate and extend the work of Onwuegbuzie, Frels, et al. (2010) by examining the citation error rate of manuscripts submitted to a Tier I educational journal.

Sources of Evidence

We conducted a mixed research study in which we examined 88 manuscripts submitted to Educational Researcher over a period of 3.5 years. The journal Educational Researcher was selected because, with an impact factor of 3.774, it has the highest ranking among 177 journals representing education and education research. The lead two authors of this editorial were part of the editor team (i.e., editor and associate editor) of Educational Researcher (2006-2010) that secured this extremely high impact factor. As such, they had access to every manuscript submitted to Educational Researcher during this period. The 88 manuscripts selected for study represented those manuscripts that were submitted for the first time to the Research News and Comment section of Educational Researcher—one of two sections at that time (with the other section being called Features that was co-edited by Patricia B. Elmore and Gregory Camilli). Further, these 88 manuscripts represented those manuscripts that had not been subjected to a desk reject during the internal review process (i.e., before the manuscript is sent out for external review, the manuscript was deemed inappropriate for Educational Researcher because it had a focus or content that was outside the scope of the journal [e.g., the topic did not pertain to an educational issue]; did not follow adequately the stipulated format for manuscripts [e.g., the manuscript resembled more of a traditional empirical report rather than an essay]; or the manuscript was written in a style that was far removed from APA [e.g., the manuscript followed Chicago Manual of style; Chicago Manual, 2003]). That is, each of the 88 manuscripts had met the criteria for being sent out for external review. These 88 manuscripts represented 52.07% of all manuscripts submitted to Educational Researcher over this period, which made our findings generalizable to the population of manuscripts submitted to Educational Researcher—at least over this period of time.

The two editors of the Research News and Comment section of Educational Researcher meticulously documented every citation error committed by these 88 sets of authors over the 3.5-year period. Alongside collecting citation error information, these editors collected an array of information associated with each of these manuscripts, including the following: the length of the manuscript (i.e., number of pages, number of words), the length of the reference list (i.e., total number of references), topic of the manuscript, and the number of authors per manuscript. In addition, the editors documented every APA error that appeared in these 88 manuscripts. Therefore, the data set developed by these editors is as extensive as that developed by Onwuegbuzie, Frels, et al.’s (2010) data set, the Educational Researcher data set is unique because only journal editors have the opportunity to collect these data.

Methodology

Using the philosophical lens of dialectic pluralism (i.e., representing a belief in combining multiple epistemological perspectives within the same study; Johnson, 2011), we utilized mixed analysis techniques—specifically, a sequential mixed analysis (Onwuegbuzie & Combs, 2010)—to investigate the characteristics and prevalence of citation errors in the 88 manuscripts submitted to Educational Researcher. Specifically, we used a four-stage sequential mixed analysis procedure. Each of these stages is described below.

Stage 1 Analysis

The first stage involved a classical content analysis (Berelson, 1952; see also Leech & Onwuegbuzie, 2007, 2008, 2011) of the 88 manuscripts to determine the frequency of each of the five citation error themes (i.e., Not in Reference List, Not Consistent with Reference List, Not in Text, Incomplete or Incorrect Citation, and Incomplete or Incorrect Reference) identified by Onwuegbuzie, Frels, et al. (2010), which led to an a priori analysis (Constas, 1992). From this analysis, the total number of citation errors also was computed. In addition, a citation error rate was computed for each manuscript by dividing the number of citation errors by the corresponding number of references appearing in the reference list.
Stage 2 Analysis

The second stage involved creating an “inter-respondent matrix” (Onwuegbuzie, 2003, p. 396) of the five citation error themes that were extracted in the first stage such that, for each manuscript, a “1” was assigned for an error theme if the manuscript contained one or more citation error themes of this type and a “0” was assigned if the manuscript did not contain any citation error themes of this type (Onwuegbuzie, 2003; Onwuegbuzie & Teddlie, 2003)—yielding a manuscript x citation error theme matrix that comprised a combination of 0s and 1s (Onwuegbuzie, 2003, p. 396). The creation of this inter-respondent matrix represented quantitizing the citation error themes (i.e., converting qualitative data into quantitative data that can be analyzed statistically; Miles & Huberman, 1994; Sandelowski, Voils, & Knafl, 2009; Tashakkori & Teddlie, 1998).

The inter-respondent matrix was used to conduct a principal component analysis to determine the underlying structure of the citation error themes. This inter-respondent matrix was transformed to a matrix of bivariate associations that represented tetrachoric correlation coefficients because the citation error themes had been quantitized to dichotomous data (i.e., “0” vs. “1”). Indeed, tetrachoric correlation coefficients are justified to use when examining the relationship between two (artificial) dichotomous variables (cf. Onwuegbuzie et al., 2007). Thus, the matrix of tetrachoric correlation coefficients served as the basis of the principal component analysis. Specifically, an orthogonal (i.e., varimax) rotation was employed, combining use of the eigenvalue-greater-than-one rule (i.e., K1; Kaiser, 1958), the scree test (i.e., a plot of eigenvalues against the factors in descending order; Cattell, 1966; Kieffer, 1999; Zwick & Velicer, 1986), and a parallel analysis (involving extracting eigenvalues from random data sets that parallel the actual data set with respect to the sample size and number of variables; Thompson, 2004; Zwick & Velicer, 1982, 1986) to determine an appropriate number of factors to retain. These factors represented meta-themes (Onwuegbuzie, 2003), whereby each meta-theme contained at least one citation error theme. The proportion of variance explained by each factor after rotation, also known as the trace, yielded an effect size index for each meta-theme (Onwuegbuzie, 2003). By establishing the hierarchical relationship among the citation error themes, the verification component of categorization was empirical, rational, and technical (Constas, 1992).

Stage 3 Analysis

The third stage involved conducting a latent class analysis to determine the smallest number of clusters (i.e., latent classes) that accounts for all the associations among the citation error themes. The assumption behind this latent class analysis was that a certain number of unique citation error themes existed, and that manuscripts could be classified into a small number of distinct clusters known as latent classes based on their profiles of citation errors, such that each manuscript belonged to only one cluster. This latent class analysis represented the qualitizing of the data (i.e., converting numeric data into [qualitative] narrative profiles; Tashakkori & Teddlie, 1998).

Stage 4 Analysis

The fourth and final stage involved using the inter-respondent matrix pertaining to the citation error codes to determine which of the selected manuscript variables (i.e., number of authors, number of pages, number of words) predicted the number of citation errors. In addition, the inter-respondent matrix was used to conduct a canonical correlation analysis to examine the multivariate relationship between the five citation error themes and the selected manuscript variables.

Findings

Stage 1 Findings

The classical content analysis revealed a total of 681 citation errors across the 88 manuscripts, yielding nearly eight citation errors per manuscript, on average ($M=7.83$, $SD=8.59$), with the number of citation errors ranging from 0 to 42. Surprisingly, this mean number of citation errors is higher than that reported for RITS by Onwuegbuzie, Frels, et al. (2010) ($M=6.26$, $SD=7.09$, $n=150$), although this difference was not statistically significant (Mann-Whitney’s $U=5830.00$, $p=.29$, Cohen’s [1988] $d=0.20$). The number of references in the 88 manuscripts ranged from 0 to 166 ($M=37.16$, $SD=31.36$), yielding citation error rates (i.e., number of citation errors / total number of references) that ranged from 0 to 425.00% (i.e., more than four times as many citation errors as references cited), with a mean citation error rate of 27.39% ($SD=58.80$%). This mean citation error rate indicated that for every four references included, on average, one of them represented some type of citation error.

Disturbingly, only 11.4% of the manuscripts did not contain any citation errors, implying that 88.6% of the manuscripts contained one or more citation errors. Further, more than one in four manuscripts (27.6%) contained at least 10 citation errors, 16.1% contained at least 15 citation errors, 10.3% contained...
20 or more citation errors, and 3.4% contained 30 or more citation errors. The proportion of manuscripts that contained one or more citation errors is only slightly smaller than is the 91.8% reported by Onwuegbuzie, Frels, et al. (2010) and, thus, this difference was not statistically significant ($\chi^2[1] = 0.75, p = .39$).

Table 2 presents the mean, standard deviation, and range regarding the number of citation errors pertaining to each of the five citation error themes for both the Educational Researcher manuscripts and Onwuegbuzie et al.’s (2010) RITS manuscripts, as well as the $t$ values and effect sizes comparing both sets of mean citation errors. It can be seen that whereas for the RITS manuscripts, authors committing citation errors associated with in-text citations not being presented in the reference list (i.e., Not in Reference List) and citation errors associated with citations in the text and the reference list not being consistent (i.e., Not Consistent with Reference List) were almost equally the most prevalent; for the Educational Researcher manuscripts, the citation errors associated with citations in the text and the reference list not being consistent was by far the most prevalent. Interestingly, after using the Bonferroni adjustment to control for the inflation of Type I error (e.g., Chandler, 1995; Ho, 2006; Manly, 2004; Vogt, 2005), four of the 10 pairwise comparisons (i.e., nonparametric dependent samples $t$ test) were statistically significant (i.e., $p < .005$). Specifically, Incomplete or Incorrect Citation errors were statistically significantly less prevalent than were all other error themes, namely, Incomplete or Incorrect Reference errors ($d = 0.63$), Not in Text errors ($d = 0.55$), Not in Reference List errors ($d = 0.73$), and Not Consistent with Reference List errors ($d = 1.07$)—representing moderate to large effect sizes. Comparing the Educational Researcher and RITS manuscripts revealed that the Educational Researcher manuscripts, on average, contained more citation errors pertaining to the following four error themes: Incomplete or Incorrect Citation errors were statistically significantly less prevalent than were all other error themes, namely, Not Consistent with Reference List errors, Not in Text errors, Incomplete or Incorrect Reference errors, and Not in Text errors. The RITS manuscripts, on average, only had a greater number of Not in Reference List citation errors. However, only the Incomplete or Incorrect Citation errors yielded a statistically significant difference with a small-to-moderate effect size ($d = 0.31$).

A series (i.e., $n = 10$) of nonparametric (i.e., Spearman) correlations, after applying the Bonferroni adjustment to control for the inflation of Type I error, revealed two statistically significant findings. Specifically, authors who committed Not Consistent with Reference List errors were statistically significantly more likely also to commit Not in Reference List errors ($r_{[86]} = .50, p < .001$) and Not in Text errors ($r_{[86]} = .48, p < .001$). Using Cohen’s (1988) criteria, both of these relationships were large.

**Stage 2 Findings**

As did Onwuegbuzie, Frels, et al. (2010), a principal component analysis was used to determine the number of factors underlying the five citation error themes. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was greater than .5 (i.e., KMO = .59) and Bartlett’s test of sphericity was statistically significant ($\chi^2[10] = 30.37, p < .001$), which justified the principal component analysis. The eigenvalue-greater-than-one rule (i.e., K1; Kaiser, 1958) indicated that two factors (i.e., meta-themes) be retained, as did the scree test. In addition, a parallel analysis was conducted as a validity check to the K1 and scree test (Zwick & Velicer, 1982, 1986). For the current data of 88 manuscripts and five variables (i.e., citation error themes), a series of (i.e., $n = 1,000$) random data matrices of size 88 x 5 was generated, and eigenvalues were computed for the correlation matrices for the original data and for each of the 1,000 random data sets. The eigenvalues derived from the actual data then were compared to the eigenvalues derived from the random data, in order to identify the number of components that account for more variance than do the components derived from random data. This parallel analysis also suggested retaining two factors.

This two-factor solution is presented in Table 3. Using a cutoff correlation of 0.3, recommended by Lambert and Durand (1975) as an acceptable lower bound for pattern/structure coefficients, Table 3 reveals that the following citation error themes had pattern/structure coefficients with large effect sizes on the first factor: Not in Reference List, Not Consistent with Reference List, and Not in Text; and the following citation error themes had pattern/structure coefficients with large effect sizes on the second factor: Incomplete or Incorrect Citation and Incomplete or Incorrect Reference. As was the case for Onwuegbuzie et al.’s (2010) study, the first meta-theme (i.e., Factor 1) was labeled Missing or Inconsistent Citations/References, and the second meta-theme (i.e., Factor 2) was termed Erroneous Citations/References.
### Table 2

**Stage 1 Findings: Themes, Frequencies, Formulated Meanings, and Selected Examples of Citation Errors**

<table>
<thead>
<tr>
<th>Citation Error Theme</th>
<th>Formulated Meaning</th>
<th>Educational Researcher (Present Study) ((n = 88))</th>
<th>Research in the Schools (Onwuegbuzie, Frels, &amp; Slate, 2010) ((n = 150))</th>
<th>Mann-Whitney (U)</th>
<th>Cohen’s (d) Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not in Reference List</td>
<td>Work that is cited in text but does not appear in the reference list</td>
<td>1.93 (3.06, 0-17)</td>
<td>2.06 (4.04, 0-30)</td>
<td>6264.00</td>
<td>0.04</td>
</tr>
<tr>
<td>Not Consistent with Reference List</td>
<td>Work that appears in the text that is not consistent with the corresponding work that is presented in the reference list</td>
<td>2.16 (2.32, 0-9)</td>
<td>2.05 (1.99, 0-11)</td>
<td>6138.50</td>
<td>0.05</td>
</tr>
<tr>
<td>Not in Text</td>
<td>Work that is cited in the reference list but that does not appear in the text</td>
<td>1.64 (3.34, 0-22)</td>
<td>1.49 (2.79, 0-18)</td>
<td>6242.00</td>
<td>0.05</td>
</tr>
<tr>
<td>Incomplete or Incorrect Citation</td>
<td>Work that appears in the text that is incomplete or inaccurate</td>
<td>0.31 (0.74, 0-3)</td>
<td>0.19 (0.85, 0-9)</td>
<td>5739.50</td>
<td>0.15</td>
</tr>
<tr>
<td>Incomplete or Incorrect Reference</td>
<td>Work that appears in the reference list that is incomplete or inaccurate</td>
<td>1.38 (2.27, 0-39)</td>
<td>0.72 (2.08, 0-17)</td>
<td>5084.50*</td>
<td>0.31</td>
</tr>
</tbody>
</table>

*Statistically significant at the Bonferroni-adjusted alpha level of .05 (i.e., .05/5).

### Table 3

**Stage 2 Findings: Summary of Themes and Factor Pattern/Structure Coefficients from Principal Component Analysis (Varimax): Two-Factor Solution**

<table>
<thead>
<tr>
<th>Theme</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Communality Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not in Reference List</td>
<td>.58</td>
<td>.29</td>
<td>.42</td>
</tr>
<tr>
<td>Not in Text</td>
<td>.68</td>
<td>-.05</td>
<td>.46</td>
</tr>
<tr>
<td>Not Consistent with Reference List</td>
<td>.83</td>
<td>.02</td>
<td>.69</td>
</tr>
<tr>
<td>Incomplete or Incorrect Citation</td>
<td>-.16</td>
<td>.84</td>
<td>.73</td>
</tr>
<tr>
<td>Incomplete or Incorrect Reference</td>
<td>.33</td>
<td>.64</td>
<td>.52</td>
</tr>
<tr>
<td>Trace</td>
<td>1.61</td>
<td>1.20</td>
<td>2.81</td>
</tr>
<tr>
<td>% variance explained</td>
<td>32.26</td>
<td>23.99</td>
<td>56.26</td>
</tr>
</tbody>
</table>

1Coefficients in bold represent pattern/structure coefficients with the largest effect size across the two themes using a cut-off value of 0.3 recommended by Lambert and Durand (1975).
The trace (i.e., the proportion of variance explained, or eigenvalue, after rotation; Hetzel, 1996) revealed that the Missing or Inconsistent Citations/References meta-theme (i.e., Factor 1) explained 32.26% of the total variance, and the Erroneous Citations/References meta-theme (i.e., Factor 2) accounted for 23.99% of the variance. These two meta-themes combined explained 56.26% of the total variance, yielding a large effect size (Henson, Capraro, & Capraro, 2004; Henson & Roberts, 2006). The corresponding total variance explained that was reported by Onwuegbuzie, Frels, et al. (2010) was similar, at 51.99%.

The manifest effect size (i.e., actual error rate per meta-theme) associated with the two meta-themes was as follows: Missing or Inconsistent Citations/References (83.7%) and Erroneous Citations/References (51.2%). Figure 1 displays the thematic structure (i.e., relationships among the citation error themes and the citation error meta-themes), including the manifest effect sizes and latent effect sizes. This figure represents what Onwuegbuzie and Dickinson (2008) referred to as a crossover visual representation, which involves integrating both quantitative and qualitative findings within the same display.

### Stage 3 Findings

The latent class analysis on the five (dichotomized) citation error themes indicated that the optimal number of clusters was two ($L^2 = 20.97, df = 20, p = .40, Bootstrap p = .50$). Figure 2 displays these two distinct groups of manuscripts. This figure shows that Cluster 1 (comprising 69.0% of manuscripts) is relatively high with respect to four of the citation error themes (i.e., Not in Reference List errors, Not Consistent with Reference List errors, Not in Text errors). In contrast, Cluster 2 (comprising 31.0% of manuscripts) is relatively low on all five citation error themes. As can be seen from Figure 2, Not in Reference List errors (Wald = 6.57, $p = .001$, $R^2 = 16.77$%), Not Consistent with Reference List errors (Wald = 5.81, $p = .016$, $R^2 = 61.49$%), and Not in Text errors (Wald = 7.37, $p = .007$, $R^2 = 16.35$%) statistically significantly discriminated the two clusters, whereas Incomplete or Incorrect Citation errors (Wald = 0.03, $p = .87$, $R^2 = 0.05$%) and Incomplete or Incorrect Reference errors (Wald = 2.61, $p = .11$, $R^2 = 8.19$%) did not. Examining the $R^2$ values indicates that Not Consistent with Reference List errors had the most variance explained by the two-cluster model.

![Stage 2 Findings: Thematic structure pertaining to citation errors, with effect sizes pertaining to Onwuegbuzie et al.’s (2010) study in parentheses.](image_url)
Stage 4 Findings

Correlation analysis. A series (i.e., \( n = 4 \)) of nonparametric (i.e., Spearman) correlations, after applying the Bonferroni adjustment to control for the inflation of Type I error, revealed that the number of citation errors was statistically significantly related to the number of references in the reference list (\( r_{s}[86] = .55, p < .001 \)), the number of manuscript pages (\( r_{s}[86] = .38, p < .001 \)), the number of manuscript words (\( r_{s}[86] = .49, p < .001 \)), and the number of authors (\( r_{s}[86] = .43, p < .001 \)). Using Cohen’s (1988) criteria, all of these relationships were in the moderate-to-large or large range. Although the first three relationships were not surprising, the fourth relationship was extremely surprising because it indicates that as the number of authors of a manuscript increases, so do the number of citation errors. This finding, which is extremely disturbing, is consistent with Onwuegbuzie, Frels, et al. (2010), who documented a relationship between these two variables.

Multiple regression analysis. An all possible subsets (APS) multiple linear regression (Onwuegbuzie & Daniel, 2003; Thompson 1995) was used to identify an optimal combination of independent variables (i.e., number of references in the reference list, number of manuscript pages, number of manuscript words, number of authors) that predicted the number of citation errors. Using this analytical technique, all possible models involving some or all of the independent variables were examined. This method of analysis, which has been advocated by many statisticians (e.g., Onwuegbuzie & Daniel, 2003; Thompson 1995), involves conducting separate regression analyses for the one possible set of four independent variables, all four possible trios of independent variables, all six possible pairs of independent variables, and all four
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independent variables singly—yielding the fitting of 15 multiple regression models. These 15 models then were compared to identify the best subset of independent variables according to the criteria of (a) the maximum proportion of variance explained ($R^2$) and (b) Mallow’s $C_p$ (Myers, 1986; Sen & Srivastava, 1990). The APS multiple regression analysis revealed that a model containing two variables provided the best fit to these data. In fact, the four-variable model only increased the proportion of variance explained by 3.2%. In addition, Mallow’s $C_p$ was closer in value to the number of regressor variables (Myers, 1986; Sen & Srivastava, 1990) with the two-variable solution, than with any other variable solution.

The selected model indicated that the following two variables contributed statistically significantly ($F[2, 86] = 14.31, p < .001$) to the prediction of the number of citation errors: the number of authors and the number of references in the reference list. These two variables combined to explain 31.6% of the variation in the number of citation errors (Adjusted $R^2 = 29.4%$). Using Cohen’s (1988) criteria for assessing the predictive power of a set of independent variables in a multiple regression model, the proportion of variance explained indicates a large effect size, because it exceeded 26%.

With respect to the assumptions for the selected two-variable multiple linear regression model, the Durbin-Watson coefficient of 2.08 was sufficiently close to 2 to suggest that for any two observations, the residual terms were uncorrelated (i.e., lack of autocorrelation), which was a desirable outcome. In addition, an examination of the standardized residuals pertaining to each of the participants revealed that only one manuscript (i.e., manuscript #52) had a standardized residual that exceeded 2.00 (i.e., 4.44). This manuscript, which was written by two authors and contained 44 references, yielded 41 citation errors—the second highest number of citation errors—likely explaining why the number of citation errors was difficult for the model to predict. Nevertheless, because this number represented only 1.14% (i.e., 1/88) of the total sample of manuscripts, the number of manuscripts with large standardized residuals was less than the 5% that might have been expected by chance, which suggested little cause for concern.

An examination of the tolerance statistics, the variance inflation factors, and the condition indices of the selected regression model indicated strongly that no multicollinearity was present. In particular, both variance inflation factors (VIFs), which represent the extent that the variance of an individual regression coefficient has been inflated by the presence of collinearity, were much less than 10, suggesting little evidence of multicollinearity (Myers, 1986). In fact, both variance inflation factors were very close to 1.00 (i.e., both VIFs = 1.03), which indicated no relationship between the two independent variables. Condition indices, which represent the ratio of the largest to the smallest eigenvalues, also provided information about the strength of linear dependency between the independent variables. Both condition indices (3.15 for the number of authors and 4.65 for the number of references) were much less than 1,000 (Myers, 1986), again suggesting that no multicollinearity was present. Further, both tolerance statistics were greater than .2 (.97), which also suggested a lack of multicollinearity (Field, 2009).

The following additional influence diagnostics were examined: (a) the overall influence of a case on the model (i.e., Cook’s distance); (b) the influence of the observed value of the dependent variable over the predicted values (i.e., Leverage); (c) the number of estimated standard errors (for each regression coefficient) that the coefficient changes if the $ith$ observation was set aside (i.e., $DFBeta$, Standardized $DFBeta$); (d) the number of estimated standard errors that the predicted value changes if the $ith$ point is removed from the data set (i.e., $DFBeta$, Standardized $DFFit$); and (e) the influence of the observed value over the variance of the regression parameters (i.e., covariance ratio). Using criteria recommended in the literature (e.g., Field, 2009; Myers, 1986), the 52nd manuscript (of the set of 88 manuscripts), which had the only absolute standardized residual that exceeded 2, generated the following influence statistics: (a) Cook’s distance = .012 < 1, suggesting that it did not have undue influence on the model; (b) Leverage = .0025 < $(2[p + 1])/(n)^2 = .068$, which suggested that it did not have a large influence over the regression coefficients; (c) Standardized $DFBeta$ for the number of authors = 0.24 and Standardized $DFBeta$ for the number of references = 0.075, both of which are < -2, which suggested that this manuscript did not have undue influence on the model parameters; and (d) Standardized $DFFit$ = 0.71 < -2, which suggested that this manuscript did not have an undue influence on the predicted value. Only the covariance ratio value (i.e., 0.34) suggested a cause for concern because it was less than $1 + (3[p + 1]))/(n) = 0.90$, thereby suggesting that deleting the 52nd manuscript from the analysis might have improved the precision of the model. However, because the other indices did not exceed the cutpoint, this manuscript was retained.

The partial and semi-partial correlation coefficients indicated that the number of authors (19.0% unique variance explained) was a better predictor of the number of citation errors than was the number of references (12.6% unique variance explained). An examination of the structure coefficients, using a cutoff correlation of 0.3
recommended by Lambert and Durand (1975) as an acceptable minimum coefficient, suggested that both independent variables made important contributions to the model. Thus, in summary, the selected final regression model suggested that the manuscripts with the most citation errors tended to have the highest number of authors and the highest number of references. The regression equation was as follows:

\[
\text{Number of Citation Errors} = -1.38 + 3.30 \times \text{Number of Authors} + 0.11 \times \text{Number of References}
\]

This equation indicated that among manuscripts submitted to Educational Researcher, every additional author of a manuscript was associated with an increase of 3.30 citation errors, on average. Further, every additional nine references tended to be associated with an increase of 1.00 citation error.

**Canonical correlation analysis.** A canonical correlation analysis was conducted to examine the multivariate relationship between the citation error themes and selected demographic variables (i.e., number of references in the reference list, number of manuscript pages, number of manuscript words, number of authors). Because five citation error themes were correlated with four manuscript variables, four canonical functions were generated.

The canonical correlation analysis revealed that the four canonical correlations combined were statistically significant \((p < .01; R_{c1} = .57; \text{Wilk's Lambda} = .52)\). However, when the first canonical root was excluded, the remaining three roots were not statistically significant \((p = .23; R_{c2} = .41; \text{Wilk's Lambda} = .77)\). Similarly, when the first two canonical roots were excluded, the remaining two roots were not statistically significant \((p = .60; R_{c3} = .22; \text{Wilk's Lambda} = .93)\), and when the first three canonical roots were excluded, the remaining root was not statistically significant \((p = .45; R_{c4} = .16; \text{Wilk's Lambda} = .97)\). Together, these results suggested that the first canonical function was statistically significant and practically significant \((\text{Canonical } R_{p1}^2 = .33)\) (Cohen, 1988), but the remaining roots were not statistically significant. Thus, only the first canonical function was interpreted.

Data (i.e., standardized function coefficients and structure coefficients) pertaining to the first canonical root are presented in Table 4. Again, using a cutoff correlation of 0.3 (Lambert & Durand, 1975), the standardized canonical function coefficients revealed that the following two citation error themes made important contributions: Not in Reference List and Not in Text. With Not in Reference List and Not in Text making the largest contribution. With respect to the manuscript variable set, number of authors, number of manuscript pages, and number of manuscript words made noteworthy contributions, with number of manuscript words making the most noteworthy contribution. The structure coefficients revealed that three citation error variables made noteworthy contributions: Not in Reference List, Not Consistent with Reference List, and Not in Text. Again, Not in Text made the largest contribution. The square of the structure coefficient indicated that Not in Text explained 60.8% of the variance. With regard to the manuscript variable cluster, all four variables made noteworthy contributions, with the number of manuscript words making the greatest contribution for the second time, explaining 67.2% of the variance. Comparing the standardized and structure coefficients suggested multicollinearity with Not Consistent With Reference List because the structured coefficient associated with this variable was large, whereas the corresponding standardized coefficient was relatively small (Onwuegbuzie & Daniel, 2003).

Multicollinearity also was suggested with number of references for the same reason. Thus, the multivariate relationship between citation error themes and the manuscript variables was mainly characterized by the relationship between citation errors associated with Not in Reference List and Not in Text on the one side, and number of authors, number of manuscript pages, and number of manuscript words on the other side. Interestingly, in Onwuegbuzie, Frels, et al.’s (2010) study, the number of authors and the length of manuscript similarly were related to the five citation error themes.

Unfortunately, because the Educational Researcher editors accepted only one of these 88 manuscripts the first time, it was not possible to examine any relationships between the number of citation errors and the decision made by the editors regarding the manuscript’s suitability for publication. However, the fact that every manuscript with a high number of citation errors was rejected for publication is unlikely to be a coincidence.

**Discussion of Findings**

Our current editorial provides even more compelling evidence that the citation error represents, by far, the most prevalent APA error. Moreover, the present findings indicate that not only do citation errors permeate manuscripts that are submitted to RITS (91.8% prevalence rate) but they similarly pervade manuscripts that are submitted to the foremost journal in education, namely, Educational Researcher (88.6% prevalence rate). From our experience as editors of Educational Researcher, we can verify that a high proportion of authors who submit manuscripts to Educational Researcher are among the most prolific of authors. Thus, it can be concluded that citation errors are not only committed...
by beginning authors, but also they are being committed by prolific authors. Indeed, the characteristics of citation errors for both the Educational Researcher manuscripts and RITS manuscripts were very similar, including the distributions of the five citation error themes, the thematic structure pertaining to the citation errors, the profiles of the manuscripts with respect to the citation error themes, and the relationship of the number of authors and the length of the manuscript to the citation error themes.

In our previous editorial on citation errors, we surmised that the 91.8% citation error rate for RITS authors likely represents a lower bound when one takes into account that these manuscripts were submitted before the writers of sixth edition of APA stipulated that authors include digital object identifiers (DOIs) whenever they are available (cf. section 6.31). According to the writers of the sixth edition of [APA] Publication Manual, DOI numbers represent unique numbers assigned by the publisher for electronic referencing of published journal articles and other documents. In a reference list, authors should place the DOI at the end of the reference. Thus, under the sixth edition of APA, failure to include available DOI numbers represents a citation error—specifically, an incomplete reference. (pp. xiii-xiv)

For this same reason, the citation error rate of 88.6% for Educational Researcher authors also likely represents a lower bound. And when we take into account the fact that the 88 manuscripts submitted to the Research News and Comment section of Educational Researcher over this 3-year period represented those manuscripts that were sent out for external review and that none of the 47.93% of manuscripts that were desk rejected were included in this sample of manuscripts, it is reasonable to conclude that this 88.6% citation error rate is even more of a lower bound.

It might be argued that the high citation error rate for Educational Researcher manuscripts stems, in part, from the fact that these manuscripts tend to be longer than that allowed for the majority of educational journals, and as we reported earlier, the number of manuscript pages was positively related to the number of citation errors (cf. Table 4). Yet, the number of pages of manuscripts submitted to Educational Researcher (M = 25.64, SD = 11.36; Range = 6 to 54) actually was statistically significantly smaller ($t(236) = -1.74, p = .04; d = 0.23$) than was the number of pages of manuscripts submitted to RITS (M = 27.96, SD = 9.04; Range = 9 to 48; cf. Frels et al., 2009). Thus, the length of the Educational Researcher manuscripts does not account for the high citation error rates. Similarly, it might be argued that the number of authors of Educational Researcher manuscripts would be higher than normal due to the fact that Educational Researcher has a lower acceptance rate (lower than 5% during this time period) than does virtually any other journal representing the field of education, and as we documented earlier, the number of authors was positively related to the number of citation errors (cf. Table 4). Yet again, this argument can be refuted because the number of authors per Educational Researcher manuscript ($M = 1.64, SD = 0.92; Range = 1 to 5$) actually was statistically significantly ($t(236) = -3.18, p < .001; d = 0.43$) smaller than was the number of authors per RITS manuscript ($M = 2.13, SD = 1.26; Range = 1 to 9$).

Conclusions

That the mean citation error rate appears to range from approximately 5.9 (Onwuegbuzie, Waytowich, & Jiao, 2006) to approximately 7.8 (the present study), alongside the present findings that both the number of authors and number of references are positively related to the number of citation errors, and previous findings that manuscripts that contain several citation errors are significantly more likely to be rejected (Onwuegbuzie et al., 2006, 2010), demonstrate the importance of developing strategies for drastically reducing these trends, and producing what Jiao, Onwuegbuzie, and Waytowich (2008) referred to as a “culture of error free citations” (p. 954). Onwuegbuzie, Frels, et al. (2010) provided a number of recommendations for creating this culture for (a) authors; (b) college-level instructors, mentors, advisors, and thesis/dissertation committee members and chairs or supervisors; (c) copyeditors typesetters, production editors, publishers; and (d) writers of future editions of the Publication Manual. We refer readers to these recommendations. However, we will conclude our editorial by focusing on attempting to help authors avoid making citation errors. Recommendations for authors provided by Onwuegbuzie, Frels, et al. (2010) include printing out the whole document and comparing every in-text citation (i.e., line-by-line) with the corresponding entry in the reference list; proof-reading the reference lists several times for incomplete or inaccurate references; conducting a secondary electronic check for citation errors using the search function of word processing software programs and the spell check function; using a reference management software package (e.g., EndNote, RefMan, and ProCite); and ensuring that all authors representing articles that involve multiple authors to check the manuscript meticulously for citation errors.

Another useful recommendation is to use Table 2 as a starting point by focusing on these most common types of errors, namely, works that are cited in text
but that do not appear in the reference list, works that appear in the text that are not consistent with the corresponding works that are presented in the reference list, works that are cited in the reference list but that do not appear in the text. In Appendix A, we provide a checklist for reducing citation errors. In Appendix B, we provide an excerpt that has been modified from Waytowich, Onwuegbuzie, and Elbedour’s (2011) article in such a way that it contains numerous citation errors. These citation errors represent all five types of citation errors presented in Table 2. Appendix C provides a corrected version of the excerpt that incorporates comments for addressing the various citation errors.

In closing, we reiterate the sentiments of Onwuegbuzie, Frels et al. (2010) that the authors of APA “should make clear how serious citation errors are, as well as their ethical implications” (p. xx). In the sixth edition of the Publication Manual (APA, 2010), Chapter 6 is dedicated to crediting sources, whereby it is stated that “a critical part of the writing process is helping readers place your contribution in context by citing the researchers who influenced you” (p. 169). Further, the authors of the Publication Manual (APA, 2010) dedicated a separate chapter to illustrate reference examples. In Chapter 1, authors open the section “Ethical and Legal Standards in Publishing” (p. 11) by citing the APA Ethics Code (APA, 2002), in that researchers and writers should “protect intellectual property rights” (p. 11). Finally, Section 8.07 of Chapter 8 (APA, 2010) presents a checklist for manuscript submission, which includes a section on references whereby authors are to check some of the following:

[a] are references cited both in text and in the reference list (6.11-6.21)? [b] do the text citations and reference list entries agree both in spelling and in date (6.11-6.21)? [c] are journal titles in the reference list spelled out fully (6.29)? [d] are the references (both in the parenthetical text citations and in the reference list) ordered alphabetically by the authors’ surnames (6.16, 6.25)? [e] are inclusive page numbers for all articles or chapters in books provided in the reference list (7.01, 7.02)? (p. 242)

In addition, in the Code of Ethics (AERA, 2011), the authors stipulate that “educational researchers adhere to the highest possible standards,” and in their publications, “[they] explicitly identify, credit, and reference the author(s) when they take data or material verbatim from another person’s work” (p. 147). In fact, when considering the meticulous care with which scholars perform research (e.g., providing documentation, transparency, meticulous data analysis), it is quite surprising that in one of the most prestigious journals in educational research, namely Educational Researcher, citation errors were so high, especially when crediting sources appropriately are put forth in research ethical codes of prominent organizations: see APA:
http://www.apa.org/research/responsible/publication/index.aspx; the American Counseling Association:
http://www.counseling.org/resources/codeofethics/TP/home/cR2.aspx;
see AERA:
http://www.aera.net/Portals/38/docs/About_AERA/CodeOfEthics(1).pdf
As such, it is our hope that the findings of this editorial bring to the fore the professional and ethical obligation to become more detailed-oriented in the presentation of their works with respect to parenthetical references and reference lists. We hope that at least one of the tools and strategies presented in this editorial or the previous editorial helps students, researchers, and experienced scholars to prevent citation errors through the use of consistent and accurate reporting of sources.

References


Appendix A
Checklist for Reducing Citation Errors

The following checklist can be a useful tool for authors concerned about reducing citation errors in their work. To edit for citation errors, the author will need a copy of the paper, a pencil, and the Sixth Edition Publication Manual of the American Psychological Association (2010) which will be referred to as the APA Manual. The steps in the process are as follows:

1. **Print out paper.**
2. **Verify the match of each citation used.**
3. **Verify each direct quotation used.**
4. **Remove unused references from the list.**
5. **Locate missing references.**
6. **Resolve inconsistencies.**
7. **Edit for use of et al.**
8. **Check alphabetical order of references.**
9. **Edit references for format, punctuation, and capitalization.**

Step 1 is to print out a paper copy of the draft, including the reference list. Even though authors conduct most of the editing of drafts via a computer screen, having a printed copy of the paper often helps to locate errors that are not seen easily in the earlier stages of editing using a computer. Separate the paper from the references and proceed to Step 2. In the second step, the author will scan the manuscript, line-by-line, and locate every citation used in the text. Then, the author will mark the citation with a pencil in the text and in the reference list. During this cross-checking process, careful attention should be given to the spelling of the authors’ names and the dates each time they are used. For any citations that do not match, the author should make a note and continue with the process. At the end of this step, the paper will be marked up, and each entry in the reference list should be marked at least once. Step 2 is likely the most tedious step in the process; however, conducting this step for every citation is critical to locating errors. The third step involves a verification of direct quotations. Step 3 can be performed at the same time as Step 2. For every direct quotation used, “always provide the author, year, and specific page citation or paragraph number or nonpaginated material” (APA, 2010, p. 170).

In addition, if the direct quotation is “40 or more words, display it in a freestanding block of text and omit the quotation marks” (APA, 2010, p. 171). Additional information is provided in the APA Manual regarding omissions or insertions of material in direct quotes. At the conclusion of the first three steps, the author can proceed to revising the references. For Step 4, the list of references will be reviewed. Any reference that was not marked in Step 2 should be removed from the paper because the reference list should contain only those works cited in the paper. Similarly, in Step 5, the author will locate references that were cited in the paper but were not included in the reference list. Finally, in Step 6, the author will correct spelling errors of authors’ names and resolve inconsistencies in the dates cited.

One of the citation rules in APA addresses the appropriate use of **et al.** (see Table 6.1, APA, 2010, p. 177). We suggest addressing this convention near the conclusion of the editing process because revisions of the paper can change the order of citations used in the paper. For citations whereby three, four, or five individuals authored the work, the first citation in the text would include all authors; subsequent citations would have the convention **et al.**. If the author in Step 2 marked every reference each time it was used in the paper, he or she will be able to identify the references where **et al.** would be appropriate (i.e., in the references, search for group authors with multiple checkmarks). Next, using a “find” command on the computer, each citation can be located in the paper and can be corrected. For works that have six or more authors, the convention **et al.** is used each time (see APA Manual, 2010, p. 177). Finally, it is recommended that authors carefully check the punctuation of the **et al.** convention as errors appear to be prevalent with its usage. In a recent study, 44.5% of authors (n = 110) who submitted a manuscript to Research in the Schools misused the **et al.** convention at least once in their manuscripts (Onwuegbuzie, Combs, Slate, & Frels, 2010).

In Step 8, the author will attend to the alphabetical order of the reference list. Rules for alphabetizing can be found in the APA Manual in Section 6.25. Finally, in Step 9, each reference will be carefully read and checked for errors in punctuation and capitalization. In addition, the author can verify that journals and book titles are italicized. New to the APA Manual specific to the sixth edition is the provision of doi numbers; websites such as www.crossref.org can be used to verify doi numbers. During Step 9, the use of the APA Manual is essential, as experienced authors and editors refer to the APA Manual frequently and when in doubt. When authors edit citations and reference lists using this checklist, citation errors can be minimized and hopefully eliminated.
References


Violence and Attribution Error in Adolescent Male and Female Delinquents

In the field of social psychology, considerable interest has centered on the mediating role of the causal attributions and assumptions made by the victims and perpetrators of violence (Fondacaro & Heller, 1990; Shaver & Drown, 1986; Trachtenberg & Viken, 1994). However, few of these studies have focused on delinquent female adolescents; in fact, relatively little is known about female delinquents. Indeed, in general, we know very little about the psychology and cognitive/attributional processes of young women in regard to violence (Chesney-Lind & Sheldon, 1992), perhaps because the prevalence of this group in the criminal population has only recently been considered as serious problem.

Attribution Theory

Attribution theory is concerned with the cognitive processes that individuals use to justify the events that occur in their social and physical environments (Kelley, 1973). As described by Heider (1958), Jones and Harris (1967), Kelley (1973), and Weiner (1985), individuals operate in the social environment through action, and the process of assigning causes to their actions and experiences is called causal attribution. People set goals, make decisions, and plan activities based on their sociopsychological analysis and appraisal of their past actions, in a dynamic interplay both internally and in relationship with other individuals (Janoff-Bulman, 1979; Janoff-Bulman & Freize, 1983; Silver, Wortman, & Klos, 1982). These causal attributions determine how a person will interpret a given event, by identifying the location of its cause (i.e., internal or external to the individual), the stability of the cause over time (i.e., transient or lasting; Kelley, 1973), and the responsibility for the event (i.e., whether or not the cause is seen as under the individual’s control; Abramson, Seligman, & Teasdale, 1978; Wortman & Dintzer, 1978). The resulting appraisal is incorporated into the individual’s motivational dynamics. An appraisal of something as a good for action becomes a move to action, or motivation (Arnold, 1962). In this way, an individual’s subjective assessments may strengthen or weaken the person’s motivation to achieve a particular objective.

It is by making attributions that people justify their own behaviors and make sense of them. When recognized, these attributions also can predict future behaviors (Heider, 1958; Jones & Harris, 1967; Kelley, 1973; Weiner, 1985). According to Bulman and Wortman (1977), Fincham, Beach, and Baucom (1987), Grills and Ollendick (2002), Janoff-Bulman (1979), and other researchers, people are more likely to experience distress that contributes to depression when they attribute their behavioral outcome to personality traits or dispositional characteristics (characterological attributions). Greater mental health benefits are found in people who attribute their problems to some aspect of their own behaviors or to situational factors. An individual’s framework of attribution can be a window through which we can view the person’s emotional vulnerability self-image, and his/her approach to solving social and interpersonal problems (Jones & Nisbett, 1972; Lazarus & Launier, 1978).

The self-questioning involved in the attribution process is also accompanied by inhibitory responses that function quite apart from these appraisals and assumptions. It is the brain’s inhibitory response capability that allows people to tolerate, cope with, and master their impulses. As a result, these causal attributions are not necessarily rational or objective; they are influenced by the individual’s cognitive and sociocultural biases, which include the following: (a) cognitive heuristics, which represent problem-solving strategies that reduce the complexity of making probabilistic judgments (Kahneman, Slovic, & Tversky, 1982; Nisbett & Ross, 1980), and which, as noted by Tversky and Kahneman (1974, p. 1124), "are quite useful, but sometimes they lead to severe and systematic errors"; (b) the just world theory, which represents the underlying belief that life is fundamentally “fair” and might influence individuals to view victims as being responsible for their own circumstances (Lerner, 1970, p. 190); (c) the fundamental attribution error, wherein personal or dispositional factors are overemphasized and situational and environmental factors are underemphasized (Tetlock, 1985); (d) defensive attribution bias, wherein a person’s tendency to blame another person increases as the observer’s perceived similarity to the other person’s circumstances decreases (cf. Burger, 1981); and (3) stereotyping, which occurs as a direct result of the out-group homogeneity, wherein people tend to assign the cause of undesirable behavior by an out-group member to a personal deficiency that they attribute to all members of that group (cf. Fiske, 2000).
Taken together, these cognitive and motivational biases provide the support framework for the individual’s patterns of moral and social behavior. Although research on attribution theory in the context of violence and victimization has gained prominence recently, little attention has been paid to the role that attribution plays in placing adolescents at risk for perpetrating acts of violence—especially the role played by violence attribution error.

Because of gendered socialization processes, the differing social status of men and women, and the fact that victim blaming is more common in certain cultures, female juvenile delinquents may show different violence attribution errors than do male juvenile delinquents. Research on this topic is becoming increasingly urgent because the rates of female violent crime have risen dramatically in recent years. Chesney-Lind (2001) cites federal statistics that the rate of female violent crime has increased more than 100% since 1981: between 1989 and 1998 the arrest rate for female adolescents increased 50.3% (compared to 16.5% for males), and during the same period there was a 64.3% increase in arrests of females for serious violent offenses. According to a report by the U.S. Department of Justice, in 1999, there were 2.1 million female violent offenders, representing 14% of all violent offenders (U.S. Department of Justice, 1999).

There are limited data on attribution errors among female delinquents; however, several studies exist in the area of attribution errors among delinquents. For example, Daley and Onwuegbuzie (1995) documented that 80% of male juvenile delinquents make inaccurate causal attributions when explaining the violent actions of others. In a later study, Daley and Onwuegbuzie (2004) coined the term “violence attribution error” (p. 551). A specific form of attribution error, this refers to “errors that occur when an offender does not blame the perpetrator of a violent act (e.g., rape) but instead blames either the victim or the circumstance” (p. 551).

In the only study, to date, investigation the violence attribution errors of females, Daley and Onwuegbuzie (1999) compared male (n = 73) and female (n = 80) high schools students with respect to violence attribution errors. These researchers found that females tended to make significantly fewer violence attribution errors (i.e., “errors that occur when an offender does not blame the perpetrator of a violent act (e.g., rape) but instead blames either the victim or the circumstance”; Daley & Onwuegbuzie, 2004, p. 551) than did their male counterparts. The effect size (d = 0.63) associated with this difference was moderate-to-large. More recently, using a mixed method analysis (Johnson & Onwuegbuzie, 2004), Daley and Onwuegbuzie (2004) reported that the male juvenile offenders, who were incarcerated at a correctional facility in a large southeastern U.S. state, committed violence attribution errors approximately 53% of the time. Although Daley and Onwuegbuzie (2002/2003, 2004) provided evidence that violence attribution errors play an important role in predicting at-risk behaviors, their studies only involved male delinquents. Yet, it is likely that violence attribution errors also place females at-risk for delinquency. However, this possible link has yet to be investigated. This was a subject of the current investigation.

In addition to gender, examining race as a static criminogenic factor (i.e., a factor identified by research as a predictor of crime or criminality) also is poignant due to the over-representation of minority youth currently involved in the juvenile justice system (Florida Department of Juvenile Justice, 2006). Minority youth disproportionately experience a greater degree of violent victimization and perpetration, with homicides accounting for the leading cause of death among African-American males and females between the ages of 15 and 24 years (Commission for the Prevention of Youth Violence, 2000). In 1997, minorities represented 24% of the juvenile population, yet were 67% of the juveniles incarcerated in detention facilities (Commission for Prevention of Youth Violence, 2000). Furthermore, in 2003, African-American youth were more at risk than were White youth, and three times as likely as were youth of other races to be victims of serious violent crime (Federal Interagency Forum on Child and Family Statistics [FIFCFS], 2005). Findings from other studies indicate that gender and race differ across groups in their rates of violence, and that gender and race groups are differentially exposed to protective and risk factors that contribute or ameliorate the risk of violence exposure (Herrenkohl, Hill, Chung, & Catalano, 2004).

With these variables in mind, a second central purpose was to identify predictors (i.e., peer victimization, self-esteem, and demographic variables) of violence attribution errors. Although numerous studies have been conducted on key indicators of risk that identify a youth to be on a potential path to delinquency such as poverty, poor self-concept, association with delinquent peers, drug use, physical and sexual abuse, poor parenting, truancy, and poor educational performance (Archwamety & Katsyannis, 2000; Ball & Connolly, 2000; Carr & Vandiver, 2001; Chesney-Lind & Sheldon, 1998; Goff & Goddard, 1999; Matza, 1964; Stoiber, 1998; Tanner, Davies, & O’Grady, 1999; Waytowich & Onwuegbuzie, 2007; Welsh, Stokes, & Greene, 2000), scant research has been paid attention to predictors of violence attribution errors. Because violence attribution errors have been found to predict acts of violence (Daley & Onwuegbuzie, 2002/2003), it is expected that identifying antecedents of violence attribution errors likely would increase our understanding of why adolescents engage in delinquent behaviors in general and acts of violence in particular. The present study was unique for at least two reasons. First, the current investigation was the first to investigate violence attribution errors committed by female juvenile delinquents. In addition, it
represented the only study in which male and female juvenile delinquents have been compared with respect to these attribution errors.

The relevance of researching female delinquency is especially pertinent to the state of Florida. Inasmuch as the representation of females in Florida’s Juvenile Justice system is growing, the 2001-2002 statistics were somewhat more encouraging, with females accounting for less than 30% of all juvenile delinquency referrals. However, between 1998-1999 and 2002-2003 female residential placements increased 25.2%, resulting in a greater number of girls placed in commitment programs for violent offenders (Florida Department of Juvenile Justice, 2008).
References


Appendix C
A Modified Excerpt from Waytowich, Onwuebuzie, and Elbedour (2011) with Numerous Citation Errors Corrected with Comments

Violence and Attribution Error in Adolescent Male and Female Delinquents

Vicki L. Waytowich
Daniel Memorial, Inc
Anthony J. Onwuegbuzie
Sam Houston State University
Salman Elbedour
Howard University

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Abstract

The purpose of this study was to assess the prevalence of violence attribution errors among female adolescent delinquents in the United States. Also of interest was to compare female delinquents’ violence attribution error rate to that of their male counterparts who were participating in the same delinquency intervention programs. A third purpose was to identify predictors (i.e., attitudes toward violence, peer victimization, self-esteem, demographic variables) of violence attribution errors. Participants were 181 juvenile delinquents (28.2% female) who participated in two delinquency intervention programs located in Florida during the 2005-2006 year. Findings revealed no statistically significant difference in violence attribution error rate between male (52.7%) and female (46.5%) juvenile delinquents. A multiple regression analysis identified six variables that predicted the violence attribution error rate. The implications of the findings are discussed.
Violence and Attribution Error in Adolescent Male and Female Delinquents

In the field of social psychology, considerable interest has centered on the mediating role of the causal attributions and assumptions made by the victims and perpetrators of violence (Fondacaro & Heller, 1980; Shaver & Drown, 1986; Trachtenberg & Viken, 1994). However, few of these studies have focused on delinquent female adolescents; in fact, relatively little is known about female delinquents. Indeed, in general, we know very little about the psychology and cognitive/attributional processes of young women in regard to violence (Chesney-Lind & Sheldon, 1992), perhaps because the prevalence of this group in the criminal population has only recently been considered as a serious problem.

Attribution Theory

Attribution theory is concerned with the cognitive processes that individuals use to justify the events that occur in their social and physical environments (Kelley, 1973). As described by Heider (1958), Jones and Harris (1967), Kelley (1973), and Weiner (1985), individuals operate in the social environment through action, and the process of assigning causes to their actions and experiences is called causal attribution. People set goals, make decisions, and plan activities based on their sociopsychological analysis and appraisal of their past actions, in a dynamic interplay both internally and in relationship with other individuals (Janoff-Bulman, 1979; Janoff-Bulman & Freize, 1983; Silver, Wortman, & Klos, 1982). These causal attributions determine how a person will interpret a given event, by identifying the location of its cause (i.e., internal or external to the individual), the stability of the cause over time (i.e., transient or lasting; Kelley, 1973), and the responsibility for the event (i.e., whether or not the cause is seen as under the individual's control; Abramson, Seligman, & Teasdale, 1978; Wortman & Dintzer, 1978). The resulting appraisal is incorporated into the individual's motivational
dynamics. An appraisal of something as a good for action becomes a move to action, or motivation (Arnold, 1962). In this way, an individual’s subjective assessments may strengthen or weaken the person’s motivation to achieve a particular objective.

It is by making attributions that people justify their own behaviors and make sense of them. When recognized, these attributions also can predict future behaviors (Heider, 1958; Jones & Harris, 1967; Kelley, 1973; Weiner, 1986). According to Bulman and Wortman (1977), Fincham, Beach, and Baucom (1987), Grills and Ollendick (2002), Janoff-Bulman (1979), and other researchers, people are more likely to experience distress that contributes to depression when they attribute their behavioral outcome to personality traits or dispositional characteristics (characterological attributions). Greater mental health benefits are found in people who attribute their problems to some aspect of their own behaviors or to situational factors. An individual’s framework of attribution can be a window through which we can view the person’s emotional vulnerability self-image, and his/her approach to solving social and interpersonal problems (Jones & Nisbett, 1972; Lazarus & Launier, 1978).

The self-questioning involved in the attribution process is also accompanied by inhibitory responses that function quite apart from these appraisals and assumptions. It is the brain’s inhibitory response capability that allows people to tolerate, cope with, and master their impulses. As a result, these causal attributions are not necessarily rational or objective; they are influenced by the individual’s cognitive and sociocultural biases, which include the following: (a) cognitive heuristics, which represent problem-solving strategies that reduce the complexity of making probabilistic judgments (Kahneman, Slovic, & Tversky, 1982; Nisbett & Ross, 1980), and which, as noted by Tversky and Kahneman (1974, p. 1124), “are quite useful, but sometimes they lead to severe and systematic errors”; (b) the just world theory, which represents the underlying belief that
life is fundamentally “fair” and might influence individuals to view victims as being responsible for their own circumstances (Lerner, 1970, p. 190); (c) the fundamental attribution error, wherein personal or dispositional factors are overemphasized and situational and environmental factors are underemphasized (Tetlock, 1985); (d) defensive attribution bias, wherein a person’s tendency to blame another person increases as the observer’s perceived similarity to the other person’s circumstances decreases (cf. Burger, 1981); and (3) stereotyping, which occurs as a direct result of the out-group homogeneity, wherein people tend to assign the cause of undesirable behavior by an out-group member to a personal deficiency that they attribute to all members of that group (cf. Fiske, 2000).

Taken together, these cognitive and motivational biases provide the support framework for the individual’s patterns of moral and social behavior. Although research on attribution theory in the context of violence and victimization has gained prominence recently, little attention has been paid to the role that attribution plays in placing adolescents at risk for perpetrating acts of violence—especially the role played by violence attribution error.

Because of gendered socialization processes, the differing social status of men and women, and the fact that victim blaming is more common in certain cultures, female juvenile delinquents may show different violence attribution errors than do male juvenile delinquents. Research on this topic is becoming increasingly urgent because the rates of female crime have risen dramatically in recent years. Chesney-Lind (2001) cites federal statistics that the rate of female violent crime has increased more than 100% since 1961; between 1989 and 1996 the arrest rate for female adolescents increased 50.3% (compared to 16.5% for males), and during the same period there was a 64.3% increase in arrests of females for serious violent offenses. According to a report by the
U.S. Department of Justice, in 1999, there were 2.1 million female violent offenders, representing 14% of all violent offenders (U.S. Department of Justice, 1999).

There are limited data on attribution errors among female delinquents; however, several studies exist in the area of attribution errors among delinquents. For example, Daley and Onwuegbuzie (1995) documented that 80% of male juvenile delinquents make inaccurate causal attributions when explaining the violent actions of others. In a later study, Daley and Onwuegbuzie (2004) coined the term “violence attribution error” (p. 551). A specific form of attribution error, this refers to “errors that occur when an offender does not blame the perpetrator of a violent act (e.g., rape) but instead blames either the victim or the circumstance” (p. 551).

In the only study, to date, investigation the violence attribution errors of females, Daley and Onwuegbuzie (1999) compared male (n = 73) and female (n = 80) high schools students with respect to violence attribution errors. These researchers found that females tended to make significantly fewer violence attribution errors (i.e., “errors that occur when an offender does not blame the perpetrator of a violent act (e.g., rape) but instead blames either the victim or the circumstance”; Daley & Onwuegbuzie, 2004, p. 551) than did their male counterparts. The effect size (d = 0.63) associated with this difference was moderate-to-large. More recently, using a mixed method analysis (Johnson & Onwuegbuzie, 2004), Daley and Onwuegbuzie (2004) reported that the male juvenile offenders, who were incarcerated at a correctional facility in a large southeastern U.S. state, committed violence attribution errors approximately 53% of the time. Although Daley and Onwuegbuzie (2002/2003, 2004) provided evidence that violence attribution errors play an important role in predicting at-risk behaviors, their studies only involved male delinquents. Yet, it is likely that violence attribution errors also place females at-risk for delinquency. However, this possible link has yet to be
investigated. This was a subject of the current investigation.

In addition to gender, examining race as a static criminogenic factor (i.e., a factor identified by research as a predictor of crime or criminality) also is poignant due to the over-representation of minority youth currently involved in the juvenile justice system (Florida Department of Juvenile Justice, 2006). Minority youth disproportionately experience a greater degree of violent victimization and perpetration, with homicides accounting for the leading cause of death among African-American males and females between the ages of 15 and 24 years (Commission for the Prevention of Youth Violence, 2000). In 1997, minorities represented 24% of the juvenile population, yet were 67% of the juveniles incarcerated in detention facilities (Commission for Prevention of Youth Violence, 2000). Furthermore, in 2003, African-American youth were more at risk than were White youth, and three times as likely as were youth of other races to be victims of serious violent crime (Federal Interagency Forum on Child and Family Statistics [FIFCFS], 2005). Findings from other studies indicate that gender and race differ across groups in their rates of violence, and that gender and race groups are differentially exposed to protective and risk factors that contribute or ameliorate the risk of violence exposure (Herrenkohl, Hill, Chung, & Catalano, 2004).

With these variables in mind, a second central purpose was to identify predictors (i.e., peer victimization, self-esteem, and demographic variables) of violence attribution errors. Although numerous studies have been conducted on key indicators of risk that identify a youth to be on a potential path to delinquency such as poverty, poor self-concept, association with delinquent peers, drug use, physical and sexual abuse, poor parenting, truancy, and poor educational performance (Archwemey & Katsyannis, 2000; Ball & Connolly, 2000; Carr & Vandiver, 2001; Chesney-Lind & Sheldon, 1998; Goff & Goddard, 1999; Matza, 1964; Stoiber, 1998; Tanner, Davies, & O'Grady, 1999;
Waytowich & Onwueguzie, 2007; Welsh, Stokes, & Greene, 2000), scant research has been paid attention to predictors of violence attribution errors. Because violence attribution errors have been found to predict acts of violence (Daley & Onwueguzie, 2002/2003), it is expected that identifying antecedents of violence attribution errors likely would increase our understanding of why adolescents engage in delinquent behaviors in general and acts of violence in particular. The present study was unique for at least two reasons. First, the current investigation was the first to investigate violence attribution errors committed by female juvenile delinquents. In addition, it represented the only study in which male and female juvenile delinquents have been compared with respect to these attribution errors.

The relevance of researching female delinquency is especially pertinent to the state of Florida. Inasmuch as the representation of females in Florida’s Juvenile Justice system is growing, the 2001-2002 statistics were somewhat more encouraging, with females accounting for less than 30% of all juvenile delinquency referrals. However, between 1998-1999 and 2002-2003 female residential placements increased 25.2%, resulting in a greater number of girls placed in commitment programs for violent offenders (Florida Department of Juvenile Justice, 2008).
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Future School Counselors’ Perceptions of Twice-Exceptionality:  
An Exploratory Study

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An exploratory survey was given to school counselors-in-training to gather preliminary information about their perceptions regarding students with twice-exceptionalities, their professional roles concerning service provision, and the roles of other helpers in assisting twice-exceptional students in the school setting. Thirty-seven participants responded to the survey consisting of 18 first-year and 19 second-year graduate students. Results provide descriptive information from the future school counselors about their perceptions of twice-exceptionality and current understanding of how to serve these students best. Participants deemed vocational/career planning as their most important role rather than advocacy. This initial survey is presented with the intention of stimulating discussion among counselors and educators regarding the practicalities involved in meeting the ethical mandates to serve twice-exceptional students successfully.

It has been estimated that more than 360,000 American students might be twice-exceptional (Assouline, Foley Nicpon, & Huber, 2006b). Twice-exceptional (2E) individuals may be described as “gifted students with learning, behavioral, emotional, and/or social impairments” (Assouline et al., 2006b, para. 1). These learners are a historically underserved population with unique needs that must be addressed (Leggett, Shea, & Wilson, 2010). In the past few years, professional school counselors across the United States have been called to change their roles and responsibilities regarding proactive advocacy, collaboration, and direct student contact (Dahir & Stone, 2007). Furthermore, school counselors have an ethical obligation to advocate for 2E students (Leggett et al., 2010). Given this ethical obligation, research is needed to determine whether school counselors are aware of this population and how they perceive the roles that they and others should assume to assist 2E students.

Twice-Exceptionality

The term twice-exceptional refers to individuals who demonstrate superior ability in certain academic foci, but who also possess disabilities in other areas (Coleman, Harradine, & King, 2005). Twice-exceptional (2E) students are often observed by educators as having either a learning disability (LD) or a special talent and subsequently placed in services focusing on only one of these two areas (King, 2005). Unfortunately, this either-or situation neglects the other needs of the student, which can result in emotional, behavioral, and cognitive consequences. In an experimental study, Bianco (2005) demonstrated that labels of learning disability have a negative influence on referrals to gifted programs by educators from both general and special education backgrounds. In other cases, these students remain unqualified for any services because neither area of strength nor weakness is formally identified (McCoach, Kehle, Bray, & Siegle, 2004). Additionally, the complex interaction created by dual exceptionalities can impact the identity, academic curriculum, and vocational/career planning needs for these students. Thus, an awareness of twice exceptionality and knowledge of how to identify these students and their special needs are imperative to providing successful interventions and advocacy.

Unfortunately, twice-exceptional students have not received the school services needed to enable them to excel socially and academically. Whitmore and Maker (1985) described twice-exceptional students as “the most misjudged, misunderstood, and neglected segment of the student population and the

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community” (p. 204). They expressed concerns that this group of learners would not achieve their enormous potential due to being denied access to resources and opportunities. School-based identification and intervention efforts tend to be directed toward either development of strengths or remediation of deficits. Although both the fields of learning disabilities and giftedness are represented under the umbrella of special education services, these areas have a history of operating as distinct and separate entities. Researchers in both fields have recommended a collaborative outlook and noted the inadequacies of their respective definitions in the identification of twice-exceptional learners (Boodoo, Bradley, Frontera, Pitts, & Wright, 1989; Yewchuk & Lupart, 2000). School counselors may be the catalyst to facilitate this collaboration in education services.

**The Role of School Counselors**

The American School Counselor Association (ASCA) provides a clear definition of the role that school counselors play in educational leadership. School counselors should help all students become healthy, contributing members of society through academic achievement, personal/social development, and career development (ASCA, 2010). What 2E students especially need to reach these goals is an advocate, a primary role of the school counselor (Leggett et al., 2010). Within the ASCA National Model: A Framework for School Counseling Programs, school counselors are currently viewed as “change agents” who are encouraged to implement advocacy activities on a daily basis (ASCA, 2003, p. 10). Advocating for twice-exceptional students can facilitate collaborative bridges among gifted education and LD specialists, enabling students to receive the educational support they need. School counselors also can help school administrators and educators understand diversity in giftedness and develop alternative ways to identify giftedness and re-structure gifted programming. Furthermore, school counselors can proactively work to foster a culture that encourages all students to reach their full potential. A climate in which diversity is genuinely embraced can dispel stereotypes that impede identification of twice-exceptional students.

**Fostering Academic Excellence**

Best practice school-based education programming for twice-exceptional learners involves a holistic approach in which an educational blueprint is created (Newman & Sternberg, 2004). This blueprint is individualized and includes simultaneous provision of gifted education programming, accommodations, and research-based remediation services. Baum, Cooper, and Neu (2001) strongly emphasized the need for gifted and talented programming for these atypical learners. School counselors can ensure that their school has gifted education curricula which normalize the allowance of accommodations for twice-exceptional students. For example, if a heavy load of reading is required, audio recordings or assistive reading technology is readily made available and holds no spoken or unspoken stigma (Council for Exceptional Children, 2005). In addition, school counselors can become proactive leaders in their schools by becoming knowledgeable of such technology advancements and educating both students and teachers about how to use technology resources.

**Fostering Personal/Social Development**

School counselors also have important roles in providing behavioral and psychological support to 2E students. Students with twice-exceptionalities have specific counseling requirements and appear at risk for experiencing social and emotional difficulties, including perfectionism, intense frustration, and learned helplessness (Reis & Colbert, 2004; Silverman, 1993). According to Newman and Sternberg (2004), gifted children with learning disabilities are at risk to develop behavioral and emotional problems including low self-esteem, poor motivation, depression, and anxiety. For example, twice-exceptional students labeled as gifted and expected to have strengths in all areas will undoubtedly experience frustration and confusion when they are unable to meet all the expectations required of them (Strop, 2003). In a comparative case study, Moon, Zentall, Grskovie, Hall, and Stormont (2001) demonstrated higher levels of emotional difficulties to exist in the Attention deficit hyperactivity disorder (ADHD)/High IQ group as compared with the ADHD only and High IQ only groups. School counselors can be sensitive to the emotional risks involved in twice-exceptionality and provide suitable counseling, when necessary. In addition, school counselors can take the lead in creating a positive school climate where faculty and students recognize, accept, and celebrate learning differences.

**Fostering Career Development**

Regarding vocational/career planning, students with twice exceptionalities need self-awareness about their unique learning styles, including their gifts and vulnerabilities. It is important to provide a variety of options and paths for post-secondary transition that would allow them to achieve their highest potential (Holliday, Koller, & Thomas, 1999). School counselors can help twice-exceptional students realize their distinctive learning profiles and create a plan for the future that reflects goals and high
potential. By believing in these students and advocating for them, school counselors will give these students the strength and the skills that they will need in order to navigate successfully through future educational and workplace systems.

Ethical Issues and Obligations

The academic, personal/social, and career services previously discussed are an ideal conceptualization of the many possible services that school counselors can offer twice-exceptional students. Unfortunately, many of these services are not being provided on a consistent basis. Nielsen and Higgins (2005) discussed the current lack of choice, connections, and compassion provided for these students. For example, in strict school systems where students are expected to obey rules and conform, twice-exceptional students are often unable to meet these inflexible demands (Nielsen & Higgins, 2005). These unrealistic expectations initiated a lack of compassion by frustrated teachers and a sense of disconnection from others by twice-exceptional students. Bade (2007) similarly documented a 54% (n = 600) confidence level among parents, teachers, and counselors that their school leaders are doing all they can to help twice-exceptional students. However, respondents reported much higher levels of support for other student populations such as regular education, special education/LD, and gifted students. As twice-exceptional students are believed to be the most underserved population in the school system (Whitmore & Maker, 1985), research is needed to explore why school counselors are not doing more to ensure their success. This issue warrants a reminder on the ethical obligation school counselors have to inform parents and educators about twice-exceptionality, to advocate for these unique learners, and to implement beneficial services on a consistent basis.

The Ethical Standards for School Counselors (ASCA, 2004) contain sections that direct school counselors to serve as proactive advocates for all students. Leggett et al. (2010) drew attention to these ethical mandates as they apply to 2E learners. Researchers have suggested that twice-exceptional learners can benefit greatly from the advocacy efforts of school counselors (Assouline, Foley Nicpon, & Huber, 2006a; Milsom & Peterson, 2006). However, advocacy for twice-exceptional students is still lacking in the school system (Bade, 2007). Meaningful change must occur within the school counseling profession for school counselors to be made aware of this important issue and be given the resources to provide proper services. Through continuing education and training programs, counselor educators can begin to facilitate those changes.

The Role of Counselor Educators

Counselor educators are designated as leaders in training and education for school and other counseling professionals. In the same way that professional school counselors need to listen to the needs of their 2E, counselor educators must be attuned to school counselor preparation needs. If school counselors have an awareness of twice-exceptional needs, they can provide much needed counseling and support services in order to ensure that 2E students reach their academic, social/emotional and vocational potential. Given the importance of advocacy and the substantial unmet needs of these students, an examination is needed of whether school counselor training programs have taken subsequent steps to ensure that future school counselors are equipped with the knowledge necessary to become competent activists for 2E students.

Historically, school counseling programs have not provided much guidance in giftedness, learning disabilities, or the integration of both (Korinek & Prillaman, 1992). Prior to the late 1990’s, specific coursework related to students with disabilities or practicum experiences with those students were not required in school counseling programs. Furthermore, although increasing school counseling students’ knowledge about learning disabilities was acknowledged as important, few school counseling programs indicated plans to make changes in course curricula. Milsom (2002) surveyed employed school counselors who completed graduate work between 1994 and 2000 and documented a general lack of uniformity among school counseling programs regarding LD-related course content. In addition, school counselor respondents reported feeling least prepared regarding transition planning services for students with learning disabilities and most prepared regarding individual and group counseling. It might be that such programming touched only upon learning disabilities and did not provide much, if any, coverage of dual exceptionalities.

Furthermore, Field and Baker (2004) revealed that school counselors reported a lack of proactive advocacy skills and held perceptions of advocacy that fit within a reactive framework, such as responding to a complaint or problem. The reported actions of the school counselors did not include any behaviors with a holistic/systemic orientation that were intended to impact/change a problematic system or unhealthy aspect of the school climate. It is illogical to expect school counselors to be proactive regarding this important population if they have little or no knowledge or awareness of twice-exceptionality; however, they are ethically mandated to do so. The
knowledge that school counselors-in-training have about this population needs to be examined.

In response to this need, a pilot study was undertaken to explore the knowledge that future school counselors held about twice-exceptionality. Additionally investigated were their perceptions regarding the roles that they and other individuals should assume in working with 2E students. Specifically identifying how future school counselors viewed the needs of twice-exceptional students and how they conceptualized their roles (and the roles of others) may provide a useful framework for making necessary improvements in academic service provision for students with twice-exceptionalities as well as for making adjustments in graduate training curricula for future school counselors.

Research Questions
The researchers constructed a brief survey to discover: (a) if future school counselors had any knowledge of twice-exceptionality; (b) whether any discrepancy was present between knowledge of the concept of twice-exceptionality and ability to recognize, for example, a student who possesses both giftedness and a learning disability; (c) how future school counselors perceived their roles (relating to /providing services) to students with twice-exceptionalities; and (d) how future school counselors perceived the roles of others (e.g., regular education teachers, gifted education specialists, LD specialists, school psychologists, and parents) in working with students with twice-exceptionalities.

Method
Participants
Forty-four school counseling students enrolled in a mid-size, Mid-western university who were already placed in schools were recruited for the study. These counseling students are required to work at all three levels: elementary, middle, and high school. Thirty-seven students chose to participate, yielding a response rate of 84%. Students were surveyed in two groups, first-year and second-year. Eighteen first-year and 19 second-year graduate students volunteered to complete the survey. The mean age of the first-year school counselor group was 31 years. Two of the first-year students identified as male, 13 identified as female, and three did not respond. Regarding ethnicity, 14 first-year students identified themselves as White, one identified as Bi-racial, one identified as African-American, and two chose not to respond. Eight first-year students reported being a parent; however, none of those respondents reported being a parent of a twice-exceptional learner.

The mean age of the second-year school counselor group was 31 years. Three second-year students identified as male, 11 identified as female and five did not respond to this item. Regarding ethnicity, 13 second-year students identified themselves as White and six chose not to respond to this item. Seven second-year school counselor graduate students reported being a parent; one reported being a parent of a twice-exceptional learner.

Measure
Given the paucity of literature related to the preparation of school counselors to address the issues of twice exceptionality, items were created by the researcher, a national advocate for children with twice exceptionality, with the aim of gathering information related to future school counselors’ perceptions of twice exceptionality and role expectations of school counselors and others in providing services to 2E students. The items were presented to three members of a research team, which included two doctoral students in counseling trained in research methods and one counselor educator, who reviewed the initial items and submitted suggestions for revision. The final version of the survey consisted of 11 revised survey items and a brief demographics form (see Appendix 1).

Procedure
Upon receiving approval from the Institutional Review Board for Human Subjects and course instructors, a research team member not associated with the school counseling graduate program distributed the brief survey and informed consent form. The survey was administered during two separate scheduled class periods to two different cohorts of school counseling graduate students. All students turned in their surveys (completed and uncompleted) at the end of the class period. Surveys were then collected by the research associate.

Results
The following results are organized according to our four research questions.

Research Question 1: Knowledge of Twice exceptionality
A majority of the participants identified having no knowledge of twice exceptionality. The three persons who reported knowledge about 2E demonstrated an accurate understanding of twice exceptionality as students who exhibit both giftedness and a disability. Only two of the 18 respondents in the first-year group indicated familiarity with the concept. One respondent reported gaining the knowledge from "my supervisor" that 2E means "someone with a learning
disability who is also very gifted.” The other participant indicated learning about the concept “from a friend whose brother is twice exceptional” and reported “[understanding was] minimal— that it applies to individuals who have learning disabilities in one area but excel in another.” Of the 19 respondents in the second-year group, only one indicated knowledge of the concept. That student reported learning about twice exceptionality through a "previous academic project” and that the term meant “gifted education students who also have a learning disability or social issue.”

Research Question 2: Discrepancy between Knowledge and Ability to Recognize Learner

This question was addressed by survey Questions #1, which asked about familiarity with the concept, and #11, which provided a definition and asked whether they had encountered such a student. The majority of respondents reported that they were not familiar with the concept of twice exceptionality. Not surprisingly, they also reported they had not encountered a 2E student. Of the 18 first-year participants, four responded that they were not familiar with twice exceptionality but had encountered a student whom they thought fit this description. The two respondents who indicated understanding the concept of twice exceptionality reported that they had not encountered a 2E student. Of the 19 second-year participants, eight responded that they had encountered a student whom they thought was twice-exceptional. Seven of those participants indicated that they were not familiar with the concept of twice exceptionality. Only one participant affirmatively responded to both Question 1 and Question 11.

Research Question 3: Perceived Role with Twice-Exceptional Students

Survey Items #5, #6, #7, #8 and #9 were used to determine the roles that these future school counselors perceived for themselves with regards to 2E students. For these items, respondents ranked individuals in order of importance for identifying 2E students; meeting their educational, psychological, and career/vocational needs; and advocating for these learners. The means for the responses to these survey items (and Item 10) are shown below in Table 1.

Table 1

Mean Ranking of Importance of Individuals for Specific Roles

<table>
<thead>
<tr>
<th>Role</th>
<th>RT</th>
<th>GSp</th>
<th>LD Sp</th>
<th>SC</th>
<th>SPsy</th>
<th>Parent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First-Year Group</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identify student</td>
<td>3.72</td>
<td>3.61</td>
<td>3.61</td>
<td>3.06</td>
<td>2.83</td>
<td>4.11</td>
</tr>
<tr>
<td>Meet ed. needs</td>
<td>3.00</td>
<td>2.83</td>
<td>3.06</td>
<td>3.28</td>
<td>4.78</td>
<td>4.00</td>
</tr>
<tr>
<td>Meet psy. needs</td>
<td>4.56</td>
<td>4.06</td>
<td>3.94</td>
<td>2.33</td>
<td>2.83</td>
<td>2.94</td>
</tr>
<tr>
<td>Meet voc/career needs</td>
<td>4.06</td>
<td>3.61</td>
<td>3.28</td>
<td>1.83</td>
<td>5.44</td>
<td>2.61</td>
</tr>
<tr>
<td>Advocate</td>
<td>4.33</td>
<td>3.61</td>
<td>3.44</td>
<td>1.94</td>
<td>5.06</td>
<td>2.61</td>
</tr>
<tr>
<td>Benefit from ed.</td>
<td>2.22</td>
<td>3.56</td>
<td>4.00</td>
<td>3.33</td>
<td>5.39</td>
<td>2.44</td>
</tr>
<tr>
<td><strong>Second-Year Group</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identify student</td>
<td>2.74</td>
<td>4.26</td>
<td>3.79</td>
<td>4.00</td>
<td>3.21</td>
<td>2.84</td>
</tr>
<tr>
<td>Meet ed. needs</td>
<td>2.16</td>
<td>3.32</td>
<td>3.53</td>
<td>4.32</td>
<td>4.53</td>
<td>3.11</td>
</tr>
<tr>
<td>Meet psy. needs</td>
<td>4.16</td>
<td>4.37</td>
<td>4.11</td>
<td>2.63</td>
<td>3.37</td>
<td>2.26</td>
</tr>
<tr>
<td>Meet voc/career needs</td>
<td>3.72</td>
<td>3.72</td>
<td>3.44</td>
<td>1.83</td>
<td>5.56</td>
<td>2.56</td>
</tr>
<tr>
<td>Advocate</td>
<td>3.89</td>
<td>4.21</td>
<td>4.11</td>
<td>1.95</td>
<td>5.26</td>
<td>1.47</td>
</tr>
<tr>
<td>Benefit from ed.</td>
<td>2.32</td>
<td>3.68</td>
<td>3.68</td>
<td>3.42</td>
<td>5.00</td>
<td>2.74</td>
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</tbody>
</table>

Note. RT = Regular classroom teacher; GSp = Gifted education specialist; LDSp = LD specialist; SC = School counselor; SPsy = School psychologist; Meet ed. needs = Meet educational needs; Meet psy. needs = Meet psychological needs; Meet voc/career needs = Meet vocational/career needs; Benefit from ed. = Benefit from additional education. Lower numbers indicate greater importance.
Both first-year and second-year school counseling students thought that their main role in working with twice-exceptional students was to provide vocational and career planning services. The most important role chosen (\(M = 1.83, M = 1.83\), lower means demonstrated more importance) by both the first-year and second-year school counseling student groups was meeting vocational and career planning needs. Both groups ranked advocacy as second in importance (\(M = 1.94, M = 1.95\)).

** Research Question 4: Perceived Roles of Others with Twice-Exceptional Students

Participants’ perceptions of the role of others (e.g., regular education teachers, gifted education specialists, LD specialists, school psychologists, and parents) with regard to 2E students was explored through Items #5, #6, #7, #8 and #9 (see Table 1). The primary role of regular education teachers was seen by both first-year and second-year school counseling students as meeting 2E students’ educational needs (first-year group \(M = 3.0\), second-year group \(M = 2.15\)). Identification of 2E students was deemed the second most important role for regular education teachers (first-year group \(M = 3.72\), second-year group \(M = 2.73\)).

Both first-year and second-year students reported the main role of gifted education specialists as meeting educational needs (\(M = 2.83, M = 3.31\), respectively). First-year students placed equal importance on the roles of identification, advocacy, and vocational and career planning needs (\(M = 3.61\)) for gifted education specialists. Second-year students deemed meeting vocational and career planning needs as next in importance for gifted education specialists (\(M = 3.72\)).

First-year school counseling students reported the main role for LD specialists to be meeting educational needs (\(M = 3.05\)), whereas second-year school counseling students believed that LD specialists should be primarily concerned with vocational and career planning needs (\(M = 3.44\)). The second most important role for LD specialists was deemed to be meeting vocational and career planning needs by the first-year group (\(M = 3.27\)). Meeting educational needs was identified as next in importance by the second-year group (\(M = 3.52\)).

Both first-year and second-year school counseling students believed that school psychologists should be concerned with providing identification and psychological services. The first-year group gave equal importance to the roles of meeting psychological needs and identifying 2E students for school psychologists (\(M = 2.83\)). Second-year students perceived identification as the most important role (\(M = 3.21\)). They deemed meeting psychological needs as the next most important role (\(M = 3.36\)) for school psychologists.

Both groups of school counseling students chose advocacy as a main role with regards to parents of 2E students. First-year school counseling students ranked the roles of advocacy and vocational and career planning needs equally in importance (\(M = 2.61\)). Meeting the psychological needs was endorsed next in importance (\(M = 2.94\)). Advocacy was perceived by the second-year school counseling group as the most important role for parents (\(M = 1.47\)). This group judged meeting psychological needs as the second most important role (\(M = 2.26\)). Both first-year and second-year future school counselors identified regular education teachers (\(M = 2.22, M = 2.31\), respectively) and parents (\(M = 2.44, M = 2.73\)) as groups that would benefit from more education regarding twice exceptionality.

** Discussion

Contrary to the expectations of the ASCA (2003) National Model and their Ethical Code (2004), the future school counselors in our pilot study did not view advocacy as their most important role in working with students with twice exceptionalities. Surprisingly, they deemed meeting vocational/career planning needs as their most important role in working with these unique learners. It could be that school counseling programs are emphasizing increased involvement in transitional planning services for students with learning disabilities. It also might be that training programs are reflecting the reality that school counselors have many other responsibilities in the school setting, which might push advocacy from the forefront of their awareness. Hopefully, school counseling programs are also teaching identification of gifts, talents, and strengths as an important part of transition planning. The question remains, though, whether advocacy training is being woven strongly enough into the cores of education and training programs.

Future school counselors deemed advocacy to be the primary role of parents of twice-exceptional learners. This view of the parent’s main role as an advocate is somewhat concerning. On one hand, future school counselors might be expressing their willingness to learn from and to collaborate with concerned, educated parents. On the other hand, it might be reflective of a reactive-advocacy framework in which the school counselor does not operate as an agent of change and historically only responds when confronted with a problem.

Approximately three quarters of our sample reported that they possessed no knowledge about twice exceptionality. It appears that, at least for this group, providing complete and effective advocacy for
2E students might be a difficult task due to a scarce knowledge base regarding twice-exceptional issues. Eight second-year school counseling students stated that they had encountered a student whom they thought was gifted and learning disabled. Because of the likelihood that these encounters were made during their internship/fieldwork, a question arises about whether these encounters were brought to the attention of any supervisors and if the supervisors possessed an adequate knowledge base regarding twice-exceptional issues.

Given that this group of future school counselors did not possess an adequate knowledge base regarding twice-exceptional issues and the National Model emphasized providing advocacy for special needs populations, it was curious that they did not identify school counselors as the most important group to benefit from more education and training about students who are twice-exceptional. Instead, regular education teachers were seen as the most important group (parents were deemed next in importance) to benefit from more education and training. School counseling programs might not be communicating to trainees the importance of advocacy for all students. However, it might be that the term advocacy is being interpreted by this group from a reactive stance rather than a proactive one regardless of how well or often it is being presented by their training program.

Limitations of this brief survey and pilot study need to be acknowledged. Potential sample biases include a small sample size and a sample consisting of school counseling students from only one school counseling program from one particular university. The resulting survey items have not been subjected to any reliability or validity investigations. The intention of this pilot study was exploratory and descriptive in nature. In upcoming studies, we would like to see an expansion of sample size and an increase in the breadth of the participant sample, for example, including school counseling students from different universities and sampling from a professional organization membership. In addition, we hope to witness a stronger statistical methodology built with the survey items.

These current small explorative steps make a helpful contribution by raising the question regarding practical implementation of the current ethical mandates to serve at-risk populations, such as twice-exceptional learners. To work effectively for twice-exceptional students, it is clearly important for future school counselors to possess the skills to advocate in a proactive manner. Future school counselors must develop a special knowledge base and awareness of the needs of students with twice exceptionalities. In order to fulfill their professional and ethical responsibilities, they deserve more than superficial exposure to these issues from their graduate education and training programs. Perhaps counselor educators can re-examine traditional teaching methods and curricula in school counseling programming and, subsequently, create new, innovative blueprints by which to disseminate the diversity of information that their school counseling trainees need successfully to meet all the current ethical and professional demands of their profession.

Students with twice exceptionalities remain vulnerable to being misdiagnosed, misunderstood, and misled. These unique learners still have many unmet needs in the domains of identification, academic curricular, social/emotional, and vocational/career planning. Confusion regarding twice exceptionality might have been influencing the perceptions of this sample of future school counselors. In order to fulfill ethical and professional obligations, the origin of this confusion needs to be explored. Practically speaking, much more research is clearly needed in order to reveal whether educators can honestly tell concerned parents of these unique learners that their professional school counselor possesses enough knowledge about twice exceptionality to advocate skillfully for their academically, socially, and vocationally vulnerable child.

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References


DEBRA LEGGETT, IRENE SHEA, AND JOANNA LEGGETT
Appendix

Survey

1. Are you familiar with the concept of twice-exceptionalities?
   a. ___ Yes
   b. ___ No (Go to #2)

   If yes, where did this knowledge originate?
   a. ______________________________________________________________
      ______________________________________________________________

   If yes, what is your understanding of twice-exceptionalities?
   a. ______________________________________________________________
      ______________________________________________________________

2. Which of these services does your current school provide? Please check all that apply.
   a. ___ LD services
   b. ___ Gifted education services
   c. ___ Renzulli Learning
   d. ___ Integration of LD services and Gifted education services

3. Are you familiar with your district’s guidelines for gifted education services?
   a. ___ Yes
   b. ___ No

4. Are you familiar with your district’s guidelines for special education services?
   a. ___ Yes
   b. ___ No

5. Please rank the importance of the following positions in identifying a student who is both gifted and learning disabled. (1 = most important, 6 = least important)
   a. ___ Regular education classroom teacher
   b. ___ Gifted education specialist
   c. ___ LD specialist
   d. ___ School Counselor
   e. ___ School Psychologist
   f. ___ Parent

6. Please rank the importance of the following positions in meeting the educational needs of a student who is both gifted and learning disabled. (1 = most important, 6 = least important)
   a. ___ Regular education classroom teacher
   b. ___ Gifted education specialist
   c. ___ LD specialist
   d. ___ School Counselor
   e. ___ School Psychologist
   f. ___ Parent
7. Please rank the importance of the following positions in *meeting the psychological needs* of a student who is both gifted and learning disabled. (1 = most important, 6 = least important)
   a. ___ Regular education classroom teacher
   b. ___ Gifted education specialist
   c. ___ LD specialist
   d. ___ School Counselor
   e. ___ School Psychologist
   f. ___ Parent

8. Please rank the importance of the following positions in *meeting the vocational and career planning needs* of a student who is both gifted and learning disabled. (1 = most important, 6 = least important)
   a. ___ Regular education classroom teacher
   b. ___ Gifted education specialist
   c. ___ LD specialist
   d. ___ School Counselor
   e. ___ School Psychologist
   f. ___ Parent

9. Please rank the importance of the following positions in *advocating* for a student who is both gifted and learning disabled. (1 = most important, 6 = least important)
   a. ___ Regular education classroom teacher
   b. ___ Gifted education specialist
   c. ___ LD specialist
   d. ___ School Counselor
   e. ___ School Psychologist
   f. ___ Parent

10. Please rank the importance of the following positions in *benefiting from more education* about students who are both gifted and learning disabled. (1 = most important, 6 = least important)
    a. ___ Regular education classroom teacher
    b. ___ Gifted education specialist
    c. ___ LD specialist
    d. ___ School Counselor
    e. ___ School Psychologist
    f. ___ Parent

11. An example of a twice-exceptional learner is one who possesses both giftedness and a learning disability. Have you ever encountered such a student?
    a. ___ No
    b. ___ Yes, please describe (without using names or identifying information)

        ________________________________
        ________________________________
        ________________________________
        ________________________________
FUTURE SCHOOL COUNSELORS’ PERCEPTION OF TWICE-EXCEPTIONALITY: AN EXPLORATORY STUDY

Demographic Information - OPTIONAL

Age____
Ethnicity _______________________
Gender ______________________
Previous Degree (s)______________________________
Undergraduate Major _______________________________
I am a parent. ___Yes ___ No
I am a parent of a twice-exceptional learner. ___Yes ___ No
Year/Semester in School Counseling Master of Education Program______________
Are you currently working in a rural or urban school setting? _________________
Applying Mixed Methods Research at the Synthesis Level: An Overview

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Historically, qualitative and quantitative approaches have been applied relatively separately in synthesizing qualitative and quantitative evidence, respectively, in several research domains. However, mixed methods approaches are becoming increasingly popular nowadays, and practices of combining qualitative and quantitative research components at the primary empirical study level recently have increased significantly in frequency. Nonetheless, this mixing of methods is only seldom considered and adapted at the synthesis level. Thus, we presented an overview of the recent developments concerning mixing methods at the synthesis level, and explored the possible contributions and challenges of mixed methods research to the integration of qualitative and quantitative research at this level.

The importance of systematically reviewing research evidence for generating up-to-date condensed records that accurately inform policy and practice has gradually been recognized during the last two centuries (Chalmers, Hedges, & Cooper, 2002; Mays, Pope, & Popay, 2005). Accordingly, in several research domains, various techniques and methods have been elaborated for systematically analyzing and accumulating evidence in research syntheses (Forbes & Griffiths, 2002; Major & Savin-Baden, 2010; Pluye, Gagnon, Griffiths, & Johnson-Lafleur, 2009; Whittemore & Knafli, 2005; Zimmer, 2006). In 1976, Glass introduced the term meta-analysis to describe statistical methods for synthesizing quantitative primary level research studies (Chalmers et al., 2002). Nowadays, a varied range of statistical models and techniques is applied to conduct meta-analyses of quantitative research evidence (Borenstein, Hedges, Higgins, & Rothstein, 2009; Campbell, 2004; Cooper & Hedges, 1994; Jenson, Clark, Kircher, & Kristjansson, 2007; Mullen & Rosenthal, 1985; Parker, Hagan-Burke, & Vannest, 2007; Rosenthal, 1991; Scruggs & Mastropieri, 1998; Wolf, 1986).

Furthermore, several qualitative meta-synthesis methods that prompt aggregated comprehension from systematically collected qualitative research evidence have been developed and further advanced. Well-known and widely applied examples are narrative review, meta-summary, meta-synthesis, meta-study, grounded formal theory, aggregated analysis, and meta-ethnography (Barbour & Barbour, 2003; Campbell et al., 2003; Estabrooks, Field, & Morse, 1994; Finfgeld, 2003; Gelo, Braakmann, & Benetka, 2008; Jensen & Allen, 1996; Paterson, Thorne, Canam, & Jillings, 2001; Petticrew & Roberts, 2006; Rice, 2008; Sandelowski & Barroso, 2007; Sandelowski, Voils, & Barroso, 2006; Thorne, Jensen, Kearney, Noblit, & Sandelowski, 2004; Walsh & Downe, 2006; Zimmer, 2006).

In addition, methods have been explored systematically to combine evidence described in qualitative and quantitative primary research studies through qualitative and quantitative synthesis techniques within a single research study in order to answer very diverse broad and complex questions in several research areas and content fields (Alise & Teddlie, 2010; Collins, Onwuegbuzie, & Sutton, 2006; Fidel, 2008; Harden & Thomas, 2005, 2010; Hart, Smith, Swars, & Smith, 2009; Hurmerinta-Pelomaki & Nummela, 2006; Hutchinson & Lovell, 2004; Pluye et al., 2009; Sandelowski et al., 2006; Teddlie & Tashakkori, 2009; Voils, Sandelowski, Barroso, & Hasselblad, 2008). Although the practice of combining qualitative and quantitative methods is

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Not new in evaluation and research, it is only after the introduction of the term *mixed methods research* that it became extremely popular (Creswell, 2003; Greene, 2007; Johnson & Onwuegbuzie, 2004; Onwuegbuzie & Leech, 2005; Tashakkori & Creswell, 2007; Tashakkori & Teddlie, 2003). However, this popularity holds primarily for mixed methods research at the primary empirical study level. When conducting a primary level mixed methods study, a team of researchers collects qualitative and quantitative data directly from a group of research participants (e.g., by means of observations, interviews, questionnaires) and combines the collected qualitative and quantitative data in a single study.

When a team of researchers undertakes a *systematic review* by applying the principles of mixed methods research, they undertake a synthesis level *mixed methods study*. We use the notion *mixed methods research synthesis* to refer to this type of systematic review. The data included in a mixed methods research synthesis are findings extracted from various published qualitative, quantitative, and mixed methods primary level articles. Qualitative and quantitative synthesis techniques (e.g., meta-analysis, grounded theory, meta-ethnography, thematic synthesis, critical interpretive synthesis) are used to integrate the various primary level articles within a mixed methods research synthesis. Compared to the popularity of mixed methods research at the primary empirical study level, at the synthesis level, a much smaller number of authors have undertaken a mixed methods research synthesis. However, the integration of qualitative and quantitative methods has promising utility for practice at the primary empirical study level as well as at the synthesis level (Creswell & Tashakkori, 2007; Dellinger & Leech, 2007; Harden & Thomas, 2005; Pluye et al., 2009; Sandelowski et al., 2006; Voils et al., 2008). In order to fill this void, the aim of the present paper is to present an overview of the recent developments concerning mixed methods research at the synthesis level, and to explore the possibilities and challenges of mixed methods research synthesis.

**Method**

In order to grasp the available literature on mixing qualitative and quantitative methods at the synthesis level, we conducted a qualitative research synthesis (Major & Savin-Baden, 2010; Zimmer, 2006). The design of the present paper is a rapid review. A rapid review is a brief report that outlines and compiles the findings of research on a certain topic in order to address a focused research question (Grant & Booth, 2009). A rapid review is a review that makes use of less comprehensive methods than does a systematic review due to a limited timeframe (e.g., search a limited number of electronic databases). The main criterion for considering papers for this review was that the papers had to describe a synthesis framework applying the principles of mixed methods research. We did not apply a restriction on the publication date range, or the language of the papers.

A search strategy was developed, including a search of electronic databases, a hand search of two journals, and a search of the reference lists of all the identified relevant articles. First, we systematically searched three relevant electronic databases: *Web of Science*, *PsycINFO*, and *ERIC*. Keyword descriptors for publications on mixed methods research synthesis comprised two groups of search terms: (a) *mixed method* and *multi method*; and (b) *synthesis*, *review*, *meta*, and *aggregated*. Search terms within each group were combined by means of a Boolean *OR*. The two groups of search terms were combined by means of a Boolean *AND*. Second, we conducted a hand search of the tables of content of two key journals with a tradition of providing information on the methodology of mixed methods research: the *Journal of Mixed Methods Research* and *Quality & Quantity: International Journal of Methodology*. Third, we manually searched the bibliographies of all the identified relevant articles. After retrieving the papers that met our inclusion criteria, we employed analysis techniques described by Major and Savin-Baden (2010) and Zimmer (2006) in order to summarize and to interpret the existing body of literature on synthesis frameworks that apply the principles of mixed methods research. Following the guidelines of Major and Savin-Baden (2010, pp. 56-71), the data analysis consisted of four stages. First, we situated the retrieved studies, identified study findings, and compared the studies. Second, we located themes across the studies. Third, we synthesized data across the studies. Fourth, we interpreted the data across the studies, and moved on from this interpretation to the reporting of the main findings in the present manuscript.

**Mixed Methods Research at the Synthesis level: An Overview**

Figure 1 depicts the results of our systematic search for frameworks on mixing qualitative and quantitative methods at the synthesis level. When searching the databases *Web of Science*, *PsycINFO*, and *ERIC*, the journals *Journal of Mixed Methods Research* and *Quality & Quantity: International Journal of Methodology*; and the reference lists of all the identified relevant articles, we located six elaborated synthesis frameworks applying the principles of mixed methods research (see last column in Figure 1). These frameworks are:
integrative review (Whittemore & Knafl, 2005), meta-needs assessment (Gaber, 2000), mixed methods synthesis (Sandelowski et al., 2005), mixed research synthesis (Harden & Thomas, 2005), mixed studies review (Pluye et al., 2009), and realist review (Pawson, Greenhalgh, Harvey, & Walshe, 2005). Tables 1 and 2 present an overview of the retrieved synthesis frameworks applying the principles of mixed methods research. Table 1 includes a definition of each retrieved framework and describes the relation of each framework to mixed methods research. Table 2 shows the proposed synthesis approach for each framework.

![Search of three electronic databases](image)

**Figure 1:** Retrieved synthesis frameworks applying the principles of mixed methods research.
### Overview of Retrieved Synthesis Frameworks Applying the Principles of Mixed Methods Research: Definition and Relation to Mixed Methods Research

<table>
<thead>
<tr>
<th>Framework</th>
<th>Definition</th>
<th>Relation to mixed methods research</th>
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<tbody>
<tr>
<td>Integrative review</td>
<td>Integrative review is the broadest type of research review methods allowing for simultaneous inclusion of experimental and non-experimental research to understand more fully a phenomenon. It may also combine data from the theoretical and empirical literature (Whittemore &amp; Knafl, 2005, p. 547)</td>
<td>Primary research methods of analysis developed for mixed methods and qualitative designs are particularly applicable to the integrative review method allowing for iterative comparisons across primary data sources (Whittemore &amp; Knafl, 2005, p. 550)</td>
</tr>
<tr>
<td>Meta-needs assessment</td>
<td>Meta-needs assessment is a comprehensive analysis of existing human service needs assessments using secondary data conducted by public, non-profit, and private organizations in a particular community (Gaber, 2000, p. 139)</td>
<td>The meta-needs assessment approach is based on two areas of research: meta-analysis and mixed methods research strategies (triangulation). The meta-analysis literature provides the premise and protocol on how to conduct a meta-needs assessment. Mixed methods research provides insight on how to compare and analyze multiple data sets in a single research project (Gaber, 2000, pp. 140-141)</td>
</tr>
<tr>
<td>Mixed methods synthesis</td>
<td>A mixed methods synthesis is a synthesis that employs both qualitative analysis and statistical analysis (Harden &amp; Thomas, 2005, p. 264)</td>
<td>Our methods involve conducting three types of synthesis: (1) a statistical meta-analysis to pool trials of interventions tackling a particular health, social or educational problem; (2) a synthesis of studies examining people’s perspectives or experiences of that problem using qualitative analysis; and (3) a mixed methods synthesis bringing the products of (1) and (2) together (Harden &amp; Thomas, 2005, p. 257)</td>
</tr>
<tr>
<td>Mixed research synthesis</td>
<td>Mixed research synthesis is our name for the type of systematic review aimed at the integration of results from both qualitative and quantitative studies in a shared domain of empirical research (Sandelowski et al., 2006, p. 29)</td>
<td>The data in mixed research synthesis studies are the findings of primary qualitative and quantitative studies in a designated body of empirical research. The focus is on researchers’ integrations of their data, or the results they report; the products of mixed research synthesis studies are other researchers’ (i.e., reviewers of research) integrations of those results to “sum up” what is known about a target phenomenon and, therefore, to direct both practice and future research (Sandelowski et al., 2006, p. 29)</td>
</tr>
<tr>
<td>Mixed studies review</td>
<td>A mixed studies review is a literature review that concomitantly examines qualitative, quantitative, and mixed methods primary studies. (Pluye et al., 2009, p. 530)</td>
<td>The authors consider mixed studies reviews to be a form of literature review wherein a reviewer/reviewer team concomitantly reviews qualitative, quantitative, and/or mixed methods studies, for the broad purpose of breadth and depth of understanding and corroboration of knowledge based on all types of research, and synthesizes qualitative findings and quantitative results of primary studies. The purpose may be exploratory where the qualitative component dominates (qualitative mixed) or confirmatory where the quantitative component dominates (quantitative mixed) or both exploratory and confirmatory where there is some equality of the quantitative and qualitative components (pure mixed). (Pluye et al., 2009, p. 532)</td>
</tr>
<tr>
<td>Realist review</td>
<td>Realist review is a relatively new strategy for synthesizing research that has an explanatory rather than judgmental focus. It seeks to unpack the mechanism of how complex programs work (or why they fail) in particular contexts/settings (Pawson et al., 2005, p. 21). It is not a method or formula, but a logic of enquiry that is inherently pluralist and flexible, embracing both qualitative and quantitative, formative and summative, prospective and retrospective, and so on (Pawson et al., 2005, p. 32)</td>
<td>The realist approach has no particular preference for either quantitative or qualitative methods. It sees merit in multiple methods, marrying the quantitative and qualitative, so that both the processes and impacts of interventions may be investigated (Pawson et al., 2005, p. 22)</td>
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### Table 2


<table>
<thead>
<tr>
<th>Presented framework</th>
<th>Proposed synthesis approach</th>
</tr>
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</table>
| Integrative review (Whittemore & Knafl, 2005)           | Describes successive stages:  
1. Problem identification stage  
2. Literature search stage  
3. Data evaluation stage  
4. Data analysis stage  
   - Data reduction  
   - Data comparison  
   - Conclusion drawing  
   - Verification  
5. Presentation stage                                                                                                                                                                                                                                                                                 |
| Meta-needs assessment (Gaber, 2000, pp. 141-142)        | Describes successive stages:  
1. Problem formulation  
2. Gather relevant documents  
3. Evaluation of collected data  
   - Content analysis  
4. Analysis of collected data  
   - Comparing and contrasting  
   - Statistical techniques  
   - Narrative procedure  
   - Vote counting                                                                                                                                                                                                                                                                                     |
| Mixed methods synthesis (Harden & Thomas, 2005, pp. 262-264) | Describes successive stages:  
1. Consultation, scoping, mapping  
2. Focused review question  
3. Quantitative synthesis of trials  
4. Qualitative synthesis of view studies  
5. Mixed methods synthesis of all studies (trials and view studies) employing both qualitative and statistical analysis                                                                                                                                                                                                                                      |
| Mixed research synthesis (Sandelowski et al., 2006, pp. 34-37) | Describes different designs for mixed research synthesis studies:  
- Segregated design (first qualitative synthesis of one group of findings and quantitative synthesis of another group of findings; afterwards mixed research synthesis synthesizing the two separate synthesis products)  
- Integrated design (retrieval of empirical qualitative, quantitative, or primary mixed methods studies, followed by a single mixed methods analysis of findings, with an analytic emphasis on transforming findings to be combined, e.g. by qualitizing all data)  
- Contingent design (the results of synthesizing the findings in one group of studies to answer one research question determine the second group of studies, that will be retrieved and analyzed to answer a second research question, the results of which may lead to the analysis of a third group of studies retrieved to answer yet another research question, and so on)  

| Mixed studies review (Pluye et al., 2009, p. 532) | Describes ways for integrating data in mixed studies reviews:  
- The production of mixed studies reviews involves moving back and forth between the different types of evidence in an iterative process: the production of mixed evidence can be conceived as loops between qualitative evidence and quantitative evidence  
- Three types of stances refer to the integration of qualitative and quantitative data or results: assimilation, complementarity, and divergence (see also Teddlie & Tashakkori, 2003).                                                                 |
| Realist review (Pawson et al., 2005, p. 24)           | Describes successive stages:  
1. Clarify scope  
2. Search for evidence  
3. Appraise primary studies and extract data  
4. Synthesize evidence and draw conclusions (e.g., use contradictory evidence to generate insights about the influence of context; present conclusions as a series of contextualized decision points of the general format ‘If A, then B’ or ‘In the case of C, D is unlikely to work’)  
5. Disseminate, implement, and evaluate |
The mixing of qualitative and quantitative research at the synthesis level differs from the mixing of qualitative and quantitative research at the primary study level concerning three major issues. First of all, the raw data studied in a primary level article are most often directly collected from multiple research participants by the researcher himself or herself. A primary level researcher gathers the raw data by, for example, observing or interviewing these participants. Sometimes only one individual is studied (e.g., in single-case experimental and case study research), but, most often, multiple persons are studied and data from all these participants are collected and analyzed and reported in the final research article. A researcher conducting a primary level mixed methods study can usually freely choose what qualitative and quantitative data he or she collects from the participants in order to answer the posed research question. Accordingly, he or she can personally decide whether qualitative or quantitative (or both) data are dominant in the mixed methods study (e.g., see Creswell, 2003; Morgan, 1998).

The raw data studied when undertaking a mixed methods research synthesis are the data published in primary research reports included in the synthesis. Because researchers undertaking the synthesis only rely on secondary sources (i.e., the data published in primary research reports are collected by the authors of these reports, and not by the researcher undertaking this synthesis), they are limited to the study of the data that are reported in those primary research reports. They do not have the opportunity to collect (additional) raw data from the research participants themselves. So, researchers undertaking a mixed methods research synthesis are restricted to study the available primary level articles on the research topic, sometimes reporting on only pieces of the collected qualitative and quantitative raw data material.

A second difference between primary level and synthesis level studies concerns the implementation of the research steps that are included in a research study. When conducting a systematic review, the following steps should be followed: (a) framing the research questions and the purposes of the study at hand, (b) choosing a suitable research design and method in accordance with the posed research questions, (c) writing up the review protocol and accordingly systematically searching the literature for relevant evidence, (d) systematically extracting and evaluating the collected data, (e) analyzing and interpreting the data, and (f) discussing and reporting the research findings in order to communicate them to an audience (Heyvaert, Maes, & Ongena, 2011). A primary level study especially differs from a review concerning two steps. First, the development of a review protocol and the literature search in a review differs substantially from and requires a very different kind of expertise compared to the sampling phase in a primary level study. Second, the data extraction and critical appraisal phase in a review and the data collection phase in a primary level study also require rather distinct and specific research skills.

Third, authors of a primary level study can apprehend greater detail of a particular context that is studied and can stay closer to this context when writing up the study’s findings, whereas researchers carrying out a synthesis are forced to offer up parts of the rich contextual information that is provided in the included primary level reports in order to summarize the collected body of research.

When poring over the retrieved frameworks on mixing qualitative and quantitative methods at the synthesis level (Tables 1 and 2), we noticed two different strands of suggestions for terminology in this domain. On the one hand, there are authors who discuss mixed methods research at the synthesis level when simply integrating qualitative and quantitative (and sometimes also mixed) primary studies. For them, it seems like the applied research approach does not necessarily have to contain qualitative and quantitative synthesis techniques in order to describe such a meta-study as a mixed methods study. Frameworks that could inspire mixed methods research syntheses that belong to this group are integrative review (Whittemore & Knafl, 2005), mixed research synthesis (Sandelowski et al., 2006), mixed studies review (Pluye et al., 2009), and realist review (Pawson et al., 2005). Because these definitions only apply to the integration of qualitative and quantitative primary studies, and do not include guidelines on the applied research approaches, an exclusive narrative review incorporating qualitative and quantitative primary studies can, for example, be called a mixed studies review. These frameworks do not exclude the mixing of qualitative and quantitative synthesis techniques; they simply do not demand a mixed methods research synthesis to combine multiple synthesis techniques. Recently carried out mixed methods review examples integrating results from qualitative as well as quantitative (and sometimes also mixed) primary studies are Bryon, Gastmans, and Dierckx de Casterlé (2008); Javanparast et al. (2010); and Whittemore (2005).

In addition, there exist several techniques for synthesizing data from both qualitative and quantitative primary studies through quantitizing (i.e., numerically translating, transforming, or converting qualitative data into quantitative data; Sandelowski, Voils, & Knafl, 2009) qualitative data and quantitizing (i.e., transforming quantitative data into data that can be analyzed qualitatively;
Tashakkori & Teddlie, 1998) quantitative data (Evans & Fitzgerald, 2002; Greenhalgh et al., 2005; Mays et al., 2005; Roberts, Dixon-Woods, Fitzpatrick, Abrams, & Jones, 2002). Because the studies using these quantizing and qualitizing techniques only apply to quantitative and qualitative methods, respectively, to synthesize the gathered qualitative and quantitative data, they, as well, can be placed into this first strand.

On the other hand, there are authors who describe mixed methods research at the synthesis level when integrating qualitative and quantitative primary studies through the application of qualitative and quantitative synthesis techniques. For example, Harden and Thomas (2005) described a synthesis employing both qualitative and statistical analysis techniques when combining evidence discussed in qualitative and quantitative primary articles as a mixed methods synthesis. Gaber (2000) described a meta-needs assessment approach as based on meta-analysis and mixed methods research strategies (triangulation). Recently carried out mixed methods review examples integrating data from qualitative and quantitative studies through applying qualitative and quantitative synthesis techniques are Alise and Teddlie (2010); Caffrey, Fuchs, and Fuchs (2008); Thomas et al. (2004); and Voils et al. (2008).

Analogous to a typology of primary mixed methods studies (Onwuegbuzie & Johnson, 2004), we picture these recent suggestions to define and to implement mixed methods research syntheses on a continuum going from not mixed, to partially mixed, to fully mixed methods. Within the originally primary level typology, fully mixed methods designs represent the highest degree of mixing research methods and research paradigm characteristics, because they use both qualitative and quantitative research elements concerning some of the following four components: the research objective; the type of data and operations; the type of analysis; and the type of inference (Leech & Onwuegbuzie, 2009). Accordingly, at the synthesis level, we could position authors who discuss mixed methods research syntheses when only integrating qualitative and quantitative primary studies at a partially mixed position, whereas placing authors applying this term when integrating qualitative and quantitative primary studies through the application of qualitative and quantitative synthesis techniques closer to the fully mixed position. Not mixed research syntheses apply a mono-method qualitative or quantitative approach (see examples discussed in the introduction).

Mixed Methods Research at the Synthesis level: Possibilities

When reading the retrieved mixed methods research syntheses, we noted several possible advantages concerning the combining of multiple primary level findings and the mixing of diverse synthesis techniques. Many domains of research contain quantitative as well as qualitative research studies. For example, the domain of educational research contains many experimental, quasi-experimental, and correlational studies that are based on numbers and measurements, as well as case studies and action research studies that are grounded on narrative descriptions and observations. Due to the inclusion of qualitative and quantitative primary level findings within a single research synthesis, a larger amount of data concerning one phenomenon of interest can be collected for interpretation, in comparison to a mono-method synthesis relying on only one data type. Additionally, in comparison, a more diverse range of complementary questions on a phenomenon can be studied within a single synthesis. Complex research questions can be approached from different perspectives, resulting in possibly more exhaustive and more refined answers in comparison to mono-method syntheses. For instance, regarding educational intervention research, a mixed methods research synthesis has the potential to answer multiple aspects of the question what is it about this kind of intervention that works, for whom, in what circumstances, in what respects, and why? (Pawson et al., 2005).

The mixing of qualitative and quantitative synthesis techniques can additionally offer multiple opportunities: adding confidence in research data when different synthesis methods arrive at the same conclusions, revealing and developing challenging or integrating theories by comparing and combining the inferences that result from the diverse synthesis methods, and providing a clearer and more comprehensive understanding of a problem at hand by mixing synthesis methods with divergent and complementary data analysis techniques (Gelo et al., 2008; Greene, Caracelli, & Graham, 1989; Jick, 1979; Johnson & Onwuegbuzie, 2004; Morgan, 1998; O’Cathain, Murphy, & Nicholl, 2007; Onwuegbuzie & Johnson, 2006; Plano Clark, Creswell, O’Neil Green, & Shope, 2008; Risjord, Dunbar, & Moloney, 2002; Robins et al., 2008; Thurmond, 2001). Compensating existing weaknesses of one approach by the strengths of the other approach is an often enumerated advantage of mixing qualitative and quantitative methods that equally applies to primary level and synthesis studies (Onwuegbuzie & Johnson, 2006).
Most mixed methods research syntheses apply both to qualitative and quantitative methods in order to achieve convergent validity. However, when a mixed methods research synthesis involving divergent data sources leads to conflicting interpretations, the revealed discrepancies can be taken as a starting point to re-interrogate each dataset in a more profound way. Thus, the robustness of the synthesis can be enhanced, and in comparison to a mono-method synthesis, a more multifaceted and thoroughgoing knowledge of the studied phenomenon can be gained (Moffatt, White, Mackintosh, & Howel, 2006).

**Mixed Methods Research at the Synthesis level: Pitfalls**

Although the mixing of qualitative and quantitative primary level findings and synthesis techniques can hold multiple opportunities, we notice several possible challenges concerning the implementation of a mixed methods research synthesis when scanning the mixed methods literature. In comparison to mono-method syntheses (e.g., a quantitative meta-analysis), possible disadvantages of conducting a mixed methods research synthesis are the difficulty of dealing with a more voluminous and divergent amount of data (i.e., published qualitative, quantitative, and mixed methods primary level articles on the research topic); accordingly, the increased amount of time needed to conduct the systematic data collection and the data synthesis, and, consequently, the increased expense of conducting mixed methods research (Thurmond, 2001).

Furthermore, Bryman (2007) identified nine possible barriers to integrating qualitative and quantitative research, that apply to mixed methods research at the primary level as well as to mixed methods research at the synthesis level: (a) a mixed methods research team might end up writing up the quantitative and qualitative findings separately, addressing different audiences in different publications; (b) a mixed methods researcher might stress one set of findings because he or she has greater faith in that set of findings; (c) a mixed methods research study might be set up in such a way that makes it difficult for integration to arise; (d) in research teams with quantitative and qualitative specialists where one phase lags behind the other, there might be some pressure to publish the findings that are already available; (e) skill specialisms might hinder the integration of findings when research teams are composed of *purely* quantitative and *purely* qualitative specialists; (f) a research team might feel that one dataset turns out to be more intrinsically intriguing or outstanding than does the other, which can lead to inequalities in the priority and structuring of the write up; (g) publication issues might inhibit integration because of the tendency for some journals to stress either quantitative or qualitative research; (h) there exist few published studies that explicitly apply mixed methods research at the synthesis level, causing a problem of exemplars; and (i) there might exist ontological divides within the research team. Additionally, differences in epistemological stances within the research team might cause conflicts about the research design (O’Cathain, Murphy, & Nicholl, 2008; Thurmond, 2001). Early collaboration and frequent meetings with all team members, an ongoing willingness to negotiate emerging problems within the team, and the potential assistance of a third party to resolve remaining problems are fundamental for meeting the described challenges (Robins et al., 2008).

A final issue that can influence the accessibility of implementing a mixed methods research synthesis concerns the data analysis: applied within-method triangulation and between- or across-method triangulation can necessitate combining very divergent methods that seem incompatible, or at least difficult to combine to address shared research questions. However, some existing methodological pitfalls generated by the diversity between and within the mixed qualitative and quantitative methods could be unraveled by breakthroughs derived from analytical techniques that support integration (Bazeley, 2006, 2010; Greene, 2006). In addition, reading diverse mixed methods research syntheses describing multiple ways to compare, to contrast, to build on, or to embed one type of conclusion with the other in order to provide a fuller understanding of a phenomenon under study can inspire and activate researchers in diverse research domains to implement a multi-method instead of a mono-method synthesis.

**Summary and Conclusion**

Concerning mixed methods research, we notice that the possibilities of combining qualitative and quantitative methods at the synthesis level are barely studied and discussed, compared to the sizable amount of literature that has recently been written on mixing methods at the primary study level. Regarding different methods to systematically review research evidence, we likewise noticed that combining qualitative and quantitative methods at the synthesis level is only seldom undertaken, and that the vast majority of published reviews apply a mono-method qualitative (e.g., narrative review) or quantitative (e.g., meta-analysis) approach. However, there are many arguments for undertaking a mixed methods research synthesis, above all the prospect of a more complete and nuanced
understanding of a phenomenon under study by mixing multiple primary level findings and diverse synthesis techniques (see section Mixed Methods Research at the Synthesis level: Possibilities).

A problem created by the fact that the amount of published mixed methods research syntheses is limited, and that the knowledge base on this methodology is still confined, is the problem of exemplars. As Bryman (2007) concluded, the relative absence of exemplars makes it difficult for researchers to draw upon guidelines and best practice when it comes to combining findings in mixed methods research studies. This turns into a vicious circle: (a) there is a limited number of mixed methods research synthesis exemplars; (b) researchers intending to undertake a mixed methods research synthesis lack guidelines and exemplars on this methodology and, therefore, abandon this methodology, or researchers do not undertake a mixed methods research synthesis because they have never heard of this methodology and stick to mono-method synthesis practices; and (c) accordingly, the number of new mixed methods research synthesis exemplars remains limited; and so on. In order to fill this void and to break this vicious circle, the present paper intended to map recent developments in the field of mixing qualitative and quantitative methods at the synthesis level, presenting mixed methods research synthesis exemplars and frameworks in a structured manner.

In pursuance of achieving this aim, the present rapid review resulted in a systematic search for synthesis frameworks applying the principles of mixed methods research. Our search strategy included a search of three electronic databases, a hand search of two journals, and an additional search of the reference lists of all the identified relevant articles. We retrieved six synthesis frameworks applying the principles of mixed methods research, and described them in Tables 1 and 2. Additionally, we discussed the main differences between the mixing of qualitative and quantitative research at the primary study level and the mixing of qualitative and quantitative research at the synthesis level. When studying the six retrieved frameworks, we differentiated between two types of suggestions for undertaking a mixed methods research synthesis: (a) mixed methods research syntheses that simply integrate qualitative and quantitative (and sometimes also mixed) primary studies, without requiring the synthesis to involve qualitative and quantitative synthesis techniques; and (b) mixed methods research syntheses that require the integration of qualitative and quantitative primary studies, as well as the combined use of qualitative and quantitative synthesis techniques. Analogous to a typology of Onwuegbuzie and Johnson (2004), we classified these suggestions to define and to implement mixed methods research syntheses on a continuum going from not mixed, to partially mixed, to fully mixed methods, and provided exemplars for the different types of suggestions. By presenting different (groups of) synthesis frameworks applying the principles of mixed methods research and exemplars, we answered to the call of Bryman (2007), asking for a greater recognition of different approaches to integration in mixed methods investigations, and for greater attention to different generic forms that integration can take and the identification of examples for each category.

Furthermore, we provided an overview of possible advantages of undertaking a mixed methods research synthesis that can convince a researcher considering conducting such a synthesis and that can help him or her maximally to exploit the benefits of such a synthesis for advancing the knowledge base in the research domain. Mixing multiple primary level findings and diverse synthesis techniques can help researchers to increase the completeness, the versatility, the refinement, and the grounding of the resulting inferences. Used in an appropriate way, mixing qualitative and quantitative methods in a single synthesis can be a preferred option to acquire complementary findings and to strengthen research results (Jick, 1979; Thurmond, 2001). Additionally, we listed some possible drawbacks of undertaking a mixed methods research synthesis that should be considered when designing the protocol for a planned mixed methods research synthesis process. When a research topic and question at hand necessitate a thoroughgoing approach through the consulting and application of qualitative and quantitative data and synthesis techniques, we hope that future researchers are motivated to embark on a mixed methods journey, in which they might experience several of its above stated promises and potentials for educational research.

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Agenda for Researching Teaching (ART): A Visual Model and Research Questions

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In response to the dearth of research agendas that connect teacher education and teaching in the field and to the call for more programmatic research, the purpose of this paper is to present the Agenda for Researching Teaching (ART). The ART is a visual research agenda that spans the time from a teacher candidate learning to teach to impacting student achievement as a teacher. Furthermore, we include research questions based on the extant literature for researching teachers and teacher education. It is hoped that the model will assist researchers who investigate teachers, teacher education programs, and so forth, to focus their work in order to move forward teacher education pipelines, programs, and professional development opportunities.

The No Child Left Behind Act of 2001 encouraged policy makers, P-20 educators (i.e., term used to describe an integrated education system that extends from pre-school through higher education [Pitre, 2011]), and parents to focus on teacher effectiveness, with the goal of having a highly effective teacher in every classroom. More recently, the federal Race to the Top Program (2009) competition focused on state efforts to increase teacher effectiveness, including attention to the quality of teacher education programs. This concentration on teacher effectiveness has encouraged states to go even further by adopting laws that tie teacher effectiveness with student growth (e.g., Education Accountability Act of 2009; Educator Preparation Programs at Institutions of Higher Education Act of 2011; Ensuring Quality Instruction Through Educator Effectiveness Act of 2010). The goal of these federal and state laws and competitions in Colorado, for example, is to put significant added weight on the effectiveness of teachers to raise student achievement by using student growth on state assessments as performance evidence for teachers, schools, districts, and teacher preparation programs. As a result, how to produce effective teachers has become a critical area for research and, yet, interestingly, the term teacher effectiveness does not have an agreed upon definition (Neumann, 2010). Therefore, expanding systematic research focused on teacher effectiveness and the production of effective teachers is needed and important.

Feiman-Nemser (2008) stated that “becoming an accomplished [and effective] teacher happens over time across settings” (p. 697). Thus, it appears that the path to becoming an effective teacher takes time and has multiple components. For example, how to identify teacher candidates who have the potential to become effective teachers, how to train teachers to be effective, and what aspects of teaching make an effective teacher are only a few of these interconnected components. In order to understand fully how effective teachers are developed, these settings and lapsed time need to be considered. Furthermore, teaching and teacher education (i.e., the programs where the teachers learned to teach and were credentialled) have been divided in the past; yet, going forward they need to be considered together (Grossman & McDonald, 2008). In fact, Grossman and McDonald (2008) stated, researchers in the fields of both teaching and teacher education will need to begin to act as if they were indeed a unified field of inquiry… To move forward, the fields of research on teaching and teacher education need to develop more programmatic research that addresses a set of critical questions over time as well as develop a range of common tools and approaches.
Therefore, a research agenda that combines the research areas of who is becoming a teacher, teacher education programs, teacher preparedness, and teachers who are actively teaching is desperately needed.

Exploring the Extant Literature for Research Agendas

In order to assess the extant literature for agendas for researching who are becoming a teacher, teacher education programs, teacher preparedness, and teachers who are actively teaching, a search of the literature over the past 10 years was conducted. The following search string was used with the ERIC, EBSCO, and ProQuest search engines and was combined using the Boolean logical operator AND: teacher and research agenda. Articles were searched between the year 2001, when the No Child Left Behind Act (2001) was enacted, and the year 2011. The initial search in ERIC identified 205 articles in peer-reviewed journals; 98 in EBSCO; and 92 in ProQuest. The abstract from each article was read and it was determined if the article included information on research agendas for understanding who is becoming a teacher, teacher education programs, teacher preparedness, and teachers who are actively teaching for P-12 schools. Forty articles were identified for consideration. Nineteen of these articles did not address teacher preparation in the United States, and were, therefore, not included. The remaining 21 articles were read and organized by topic. As presented in Table 1, only one of the articles focused on teacher education in general (Digby & Avani, 2003), all others were content specific. The Digby and Avani (2003) article was focused on the National Board for Professional Teaching Standards (NBPTS) and the effect these standards might have on teacher education programs. The agenda outlined in their article focused on “(1) program design, (2) professional development, (3) personnel, and (4) student (P-16) learning and achievement” (p. 10).

Table 1

*Topics of Articles Identified as Including Agendas for Teacher Education*

<table>
<thead>
<tr>
<th>Topic</th>
<th>Citation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher Education Programs</td>
<td>Digby &amp; Avani (2003)</td>
</tr>
<tr>
<td>Christian Schools</td>
<td>Boerema (2011)</td>
</tr>
<tr>
<td>Rural Mathematics Education</td>
<td>Waters, Howley, &amp; Schultz (2008)</td>
</tr>
<tr>
<td>Science Education</td>
<td>Simmons et al. (2005)</td>
</tr>
<tr>
<td>Science Education in Elementary School</td>
<td>Zembal-Saul (2009)</td>
</tr>
<tr>
<td>Science Education with English Language Learners</td>
<td>Lee (2005)</td>
</tr>
<tr>
<td>Geoscience</td>
<td>Lewis &amp; Baker (2010)</td>
</tr>
<tr>
<td>Race, Ethnicity, and Culture in Music Education</td>
<td>Butler, Lind, &amp; McKoy (2007)</td>
</tr>
<tr>
<td>Teachers’ Electronic Portfolios</td>
<td>Carney (2006)</td>
</tr>
<tr>
<td>Physical Education</td>
<td>Haerens, Kirk, Cardon, &amp; De Bourdeaudhuij (2011)</td>
</tr>
<tr>
<td></td>
<td>Rovegno (2008)</td>
</tr>
<tr>
<td>Special Education Teachers</td>
<td>Sindelar, Brownell, &amp; Billingsley (2010)</td>
</tr>
<tr>
<td>Online Teacher Networks</td>
<td>Schlag, Farooq, Fusco, Schank, &amp; Dwyer (2009)</td>
</tr>
<tr>
<td>Online Teacher Professional Development</td>
<td>Dede, Ketelhut, Whitehouse, Breit, &amp; McCloskey (2009)</td>
</tr>
<tr>
<td>Curriculum and Decision Making</td>
<td>Kaniuka (2009)</td>
</tr>
<tr>
<td>Genre-based pedagogy</td>
<td>Gebhard &amp; Harman (2011)</td>
</tr>
<tr>
<td>Teaching with Technology</td>
<td>Thompson (2005)</td>
</tr>
<tr>
<td>Positive Behavior Support</td>
<td>McIntosh, Filter, Bennett, Ryan, &amp; Sugai (2009)</td>
</tr>
<tr>
<td>Technology and Reading Performance</td>
<td>Edyburn (2007)</td>
</tr>
<tr>
<td>Teacher Social and Emotional Competence</td>
<td>Jennings &amp; Greenberg (2009)</td>
</tr>
</tbody>
</table>
AGENDA FOR RESEARCHING TEACHING (ART): A VISUAL MODEL AND RESEARCH QUESTIONS

Other types of publications (e.g., books, websites) offer some opportunity to identify aspects of research agendas. These are not exhaustive, nor do they combine teacher education and teaching in the field. For example, Zeichner (2005) effectively demonstrates pertinent aspects for a research agenda for teacher education, but does not clearly outline an overarching agenda. The author highlights several aspects of research design and methodology, making recommendations for strengthening research in teacher education. Other recommendations are also outlined including items such as: using clear and consistent definitions of terms, developing programs of research, and conducting longitudinal studies, among others. In addition to these general recommendations for research content, design, and methodology, Zeichner (2005) identified several important issues or topics that need to be addressed, including research on teacher education curriculum, programs, students, graduates, and so forth. Zeichner’s (2005) outline of a research agenda is helpful, but it is difficult to sift through all of the information and cull the important themes needing further research. Furthermore, the focus of the agenda is only on teacher education—not teachers in the field. A summary of the entire book (Cochran-Smith & Zeichner, 2005) in which this chapter appears has been written and published by the American Educational Research Association (2005).

Another source that is helpful, but does not link teacher education and teaching in the field, is from the University of Florida. The faculty members there spent one and a half years developing a research agenda for teacher education. Their agenda is helpful, although it only focuses on policy and teachers in the field, with no mention of teacher education.

Thus, unfortunately, to date, a clear research agenda outlining the path from student to becoming an effective teacher is not readily available (Cochran-Smith & Fries, 2005). In fact, there has been relatively little teacher preparation research that examines the impact of teacher preparation components, pathways, or pedagogies on pupils’ learning…unfortunately, we found little research that attempted to make these links, or that explored the impact of curriculum and pedagogy on learning and practice. (Cochran-Smith & Fries, 2005, p. 62)

In response to the dearth of research agendas that connect teacher education and teaching in the field and to the call for more programmatic research (Grossman & McDonald, 2008), the purpose of this paper is to present the Agenda for Researching Teaching (ART), a visual research agenda that is comprehensive—from a teacher candidate learning to teach to impacting student achievement as a teacher. Furthermore, we include research questions based on the extant literature for researching teachers. It is hoped that the model will assist researchers who investigate teachers, teacher education programs, and so forth, to focus their work in order to move forward teacher education pipelines, programs, and professional development opportunities.

The Agenda for Researching Teaching (ART) and Themes that Emerged from Extant Research Questions

To assist researchers in conceptualizing research projects that connect teachers and teacher education and address the interconnected aspects of developing effective teachers, from being a teacher candidate to being a teacher in the field, the ART was created. Drawing from multiple sources, including Zeichner (2005), American Educational Research Association (2005), and the University of Florida (2002), the ART, presented in Figure 1, encompasses the entire trajectory of teachers’ careers, beginning with their own high school years (i.e., pipeline programs) and ultimately including the impact on student achievement in their own classrooms. To help researchers better understand the ART, each aspect of the ART briefly is described.

The top row of the ART, starting on the left, depicts the trajectory of a teacher candidate, and acknowledges four major periods: (a) a pipeline program, (b) before application to a teacher education program, (c) the teacher education program experience with admission and exit standards, and (d) becoming a certified teacher with students who are impacted by the ability and skills of the teacher. Pipeline programs are typically in high schools and focus on increasing the number of teachers of color (Villegas & Clewell, 1998). Before application to a teacher education program includes the background of the student (e.g., where the student received a bachelor’s degree, demographics of the student). The teacher education program encompasses all aspects of the program, including student experiences, faculty interactions, coursework, and so forth. Becoming a certified teacher includes aspects of the school where the teacher works, the amount of professional development to which the teacher might be exposed, and so forth.
Figure 1. Agenda for Researching Teaching (ART)

For each significant period in the journey to becoming a teacher, a box with the name of the event is included. The line from Pipeline Program to Before Application is dashed to show that not all students will be in a pipeline program. Additionally, the line from Certified Teacher to Students is dotted to show the impact from the teacher on the students. Finally, the line around Students is dotted to show that students are not a period in the overall journey; instead, the students provide an important measure of the teachers’ abilities (i.e., student achievement by using student growth on state assessments).

Below each of the significant events are arrows that lead to text boxes. These boxes include major areas of research, based on the extant literature, that might be of interest for the significant event. For example, under the significant event of becoming a certified teacher, are research areas such as teaching types/instructional methods, the principal’s assessment of the teacher, and so forth. Each item in these boxes is an important topic to consider when interested in developing a research study.

Finally, in the circle at the bottom are Issues to consider. These are items that were found in the extant literature that were overarching in the entire journey of becoming and being a teacher. For example, it is important for researchers who investigate teachers and teacher education programs
to define the terms they use, include a theoretical framework, and so forth. Lester (2005) described a theoretical framework as:

A theoretical framework guides research activities by its reliance on a formal theory; that is, a theory that has been developed by using an established, coherent explanation of certain sorts of phenomena and relationships. At the stage in the research process in which specific research questions are determined, these questions would be rephrased in terms of the formal theory that has been chosen. Then, relevant data are gathered, and the findings are used to support, extend, or modify the theory. (pp. 458-459)

Most importantly, it is desirable for researchers to consider conducting studies that are multi-institutional; including multiple institutions in research on teacher education programs is desperately needed because there are currently very few studies wherein the researchers contrast and/or compare teacher education programs. In order to understand fully the trajectory of a person going from a pipeline program, entering a teacher education program, becoming a teacher, and having an effect on student achievement, more research is needed comparing teachers from multiple programs so that there is a better understanding of effective features and components of teacher preparation programs and what it takes to become a good teacher.

To help understand how the ART applies to research, multiple research questions were identified in the extant literature. These included questions such as “What characterizes efficient and effective practice in initial preparation as measured by beginning teacher quality and retention?” (University of Florida, 2002, p. 1); “How are teachers with different demographic (i.e., race, ethnicity, social class background, gender, measures of academic performance, and personal qualities) and quality profiles prepared, where do they teach, and how long do they stay in teaching?” (Zeichner, 2005, p. 747); and What is the relationship “among teaching strategies used by teacher educators, the practices of beginning teachers, and the learning of pupils?” (American Education Research Association, 2005, p. 1). These are only a few examples from the many questions identified. To help readers understand the overarching themes present in the research questions, constant comparison analysis was conducted on the research questions. The themes are presented in Table 2 and are mapped onto the ART; thus, we grouped the themes based on the significant events. This list is not exhaustive, because there are many more research questions that could be investigated, which would generate more themes. It is hoped that this list will help researchers focus on areas that desperately need rigorous research, with particular attention to conducting studies capable of synthesizing multiple significant periods in the process of becoming an effective teacher.

**Conclusion**

Since the No Child Left Behind Act (2001) started the conversation regarding teacher effectiveness, research on teachers and teacher education programs has been increasing, but still more is needed (Cochran-Smith & Fries, 2005). The purpose of this paper was to present the ART, a visual research agenda that includes all aspects of becoming a teacher; from a teacher candidate learning to teach to impacting student achievement as a teacher. Additionally, we included research questions based on the extant literature for researching teachers, so that these questions could stimulate researchers’ thinking about research studies that span the journey of becoming a teacher. A limitation of this paper is that we have not collected data, as yet, to support the agenda. It is hoped that the ART will assist researchers in developing individual and multiple studies (even with multiple research groups) that are situated within and across the major periods in the process of becoming a teacher.
Table 2

*Themes Extracted from Research Questions Drawn from Extant Literature*

<table>
<thead>
<tr>
<th>At Application</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Characteristics of students (e.g., ethnicity, type of undergraduate education)</td>
<td>Academic potential and performance of students (e.g., GPA, ACT and SAT, and teacher tests)</td>
</tr>
<tr>
<td>Personal qualities of preservice teachers (e.g., cultural sensitivity)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Program/Instruction</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Characteristics of instructors/supervisors in programs (e.g., permanent faculty, academic staff, and adjunct faculty, or doctoral students)</td>
<td>Characteristics of students (e.g., age at point of entry into program, financial support/need, years to completion of teacher certification, recruitment, student teaching, available mentoring)</td>
</tr>
<tr>
<td>Instruction types (e.g., at schools or university, online/in person, varied by type of students the teacher candidates will be teaching, cohort based/traditional)</td>
<td></td>
</tr>
<tr>
<td>Program quality</td>
<td>Program type (grow your own vs. other types of programs)</td>
</tr>
<tr>
<td>Methods courses as generic courses or subject specific</td>
<td></td>
</tr>
<tr>
<td>Integration of concepts (e.g., multiculturalism, technology) into courses vs. content specific courses</td>
<td></td>
</tr>
<tr>
<td>Classroom discussions including amount of knowledge, academic level, and differences based on make-up of the class (e.g., racial, SES, and ethnic identity of students)</td>
<td></td>
</tr>
<tr>
<td>Consistency between teacher educator’s teaching and what is advocated by program</td>
<td>Policy affecting content of program</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Exit Standards</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge, skills, and dispositions</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Certified Teacher</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Characteristics of teachers (e.g., “where they receive their teacher preparation, the components of this preparation, where they teach, how long they stay, and the quality of learning for their students”; Zeichner, 2005, p. 754)</td>
<td>Professional development</td>
</tr>
<tr>
<td>Beginning teacher quality in relation to preparation program</td>
<td>School districts’ influence on quality teaching</td>
</tr>
<tr>
<td>School districts’ influence on quality teaching</td>
<td>Policy affecting teacher certification; shortage of qualified teachers</td>
</tr>
<tr>
<td>Policy</td>
<td>Retention and attrition in relationship to preparation program</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Student Achievement</th>
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<tr>
<td>Program where teacher was prepared</td>
<td>Practices of teacher</td>
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<tr>
<td>Policy</td>
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<tr>
<td>Teacher characteristics (including number of minority teachers)</td>
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<table>
<thead>
<tr>
<th>Teachers’ Ability</th>
<th></th>
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<tbody>
<tr>
<td>Level of cultural diversity in program and teaching practice</td>
<td>Teaching English language learners</td>
</tr>
<tr>
<td>Teaching students with a spectrum of disabilities</td>
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</table>
The lead editors for this article were Anthony J. Onwuegbuzie and John R. Slate.

References


Reframing Student Affairs Leadership:  
An Analysis of Organizational Frames of Reference and Locus of Control

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Jerrid P. Freeman  
Fort Hays State University

Examined in this study were the identified frames of reference and locus of control used by 478 student affairs administrators. Administrator responses were examined to identify frames of reference most commonly used and their preference order. Locus of control most commonly used and the relationship between frames of reference and locus of control with administrator characteristics were also investigated. Study results revealed that administrators surveyed had a high preference for the Human Resource Frame of Reference and External Chance Locus of Control. Results also revealed a number of statistically significant correlations between preferred frames of reference, locus of control, and administrator characteristics. These results present new knowledge on the frames of reference and locus of control predominantly used by student affairs administrators in formulating their perceptions, attitudes, and ultimately behaviors and decisions.

Student affairs organizations can be very complex, unpredictable, and ambiguous (Dooris, Kelley, & Trainer, 2004; Freeman & Wilmes, 2009). The way in which student affairs administrators think about and evaluate organizational practices in such an environment has been described as ingrained and occurring unconsciously (Mabey, 2003). With many organizational practices occurring unconsciously, administrators often cause their own problems with their perceptions and attitudes. Perceptions and attitudes have been described as the tangibles that escape our attention even though they are a part of our daily organizational life shown through behavior and decisions (Chaffee & Tierney, 1988).

Through a quantitative study of administrators’ frames of reference and locus of control, the perceptions and attitudes that are present in the student affairs work place and that create organizational culture and behavior were addressed. Because these perceptions and attitudes of individuals help shape the organizational culture and behavior, unlocking these perceptions can increase administrators’ understanding of the culture, thereby increasing their effectiveness in the institution (Chaffee & Tierney, 1988; Tierney, 2008). The purpose of the present study was to identify the preferred frames of reference and locus of control from which student affairs administrators approach their work and to examine in more depth the relationship between frames of reference and locus of control. By examining the common frames of reference in student affairs, administrators will better understand linkages between the organizational culture and strategy in student affairs and, therefore, be more able to work in abstruse environments that are present in higher education (Chaffee & Tierney, 1988; Tierney, 2008). Administrators able to gain an understanding of organizational practices and cultural politics and their own perceptions and attitudes through understanding locus of control will be better equipped to effect positive change, rather than simply reacting unconsciously to circumstances that arise (Bolman & Deal, 2003; Goleman, McKee, & Boyatzis, 2002).
Literature Review

Organizational Interpretation in the Changing Student Affairs Environment

Although many colleges and universities share similar missions and curricula, how they communicate their identities to constituents may vary due to administrators’ perceptions at each institution. Organizations’ culture can have different personalities while still sharing much in common (Morgan, 2007). Organizational culture has been described as existing through administrators’ interpretations of historical and symbolic forms within the organization and as grounded in shared assumptions by members (Morgan, 2007). These interpretations and assumptions have been described as taken for granted and identified through stories, norms, and institutional ideology emerging from individuals within organizations (Tierney, 2008). Through such organizational changes come new interpretations of the organization by its members. In order to align an organization with its environment, administrators must understand the organization as complex and ever-changing and then identify the frames of reference by which they make decisions. After this recognition and awareness, administrators can utilize an organizational change process to achieve a closer alignment between organization and environment (Tierney, 2008). With administrator perceptions and interpretations constantly evolving, the need to gain awareness of the contexts surrounding decision making becomes increasingly important.

Frames of Reference for Work in Student Affairs Organizations

Broudy (1981) believed that the highest order of learning involved the development of avenues to frame and provide meaning. Most administrators are able to rely effectively on the use of multiple frames of reference. By using multiple frames, individuals increase their ability to express a heightened intuition, understand human dynamics, and improve their decision-making abilities (Broudy, 1981). Bolman and Deal (1997, 2003) outlined four frames of reference (i.e., structural, human resource, political, and symbolic). These frames of reference can be utilized by leadership within higher education institutions to understand and react to organizational issues better (Berquist, 1992; Birnbaum, 1992). Others who have used this model to describe complex organizational environments include Berquist (1992), Birnbaum (1992), Marsick, Volpe, and Watkins (1999), and Williams and Deal (2003).

The four frames of reference can be used to understand organizational culture and behavior from various institutional and constituent perspectives.

Structural frame. The structural frame has been described as emphasizing goals, controls, and efficiency (Bolman & Deal, 1997, 2003; Sample & Yopp, 2004). In the structural frame, the assumption is made that effective organizations will have clearly defined missions and goals; specific assigned work duties and groups; and associated policies and procedures that provide guidance. Administrators who value the structural frame of reference rely on data for decisions, keep an eye on resources, and use policies and procedures for the resolution of problems that occur in organizations (Bolman & Deal, 1997; Sample & Yopp, 2004). Those administrators who think from the structural frame believe in data analysis, focus on profits, and resolve organizational problems with new policies and restructuring. An imperative for the structural frame is the achievement of balance between internal control and environmental constraints (Sample & Yopp, 2004).

Human resource frame. Consistent with the human resource frame of reference is the notion that organizations are made up of individuals who have needs, feelings, predispositions, and prejudices. Accordingly, these individuals have preferences, exhibit personal strengths, and could demonstrate an unwillingness to change (Sample & Yopp, 2004). Effectiveness within the human resource frame requires well-designed organizations that value and embrace their employees’ abilities to complete a job while feeling good about themselves and their organization in the process, thereby enhancing self-esteem and confidence. Administrators who use the human resource frame of reference tend to lead through facilitation and empowerment of their employees (Bolman & Deal, 1997, 2003; Sample & Yopp, 2004). Satisfaction and meaning at work for employees has been described as the key imperative for this frame of reference (Sample & Yopp, 2004).

Political frame. Student affairs administrators have been described as having a deep ambivalence and discomfort for the concepts and practice of politics in their work (Love & Estanek, 2004). Politics is recognized as a reality of organizational life and a naturally occurring phenomenon that administrators do not want to discuss. Leadership and politics appear to be at odds when, as an aggregate, student affairs professionals display avoidant behaviors when dealing with uncomfortable issues. The separation of leadership and politics has been highlighted as a major area of concern in the student affairs profession (Love & Estanek, 2004). Common instances where politics arises within student affairs work include, “the political issues of decision making, allocating resources, values,
determining direction, community activity, and social interaction [that] inform a more complex view of leadership” (Love & Estanek, 2004, p. 31). From a political frame of reference an administrator can see where competition exists for resources and power within the organization. Such competition often creates conflict among organizational members. Those administrators who use the political frame of reference might use bargaining, compromise, networking, and even coercion as tactics in their work within the organization (Sample & Yopp, 2004).

Symbolic frame. Symbolic administrators have been described as using symbols to capture the attention of others within the organization and for framing the experiences of those administrators within the organization (Love & Estanek, 2004). Love and Estanek (2004) stated the following: “Symbolic leaders discover (or uncover) and communicate a vision, and they do this through telling stories” (50). Student affairs administrators try to frame what is expected from a college experience. According to Sample and Yopp (2004),

The symbolic frame looks beyond assumptions of purely rational behavior and views organizations as tribes, theater, or carnivals. Organizations are cultures that are influenced as much by rituals, ceremonies, stories, heroes, and myth as by rules, human relations, or politics. In this context, organizations are like the theater. (p. 149)

In the symbolic frame of reference, actors are said to play out a drama within an organization, whereas those actors outside the organization (audiences) form impressions based on their observations of what is occurring on stage. Change has been determined to be promoted through the use of symbols, myths, and metaphors for the use of inspiring organizational members (Sample & Yopp, 2004). Architecture, ceremonies, rites, and rituals are also important symbols to the culture of higher education (Love & Estanek, 2004).

The Use of a Multiple Frames Approach for Work in Student Affairs Organizations

Administrators gain greater understanding and perspective from viewing events and incidents through multiple frames of reference. This perspective allows them to be better equipped to understand organizational culture and to influence the organization (Mabey, 2003). Mabey stated that, “managers habitually adopt one, or at best two, of these frames” (p. 432). According to Mabey (2003), “Student affairs professionals need to rid themselves of the myth that when they have an idea they are being reasonable (and not self-interested), but when others disagree with them or choose another course of action, those people” (p. 33) are wrong or playing political games. The contingency-situational approaches to leadership (Kouzes & Posner, 2002) define the need for different behaviors and strategies of leadership to be implemented depending on the situations or expectations that dictate who should emerge as a leader for a particular group. This approach requires the knowledge of an individual frame reference perspective and the ability to use multiple frames of reference to be an effective leader/manager (Love & Estanek, 2004).

Locus of Control

Locus of control has been documented to be related to a number of variables in organizational settings. These variables include motivation, performance, satisfaction, and turnover (Spector, 1982). The term internal locus of control has been used to describe administrators who believe that their own behavior determines any positive reinforcements they receive. These administrators feel they are in control of their own lives and, therefore, take responsibility for their own behavior (Pareek, 1992; Tarver, Canada, & Lim, 1999). Administrators who view themselves as controlled by external forces are said to possess an external locus of control. External locus of control can be influenced by others within or outside the organization (external-others) or situations of chance or luck (external-chance) (Tarver et al., 1999). Administrators with an internal locus of control have demonstrated more motivation, have higher performance on the job, experience higher job satisfaction, and have lower attrition rates when compared to those administrators with an external locus of control (Tarver et al., 1999).

Research Questions Guiding This Study

The following research questions were developed after a review of existing literature in the areas of higher education and management. Each question was used in the design of study methodology as well as the reporting of the results and discussion sections that follow. They are: (a) What frames of reference are in use by student affairs administrators?; (b) What locus of control are in use by student affairs administrators?; and (c) What is the relationship between frames of reference and locus of control for student affairs administrators based on specific characteristics?

Method

Participants

Administrators in the study included 478 current members of Region IV-West and Region III of the
National Association of Student Personnel Administrators. These administrators were chosen to serve because they were an accessible population (Frankel & Wallen, 2003). The sample represented student affairs administrators working at colleges and universities in 21 states.

All current members of Region III and Region IV-West who were determined to have usable email addresses, obtained through the NASPA membership directory, were asked to participate in the study. Of the 3,315 members of NASPA determined to meet the above criteria, 3,086 had usable email addresses and were sent a message with the survey link. Of the 3,086 administrators who were sent messages, 478 completed usable surveys for a response rate of 15.5%. Administrators who participated in the study represented a variety of types of institutions including public, private sectarian, and private non-sectarian schools. Administrators also represented both 2-year and 4-year institutions and many functional areas of employment.

Among administrators who participated, females comprised the largest group at 58.8%, with males at 41.2%. The largest group by race and/or ethnicity was White at 82.6%, and the lowest was Asian and multicultural, both at 1.7%. Most administrators (52.9%) had completed a master’s degree, and 37.4% reported they had completed a doctorate (See Table I for complete demographic data.)

### Table I

**Background and Employment Characteristics of Student Affairs Administrators (n = 478)**

<table>
<thead>
<tr>
<th>Demographic</th>
<th>%</th>
<th>Demographic</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td><strong>Position Title</strong></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>58.8</td>
<td>Advisor/Counselor</td>
<td>5.2</td>
</tr>
<tr>
<td>Male</td>
<td>41.2</td>
<td>Program Coordinator</td>
<td>7.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Assistant Director</td>
<td>9.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Associate Director</td>
<td>5.2</td>
</tr>
<tr>
<td><strong>Race</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>82.6</td>
<td>Director</td>
<td>23.8</td>
</tr>
<tr>
<td>African American</td>
<td>8.2</td>
<td>Assistant/Associate Dean</td>
<td>7.3</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>4.6</td>
<td>Dean</td>
<td>5.6</td>
</tr>
<tr>
<td>Asian Pacific Islander</td>
<td>1.7</td>
<td>Assistant/Associate Vice President</td>
<td>11.1</td>
</tr>
<tr>
<td>Multicultural</td>
<td>1.7</td>
<td>Vice President</td>
<td>11.5</td>
</tr>
<tr>
<td>Other</td>
<td>1.3</td>
<td>Faculty</td>
<td>2.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other</td>
<td>10.1</td>
</tr>
<tr>
<td><strong>Highest Educational Level</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Masters</td>
<td>52.9</td>
<td>4 Year Public</td>
<td>68.2</td>
</tr>
<tr>
<td>Doctorate</td>
<td>37.4</td>
<td>4 Year Private</td>
<td>24.5</td>
</tr>
<tr>
<td>Bachelors</td>
<td>4.2</td>
<td>2 Year Public</td>
<td>5.0</td>
</tr>
<tr>
<td>Other</td>
<td>5.4</td>
<td>2 Year Private</td>
<td>0.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other</td>
<td>1.7</td>
</tr>
<tr>
<td><strong>Years at Institution</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0—5</td>
<td>48.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6—10</td>
<td>20.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11—15</td>
<td>11.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16—20</td>
<td>7.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21—25</td>
<td>5.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26+</td>
<td>6.1</td>
<td></td>
<td></td>
</tr>
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<td><strong>Position Category</strong></td>
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<td><strong>Institutional Size</strong></td>
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<tr>
<td>Entry Level</td>
<td>12.1</td>
<td>0—999</td>
<td>2.9</td>
</tr>
<tr>
<td>Mid Level</td>
<td>38.3</td>
<td>1,000—1,999</td>
<td>7.1</td>
</tr>
<tr>
<td>Senior Level</td>
<td>21.1</td>
<td>2,000—3,499</td>
<td>9.0</td>
</tr>
<tr>
<td>Senior SA Officer</td>
<td>19.9</td>
<td>3,500—4,999</td>
<td>5.0</td>
</tr>
<tr>
<td>Faculty Member</td>
<td>3.1</td>
<td>5,000—7,999</td>
<td>9.0</td>
</tr>
<tr>
<td>Graduate Student</td>
<td>4.6</td>
<td>8,000—10,999</td>
<td>7.3</td>
</tr>
<tr>
<td>Other</td>
<td>0.9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The highest percentage (22.8%) of administrators reported working in the area of Residence Life. Other participants reported working in the following areas: Admissions, Advising, Career Planning and Placement, Disabled Student Services, Greek Life, International Students and Scholars, Judicial Affairs, Leadership Development Programming, Multicultural Center, Orientation, Service Learning/Community Service, and Student Union/Activities.

**Instruments**

The first of the two instruments used in the study was the Organizational Frames Analysis Questionnaire (OFAQ). The OFAQ comprises the following 10 management preferences: planning, decision making, reorganizing, evaluating, conflict, goal setting, communication, meetings, motivation, and leadership, and the participants’ scores on the management preferences identified the participants’ preferred organizational frame of reference (Sample & Yopp, 2004). Four alternative statements, relating to each management preference were developed by survey authors that represent each of the organizational frames of reference. Administrators ranked the statements on a 10-point scale, indicating those statements that were the most and least like them. Frequencies were totaled for the 10 management preference scores and these scores identified the preference order for the four frames of reference (i.e., structural, human resources, political, and symbolic) (Sample & Yopp, 2004). Higher scores for each of the four frames indicated a relative preference for the particular frame, whereas lower scores indicated a lower preference for the particular frame.

Sample and Yopp (2004) computed both internal consistency (Cronbach’s alpha) and test-retest reliability. The Pearson r coefficient was calculated in this instance to establish score reliability. The summed scores for each of the four constructs were correlated for two administrations of the OFAQ. Reported alpha coefficients ranged from a low of .68 to a high of .78. Reported Pearson r coefficients for the two administrations of the OFAQ ranged from .73 to .82. Nunnally (1978) indicated .70 to be an acceptable measure for test-retest reliability, and noted that lower thresholds have been accepted and reported in the literature.

The second survey used, the Locus of Control Inventory, developed by Pareek (1992), consisted of 30 statements designed to represent how individuals view ways in which events happen in their organizations. Administrators read each statement and indicated the extent to which they agreed or disagreed on a 5-point Likert scale. Choices included strongly agree, generally agree, agree somewhat, agree only slightly, and seldom or never agree. Scores were then totaled on a scoring matrix that was transferred to one of three columns (i.e., Internal Locus of Control, External-Others Locus of Control, and External-Chance Locus of Control). At the conclusion of the survey, administrators were given their preference results for the three types of locus of control, with additional interpretative data based on their scores in each of the three types. The interpretive data are detailed further in the results section.

**Procedure**

Administrators were asked to complete the survey instrument online. This method of survey completion was designed to maximize the response rate for the study (Sax, Gilmartin, & Bryant, 2003). Participants were sent an email that included a description of the study; Institutional Review Board approval was noted; implications of their participation were outlined; and their participation in the study was solicited. Those administrators who chose to complete the survey online accessed the survey instrument from a web address provided in the email. Administrators were given 3 weeks to complete the survey. A reminder email was sent at the beginning of both the second and third week.

**Data Analysis**

The statistical analysis program, *Statistical Package for the Social Sciences* (SPSS) (2004), Version 13, was used for the analysis of data. Descriptive statistics (i.e., mean, median, mode, frequencies) were calculated for all study participants and variables to establish a demographic profile of the administrators who participated in the study. Product-moment (Pearson r) correlation coefficients on the means for scores on the OFAQ and Locus of Control Inventory with administrator characteristics were computed for statistical significance between study variables. The Pearson r correlation helps to determine the extent that two variables are proportional to one another (StatSoft, Inc., 2011). If the $r < .05$ level of significance or above was reached, it was concluded that a statistically significant relationship existed between the particular frame of reference, locus of control, and administrator characteristics (i.e., gender, race, highest educational level, position title, position category, institutional size, institutional type, and years at institution).

**Results**

Administrator responses indicated that most administrators had a preference for the human resource frame. Three hundred and seven
Participants (67.5%) chose the human resource frame; 106 (23.3%) chose the structural frame; 34 (7.5%) chose the symbolic frame; and 8 (1.8%) chose the political frame. Administrator responses were also examined to determine the preference order among each of the organizational frames of reference. The highest preference order of administrators was (a) human resource, (b) structural, (c) symbolic, and (d) political at 28.6%, whereas the second highest preference order was: (a) human resource, (b) symbolic, (c) structural, and (d) political at 25.1%. Full results for preference order of administrator responses are reported in Table 2.

Preferred Locus of Control in Use by Student Affairs Administrators

Administrator responses indicated that 451 (96.6%) chose external chance locus of control; 8 (1.7%) chose internal locus of control; and 8 (1.7%) chose external others locus of control. Results for each of the locus of control factors were further examined to determine the frequency with which each external (chance and others) and internal locus of control was chosen. Not all administrator scores fell within each sub-component of the Locus of Control Inventory, resulting in less than 100% reporting for each sub-component below. For external-chance locus of control, all participants scored above 10. Pareek (1992) stated,

A person with an external-chance orientation believes that his or her future is controlled primarily by luck or chance. To an extent, the lower the EC score, the better, because a person with a low EC orientation is more likely to utilize his or her potential in trying to achieve goals. However, a score of 10 or below may reflect problems in coping with frustrations when unforeseen factors prevent achievement of goals. (p. 147)

For internal locus of control, 2.51% scored 33 or above, indicating a very high internal tendency. According to Pareek (1992),

It represents self-confidence in a person’s ability to control what happens to him or her in an organization. However, this person may sometimes be unrealistic in assessing difficulties and may ascribe personal failure to situations over which he or she had no control (p. 147)

For the 5.23% of participants who scored between 29 and 32, they demonstrated a high trust in their ability and effort and are more likely to lead to an effective use of these attributes. For the 35.56% who scored between 18 and 21, they demonstrated their individual lack of self-trust and need to examine their strengths by using feedback from others. For the 28.66% who scored 17 or less, they demonstrated little self-confidence (Pareek, 1992).

For external-others locus of control, for the participants, 57.32% scored 30 or higher, indicating a dysfunctional dependence on other people for achieving one’s goals; 36.40% scored 21 to 29, reflecting a realistic dependence on supervisors, peers and subordinates; 3.35% scored 17 to 20, demonstrating an independent orientation; and 2.93% scored below 17, indicating counter dependence (Pareek, 1992).

Scatterplots were examined to check the assumptions underlying the use of Product-moment (Pearson r) correlation coefficients on the means for scores on the OFAQ and Locus of Control Inventory with administrator characteristics. The scatter plot for the variables of frame of reference and title revealed a non-linear trend with a positive association among the plots. This scatter plot also showed a non-constant scatter and a weak relationship among the plots. When examining the scatter plots for frame of reference with locus of control; title with locus of control; and race with locus of control; a linear trend was discovered with a positive association among the plots. These scatter plots also showed constant scatter and a strong relationship among the plots.

After checking the assumptions underlying the use of the correlational statistical analysis conducted, several positive and negative statistically significant correlations at the $p < .05$ and above were discovered for frames of reference, locus of control, and administrator characteristics. Positive significant correlations were revealed between frames of reference and position held, $r(n = 455) = .11, p = .04$; and locus of control and position held, $r(n = 468) = .11, p = .03$. Negative significant correlations were discovered between locus of control and race, $r(n = 468) = -.12, p = .03$; and locus of control and frames of reference, $r(n = 447) = -.09, p = .01$. All these statistically significant correlations represented a small effect size, using Cohen’s (1988) criteria.
Table 2

Preference Orders for Frames of Reference

<table>
<thead>
<tr>
<th>First Preference</th>
<th>Second Preference</th>
<th>Third Preference</th>
<th>Fourth Preference</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Resource</td>
<td>Structural</td>
<td>Symbolic</td>
<td>Political</td>
<td>28.60</td>
</tr>
<tr>
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<td>Symbolic</td>
<td>Structural</td>
<td>Political</td>
<td>25.10</td>
</tr>
<tr>
<td>Structural</td>
<td>Human Resource</td>
<td>Symbolic</td>
<td>Political</td>
<td>14.64</td>
</tr>
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<td>Human Resource</td>
<td>Structural</td>
<td>Political</td>
<td>Symbolic</td>
<td>3.77</td>
</tr>
<tr>
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<td>Symbolic</td>
<td>Human Resource</td>
<td>Political</td>
<td>3.35</td>
</tr>
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<td>Human Resource</td>
<td>Political</td>
<td>Symbolic</td>
<td>2.93</td>
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<td>Human Resource</td>
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<td>Political</td>
<td>2.09</td>
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<td>Human Resource</td>
<td>Political</td>
<td>1.46</td>
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<td>Symbolic</td>
<td>Political</td>
<td>Structural</td>
<td>1.26</td>
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<td>Political</td>
<td>Human Resource</td>
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<td>Symbolic</td>
<td>Political</td>
<td>Human Resource</td>
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<td>Political</td>
<td>Structural</td>
<td>Human Resource</td>
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<tr>
<td>Symbolic</td>
<td>Structural</td>
<td>Political</td>
<td>Human Resource</td>
<td>0.42</td>
</tr>
<tr>
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<td>Symbolic</td>
<td>Structural</td>
<td>Human Resource</td>
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<tr>
<td>Political</td>
<td>Structural</td>
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<td>Human Resource</td>
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</tr>
<tr>
<td>Symbolic</td>
<td>Human Resource</td>
<td>Political</td>
<td>Structural</td>
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<td>Structural</td>
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<td>Multiple Frames*</td>
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*administrators shared more than one preferred frame of reference

Discussion

Preferred Frames of Reference and Multiple Frames in Use by Student Affairs Administrators

The high selection of human resource as the predominant frame of reference appears logical after a review of the literature related to student affairs work. Administrators who prefer the human resource framework with others achieve results regardless of position within the organization (Love & Estanek, 2004). Their selection of this frame describes the collaborative spirit that is shared by many who work in student affairs. Study results indicated that the second highest preference was the structural frame. A structural frame orientation by student affairs administrators is becoming more important as most departments are required to have clearly defined missions and goals and have stringent policies and procedures that guide their work. With an increasing concern for accountability in student affairs and higher education (Bess & Dee, 2008; Freeman & Burgess, 2008), those administrators with a keen sense of the structural frame will be best prepared to use data in decision making and manage resources (Bolman & Deal, 1997, 2003; Sample & Yopp, 2004). With administrators in the present study indicating a preference for human resource and structural frames, they might possess attributes necessary to meet challenges identified by Kotter (1982) and Lynn (1987). For the human resource frame, these included “[the ability to] motivate, coordinate, and control large, diverse groups of subordinates; and use their personalities to best advantage,” (Bolman & Deal, 1997, p. 277); and for the structural frame, “[the ability to] keep on top of large, complex set of activities; set goals and policies under conditions of uncertainty; and attain intellectual grasp of policy issues” (Bolman & Deal, 1997, p. 277).

The lower preferences for both the symbolic and political frames of reference might present challenges for administrators in their work. Although the choice of these frames might not be natural frames of reference for the majority, those administrators who
work within student affairs administration would be wise to develop their abilities to consider the symbolic and political frames. Some situations require administrators to view issues through their least preferred frame of reference and failure to ask the right questions and understand the full context of a situation will result in undesired results for the administrator and institution (Boyle, 1995; Freeman & Patterson, 2006). Additionally, those administrators who develop their least preferred frame of reference might be better equipped to encounter the complexities and unpredictable nature of student affairs work in the future. Researchers (e.g., Broudy, 1981) have shown that a heightened intuition about frames of reference and the use of a multiple frames approach will improve administrators’ decision-making abilities. Regardless of intention, appropriately utilizing all four frames of reference when initiating large or small changes in an organization can be what makes the changes effective and long lasting for all internal and external constituents (Freeman & Wilmes, 2009).

The fact that the political frame of reference is rarely a frame of focus for administrators is also of concern. Only 1.8% of the participants have it as a preferred frame of reference and only 16.8% of the participants even utilized the political frame of reference in their top two frames of choice in looking at decision making. This notion is consistent with the literature (Love & Estanek, 2004). Failure to understand and make decisions that take into consideration political ramifications can negatively impact the administrator and the organization.

Preferred Locus of Control in Use by Student Affairs Administrators

Study results indicating participants’ preference for external chance locus of control were surprising. Because most administrators view themselves as educators who inherently believe in the ability of students to learn, to grow, and to change, it seemed logical they would have a preference for an internal locus of control. After reviewing the results indicating a negative statistically significant correlation between locus of control and frames of reference, it was postulated that administrators with a high preference for working with others and for others might forfeit some control in their work setting. They might also share control through collaborative work, which might shift their locus of control more externally. The often hierarchical and bureaucratic culture of higher education (Berger, 2000) might also be frustrating for administrators looking to make a difference in the lives of students. The culture of student affairs seems to influence the external locus of control for administrators. This possibility is an area in need of further discussion and review.

Due to the low internal locus of control from participants, 64.2% of administrators’ scores indicate a lack of trust and low self-confidence (Pareek, 1992). This lack of trust could easily result in internal and external constituents viewing administrators as indecisive or having an inability to effectively handle complexities. Due to the high external-others locus of control present in the participants, 57.3% had a dysfunctional dependence on others and only 39.8% had an independent orientation or healthy reliance on their supervisor (Pareek, 1992). This finding is important for supervisors and cannot be overlooked when supervising or leading staff in student affairs.

Researchers (e.g., Wang, Kick, Fraser, & Burns, 1999) have shown internal locus of control to be associated with increased self-motivation, higher academic performance, higher social maturity, and greater independence. Although these associated outcomes are not the only outcomes leading to advancement in the student affairs profession, an argument might be made that these are related to reaching higher position levels. On the other hand, external locus of control might affect occupational attainment and progression (Wang et al., 1999). Pareek (1992) noted in the locus of control inventory results, if administrators find they are externally or internally motivated, they need to ensure the level is healthy and not dysfunctional with supervisors and they have self-trust and confidence. One must know when it is appropriate and at what level to exhibit dependence and independence. Supervisors or mentors must develop a strong enough relationship with their staff or mentees to be able to have the honest conversations needed to assist in their development.

A negative statistically significant correlation was present between locus of control and race. A review of the literature on locus of control (Tashakkori & Thompson, 1990; Wagner & Hollenbeck, 2001; Wang et al., 1999) has uncovered concerns that arise out of cross-cultural differences based on individualism and collectivism. For example, some cultural groups emphasize a sense of personal responsibility that is promoted through the belief that personal behavior is individualistic and consistent with the norms and values of an individualistic national culture. Conversely, an emphasis on an external locus of control, through cultural collectivism, can result in a focus on social causes as the source of behavior rather than taking responsibility for their own beliefs, attitudes, and behavior (Wagner & Hollenbeck, 2001). Specifically, African Americans have been described as having greater perceived external control with
regard to cultural events and personal efficacy (Tashakkori & Thompson, 1990; Wang et al., 1999).

The Relationship between Frames of Reference and Locus of Control in Use by Student Affairs Administrators

Study results show evidence that administrators’ locus of control can exist independently of their preferred frames of reference. Both frames of reference and locus of control are internal and individual processes. Each individual administrator controls and influences his/her own thoughts and perceptions, and although a map cannot be developed to help these internal and individual processes, some guidelines can be established to help individuals be more confident in their use of frames and healthy in their internal and external locus of control. Utilizing the human resource frame of reference, which is a predominant strength in student affairs, to help build self-esteem and confidence (Bolman & Deal, 1997; Sample & Yopp, 2004) is important not only for students, but also for external-chance locus of control driven administrators. This use of the human resource frame of reference is important for the success of each administrator and, ultimately, the organization.

Study findings demonstrated low preference for internal locus of control and a higher preference for external locus of control, administrators should pay close attention to their preferred locus of control. Although a higher external locus of control is beneficial in a teamwork environment that is present within most student affairs organizations, an internal locus of control shows strong value for staff as they reach higher administrative levels. A dependence on external locus of control also can identify too little self-trust and confidence. Administrators must keep this dependence in mind when trying to influence their employees and organization most effectively. The more initiative, autonomy, and leadership expected of staff will require a greater inclination towards internal locus of control. In a more decentralized organization where a staff member follows detailed policies and procedures and has little room for flexibility, an external locus of control might be more warranted. This locus of control is important for supervisors to understand about their employees and also important for administrators to understand about themselves.

Because student affairs administrators as an aggregate have an uneasiness (Love & Estanek, 2004) with the political frame of reference, it could impact the participants’ response on the survey. The survey was self-perception based; participants might have not noted a use of the frame due to its negative connotation within the profession. If student affairs administrators have an aversion for the political frame of reference in a culture that relies heavily on politics, that also could increase the participants’ frustration with the environment and perhaps also lead to the expression of a heavy external locus of control. The participants might feel their ability to influence their environment is outside their realm of influence because of the politics. A greater use of the political frame of reference might help participants not only be more effective in decision making, but also develop a healthier balance of internal and external locus of control. These discussion points suggest the need for further research.

Limitations

Several limitations for the present study should be identified. A lower than anticipated response rate was achieved for the study. Six hundred and eight two participants (22.1%) started the survey, with 478 (15.49% response rate) completing the survey. The difference in response rate could be attributed to the length of the survey instruments and difficulty in understanding the rating matrix in the Organizational Frames of Analysis Questionnaire. Participants represented only members of NASPA in 21 states in the central United States. Results might have varied with different participants from different regions, not included in the study. Additionally, some planned data analysis was not feasible due to the common response of many participants on several variables (e.g., institutional type, functional area, gender, position level). The lack of analysis was due to the lack of differences among responses by all administrators (e.g., 67% chose human resource frame and 96.6% chose external-chance locus of control). Greater dispersion among participant responses would have allowed for more analysis among study variables. Even though the result identifying a high level of congruence among participants for both their preferred frames of reference and locus of control is a meaningful finding, it would be beneficial to have a much larger population to complete more data analysis based on participant characteristics. These results provide new information about the lens through which many student affairs administrators approach decision making in their work and their influence on outcomes.

Implications

The results of this study on preferred frames of reference and locus of control for student affairs administrators present several implications for practice. With knowledge of the preferred frames of reference and locus of control in use by administrators, those administrators within and outside of student affairs can better understand the

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perceptions and attitudes of these administrators. This knowledge aids individuals in understanding viewpoints and approaches to decision making that may or may not be congruent with their own. Student affairs administrators should continue to use their strong preferences for the human resource frame when working with constituents on all levels. This preference should serve administrators well in promoting personal and professional development with students and in collaborating with colleagues on an institutional and professional level. Despite administrators’ strengths, they should value the use of a multiple frames approach in their work. Through this approach, administrators are able to engage in their work with greater flexibility and understanding of multiple points of reference. Broudy (1981) found administrators who were able to rely on multiple frames of reference would have heightened intuition and improved decision-making abilities.

Several cultural concepts might influence the relationship between preferred frames of reference and locus of control. One explanation might be the tendency for administrators to move toward internal or external locus of control based on their own personal and professional backgrounds with regard to values, attitudes, motivation, and actions that have been formed since childhood (Wang et al., 1999). In the area of motivation, “people with an external locus of control might be induced to take responsibility for a variable if that variable…is seen as more controllable” (Weick, 2001, p. 326). This inducement could occur regardless of the preferred frames of reference for administrators, unless administrators are a part of an organization where collectivism reigns. In this scenario, conformity might be more present than internal and individualistic standards of behavior (Wang et al., 1999). Administrators should work to develop each of these frames of reference and locus of control to improve their ability to serve their organizations.

Through knowledge of preferred frames of reference and locus of control, student affairs supervisors can understand the lens through which their staff view situations and their influence on others and situations. This knowledge helps supervisors anticipate responses to situations and provides understanding when a new or different frame of reference or locus of control may be appropriate for addressing issues. Administrators who possess a knowledge of the preferred frames of reference and locus of control in use by others within their organizations can use this knowledge when engaged in the decision-making process. This knowledge will help administrators see issues through multiple lenses and help promote a more comprehensive decision-making process.

Supervisors should not make employment decisions based on preferred frames of reference or locus of control, their knowledge of these decisions after a new employee is hired might aid in their decisions of who should lead particular tasks, during a particular time, or for a particular purpose in the organization.

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References


Concerns, Use of Time, and the Intersections of Leadership:  
Case Study of Two Charter School Principals

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Louisiana State University

Approximately 4,900 public charter schools educate nearly 1.6 million students in the United States (National Alliance for Public Charter Schools, 2010). Although a fraction of the total school population (5.1%), the expectation is that the number of charter schools will continue to increase within the current policy environment (National Alliance for Public Charter Schools, 2010; Weitzel & Lubienski, 2010). Despite a 6.9% growth rate during the 2009-2010 academic year (National Alliance for Public Charter Schools, 2010), research about those persons who lead the day-to-day operations of these schools is limited (Campbell & Gross, 2008; Dressler, 2001).

As part of a multiple case study of charter school leadership, the researchers in this study examined 2 principals’ priorities and practices through their expressed concerns and use of time. Through an embedded case design and analysis, 6 themes surfaced from the principal interviews that occurred over the course of a school year—accountability, personnel, student-related issues, management issues, school promotions, and instructional issues and supervision—with issues of accountability permeating all other themes. Although comparison of these themes to charter principal research and general concepts of successful principal leadership indicates similarities, these charter principals’ myopic focus on state testing might have limited involvement in other elements of leadership both specific to charter schools and general successful school leadership.

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With the lack of research explicitly examining the work of charter principals, initial understanding of their roles and practices begins with a brief discussion of the traditional principalship. The work of the traditional school principal is complex and includes the managerial tasks necessary for effective school operations and leadership that support student learning (Hallinger & Snidvongs, 2008). Since the advent of the accountability movement, principals in traditional schools have increasingly been held responsible for school improvement and student achievement (Goldring, Huff, May, & Camburn, 2008; Goodwin, Cunningham, & Childress, 2003). Although limited, several researchers have examined the concerns of principals related to their roles in this accountability context and how principals address role expectations through the use of time (Camburn, Spillane, & Sebastain, 2010; Cooley & Shen, 2003; DiPaola & Tschanen-Moran, 2003; Farkas, Johnson, & Duffett, 2003; Goldring et al., 2008; Goodwin et al., 2003; Hines, Edmonson, & Holland, 2008; Horng, Klusik, & Loeb, 2009; Protheroe, 2008). Examinations of principal concerns and how they spend time in relationship to competing demands can provide insights into principal priorities and practice (Goldring et al., 2008). Principal concerns and use of time also can be compared to models of effective leadership allowing further insights into principal practice (Camburn et al., 2010).

Traditional principal concerns identified in the recent leadership include compliance with bureaucratic and legal issues, particularly related to students with disabilities; lack of authority and
funding to address mandates; student testing and accountability issues; developing and hiring competent teachers; and time to address instructional issues (Cooley & Shen, 2003; DiPaola & Tschanen-Moran, 2003; Farkas et al., 2003; Goodwin et al., 2003; Protheroe, 2008). The literature suggests principals spend the bulk of their time on management tasks rather than on leadership related to instruction (Camburn et al., 2010; Cooley & Shen, 2003; Goldring et al., 2008; Horng et al., 2009). In these studies, the majority of principals’ time was spent on administrative tasks related to students (discipline, administering testing, scheduling, discipline, and student activities), personnel issues (hiring, communicating, and problems solving), organizational tasks (financing, scheduling, compliance issues, and building maintenance), and instructional issues (monitoring/observing instruction, supporting teachers’ professional development, analyzing student data or work, modeling instructional practices, and teaching a class).

Despite similarities and parallels, charter school principals’ concerns and time use would be different from those of traditional public school principals because of contextual differences. In exchange for greater autonomy from various state and district policies and greater flexibility in decision making at the school level, principals of charter schools generally do not have access to structural supports available to traditional principals. As a result of this lack of centralized support, charter principals often take on additional management responsibilities typically dedicated to district office personnel (Campbell & Gross, 2008; Dressler, 2001). Little research, however, has examined the concerns of charter principals, their use of time, the interaction of their concerns and allocation of time, or how concerns and use of time interface with models of principal leadership (Bulkley & Fisler, 2003; Campbell & Gross, 2008).

Evidence from a growing body of research suggests principal practices have an impact on student learning (Leithwood, Louis, Anderson, & Wahlstrom, 2004; Louis et al., 2010). Less conclusive, however, is how principals impact student outcomes (Louis et al., 2010). Researchers examining school leadership have called for continued efforts to understand how the relationship of principal concerns, time, and practice impact schools and students (Camburn et al., 2010; Louis et al., 2010). With the limited research related to charter principal in general, and specifically related to their concerns and use of time, the purpose of this study was to elicit and to examine the concerns of two relatively inexperienced charter school principals, new to their schools, over the course of a school year. We were concurrently interested in how those concerns were reflected in their expressed use of time, which would provide an insight into how these principals enacted leadership practices. We expected that the concerns and use of time of these principals would vary depending on the time of year. Finally, we were interested in how the expressed concerns and principals’ use of time compared to successful school leadership practices in the current literature. Our specific research questions were:

1. What are the expressed concerns of select charter school principals new to their setting?
2. How do select charter principals who are new to their setting report their use of time?
3. How does the use of time by select charter principals vary over the course of the school year?
4. How do the expressed concerns and use of time of select charter principals, new to their settings, compare to successful school leadership practices outlined in the current school leadership literature?

In order to address our questions, we framed our research through a conceptualization of effective school leadership, primarily based on traditional principal leadership, and the limited survey research outlining charter principals’ concerns and use of time.

**Perspective and Framework**

Effective principal practice and how to measure effectiveness continues to be debated (Camburn et al., 2010; Danzig, 2009). Increasingly however, research on student outcomes indicates that principals have a significant, albeit indirect, impact, particularly on student achievement (Hallinger & Heck, 1996; Leithwood et al., 2004; Louis et al., 2010). Various models of school leadership provide insight into how principals impact schools and students (Leithwood & Duke, 1999); yet, in the current atmosphere of accountability, student academic achievement is clearly an important indicator of successful principal practices.

Using student achievement as the metric, Leithwood et al. (2004) have conceptualized successful school leadership by outlining three sets of practices—setting directions, developing people, and redesigning the organization, as outlined in Table 1. Principals appear to influence student outcomes through these practices. Setting direction encompasses development of a shared understanding of the mission, vision, and goals of the school. Principals develop people by building individuals’ skills and capacity within the organization through support and providing models of effective teaching practices. Principals enhance school and student performance by strengthening school cultures.
CONCERNS, USE OF TIME, AND THE INTERSECTIONS OF LEADERSHIP: CASE STUDY OF TWO CHARTER SCHOOL PRINCIPALS

through modifying organizational structures and building collaborative processes. Using this framework, Leithwood et al. (2004) suggested that a principal’s concerns and time focused around these three broad sets of practices would result in enhanced student outcomes.

The Charter School Principal

Focusing on these core practices might be more difficult for charter principals than for their traditional counterparts. According to Zimmer et al. (2009), “[C]harter schools operate outside the direct control of local school districts and, under a publically issued charter that give them greater autonomy than other public schools have over curriculum, instruction, and operation” (p. iii). The bureaucratic organization of charter schools generally is composed of a charter board that oversees single or small groups of charter schools. Although more charter schools are contracting with educational management organizations (EMO) for support with operational issues, the vast majority of charter schools place management tasks with principals and give them significant autonomy with respect to management and instructional decisions (Miron & Urschel, 2009). As a result, charter principals are responsible for tasks or contractual agreements generally designated to personnel in district central offices, such as human resource, accounting, transportation, or special education services (Campbell & Gross, 2008; Miron & Urschel, 2009). Additionally, principals must engage in tasks unique to charter schools. Charter schools operate as market-driven entities and, thus, must attract an adequate number of students to be financially viable. Promoting and marketing the school to attract students often become the charter principals’ responsibility (Campbell & Gross, 2008). Parental/familial involvement might take on a different view when parents and guardians are seen as customers/clients rather than as constituents. Although state laws vary, charter schools frequently do not have the same funding sources as do traditional schools for facilities (Campbell & Gross, 2008). Therefore, charter principals often have responsibility for acquiring, financing, and managing facilities to a greater extent than have traditional principals (Campbell & Gross, 2008; Dressler, 2001). These additional tasks, however, do not abdicate charter principals from management and leadership responsibilities and tasks of traditional principals.

Table 1

Successful Principal Practices Model

<table>
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<tr>
<th>Broad Category</th>
<th>Definition</th>
<th>Practices</th>
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| Setting Direction       | Development of a shared understanding of the organization and its goals to support purpose and vision | • Focus on goal-based motivation  
                          |                                                                                                                                                         |  
                          |                                                                                                  | • Identify and articulate a vision  
                          |                                                                                                  | • Foster acceptance of group goals  
                          |                                                                                                  | • Create high performance expectations  
                          | Developing People         | Implementation of practices that develop people’s ability to improve the quality of teaching and learning | • Know the “technical core” of schooling – teaching and learning  
                          |                                                                                                  | • Attend to and utilize employees capabilities  
                          |                                                                                                  | • Provide for intellectual stimulation  
                          |                                                                                                  | • Provide for individual support  
                          |                                                                                                  | • Model appropriate practices  
                          | Redesigning the Organization | Development of effective organizational culture and structures that support and sustain the performance of staff and students | • Facilitate work of organizational members to meet changing improvement needs  
                          |                                                                                                  |  
                          |                                                                                                  | • Strengthen school culture  
                          |                                                                                                  | • Modify organizational structures  
                          |                                                                                                  | • Build collaborative practices  

Concerns and Use of Time

Few researchers have outlined the concerns of charter principals and how they spend their time (Campbell & Gross, 2008; Dressler, 2001; Gross & Pochop, 2007). Dressler (2001), in a pre-No Child Left Behind (No Child Left Behind [NCLB], 2001) study of urban Colorado charter school principals, documented that charter principals were most concerned with funding limitations, time constraints, working with the local districts, and aligning curriculum to standards. Only two specific studies, Gross and Pochop (2007) and Campbell and Gross (2008), have been conducted examining these issues after the NCLB implementation. Considering the amplified and expanded role of principals in charter schools and the current policy focus on accountability, it is reasonable to assume variations in how principals spend their time post-NCLB. Surveying charter principals in three Midwest states post-NCLB, Gross and Pochop (2007) reported the challenges faced by these principals. Beginning with the most pressing concern, the following list of challenges dominated principals’ thinking: (a) raising funds or managing finances, (b) engaging parents, (c) acquiring or maintaining facilities, (d) negotiating with district and traditional schools, (e) attracting qualified teachers, (f) attracting students, (g) maintaining a focus on the school’s mission, (h) complying/reporting on state or federal law/requirements, and (i) having conflict with the charter boards of trustees. In a more expansive study, but using the same questionnaire with 410 charter principals in six states, Campbell and Gross (2008) obtained similar results. In the questionnaire principals were given the option to identify multiple challenges. The top three challenges identified by this set of charter principals were acquiring and managing facilities (39%), raising funds and managing finances (37%), and attracting qualified teachers (36%). The percentages of principals who identified the remaining challenges were: engaging parents (27%), negotiating with district and traditional schools (25%), attracting students (20%), complying/reporting on state or federal law/requirements (17%), maintaining a focus on the school’s mission (11%), and working with the charter boards of trustees (7%). One of the constraints of this survey, used by these researchers post-NCLB, was the exclusion of instructional issues when asking principals to identify concerns and an overemphasis on the unique features of charter principals.

However, the questionnaire used by Gross and Pochop (2007) and Campbell and Gross (2008) also asked charter principals about their use of time and this section on use of time included instructional leadership as part of the survey. In the Gross and Pochop (2007) study, organizational management occupied the highest percentage of the principals’ time (28.5%), whereas Campbell and Gross (2008) documented that instructional leadership required a significant amount of time (21%). In both post-NCLB studies, principals identified if time spent on the activity was excessive, adequate, or not adequate. Principals’ responses were similar in each study, indicating a desire to spend less time on organizational management and more time on what would be considered leadership tasks—instructional leadership, promoting the school culture, strategic planning, and public relations. These principals appeared to be engaged in many of the same tasks as were their traditional counterparts, including instructional and management tasks. It is unclear how these principals’ concerns and time, however, correlate to traditional models of school leadership. The studies just outlined above present initial insights into the working life of these administrators; however, singular use of survey methodology provides limited depth and understanding of the complexity of the charter principalship. Camburn et al. (2010) posited, “many principal surveys focus on only one domain of principal leadership practice, thus making assessment of relative frequency of principal practice in particular domain” (p. 711). In the case of the two specific studies outlining charter principal leadership in the context of accountability post-NCLB, there is a focus on a limited set of concerns specific to charter leadership and a narrow set of parameters on time use. Given the limited number of research studies focused on charter principals and the singular focus on survey methods within these studies, we pursued a more qualitative approach to examining the concerns of charter principals and the use of their time. A more expanded understanding of charter school principals’ concerns and use of time might provide avenues to support these leaders to more effective practice.

Method

As identified by Yin (2009), this investigation was an embedded case design within a multiple case study of two charter schools. In an embedded design, “attention is also given to a subunit or subunits” (Yin, 2009, p. 50) within the multiple case study. Leadership in charter schools bounded the broader multiple case study, or quintain, as Stake (2006) described the condition or phenomenon studied in multiple case study research. In the embedded design and analysis we isolated principals’ concerns and use of time. We purposefully selected the charter schools for the multi-case study based on two sampling schemes as outlined by Collins, Onwuegbuzie, and Jiao (2007), criteria and convenience sampling. We
set three criteria for selection of charter schools for the multi-case study. First, the charter schools selected must have been in the same state because charter law, governance structures, and practices vary widely among states. Second, the charter schools must have represented different types of charters with respect to authorization to allow for leadership comparisons among governance structures. Third, we targeted charter schools where the principal was new to his/her setting, assuming that the principal would be more cognizant of his/her leadership decisions and practices in a context where every enactment of leadership was new. A convenience sampling scheme then was used to identify specific charter schools. We selected the southern state in which we worked, developing a list of charter schools with principals new to their setting. We then narrowed that list to charter schools based upon travel proximity. Considering our research capacity in regard to funding and time constraints, we limited our potential cases to two sites. Finally, we selected two different types of charter schools; an open enrollment choice charter school that had been in operation for several years and a new charter school that opened as a result of government take-over of a traditional public school.

As suggested by Stake (2006), each case was treated separately, with each researcher/author being responsible for how data were collected and initial analysis of the assigned case. We employed several data collection methods in the broader multiple case study: interviews of teachers and principals, documents and artifacts produced by and about the schools, archival data such as the schools’ charters, and observations. In the embedded design and analysis reported here, we focused on the two principals, specifically their expressed concerns and use of time. As such, principal interviews were the primary data sources for the analysis of the embedded examination of principals’ concerns and use of time. We conducted three semi-structured extended interviews of 60 to 90 minutes with each principal, two at the beginning of the school year and one at the end of the year. These three extended interviews provided background and context for the study, as well as a concluding summary of the year’s experiences. The substantive interviews for this study, however, were bi-weekly interviews with the two charter principals over a 7-month period. The principals were asked two questions in these bi-weekly interviews that lasted between 15 and 50 minutes: (a) What school experiences or issue(s) have dominated your thinking these past 2 weeks? and (b) What school experiences or issues(s) have occupied the greatest amount of your time? Follow-up and probing questions were asked in the context of these interviews. We also collected documents such as local newspaper and magazine articles in which the principals were interviewed. Artifacts such as periodic copies of the schools’ website and visual representations of the principals’ visions for the school also were collected. Additionally, we observed the principals in faculty meetings and in assemblies. With each of these additional data collection points, we asked the principal to interpret the event or to document it in either the bi-weekly interview or the end-of-the-year interview.

Participants and School Context

The two principals were both new to their schools. Mr. Compton at City Schools (CS) (all names are pseudonyms) was a first-year principal. He was an alternatively certified teacher, having taught for 3 years, first in a traditional middle school and then for 1 year as a teacher in a district-sponsored charter high school. He then spent 1 year at the state office of education training groups of people interested in applying for charter school authorization. Under state provision, Mr. Compton was not required to, nor did he obtain principal certification. CS was in its 12th year of operation, serving 277 K-8 students in an urban area in the south (91% free and reduced lunch and 95% Black students). CS was a district-authorized charter school and, as such, was eligible for some district services.

After receiving his degree in chemistry from his home in a Mediterranean country, Mr. Damla moved to the United States and obtained an alternative teaching certification. He had taught for 3 years in a Southwestern high school in the United States. He was recruited to serve as an assistant principal for 2 years and then principal of a charter middle/high school in a southern city. This middle/high school had been taken over by the state for poor academic performance the year Mr. Damla became the assistant principal. The charter for this middle/high school was granted to a charter board that was affiliated with a national non-profit organization. As a take-over charter, the charter board for this school reported to a state agency rather than to a local district. The charter board for which Mr. Damla worked as a principal contracted for another take-over middle school in the same state. The board asked Mr. Damla to open this new state take-over charter school—Kemp Middle School (KMS). KMS was chartered with a technology and science focus, in the same southern urban city as CS. Also, KMS served a high poverty population of 447 students (95% free and reduced lunch and 87% Black students). Like Mr. Compton, Mr. Damla did not have principal certification.
Cross-Case Analysis

Our analysis in this investigation flows from our constructivist paradigm as advocated by Denzin and Lincoln (2011) and Koro-Ljungberg, Yendol-Hoppey, Smith, and Hayes (2009). The multiple case study approach, embedded design, and congruent methods provided us with the data to develop a rich description of these two charter principals’ perceived concerns and experiences related to their use of time. We chose to use a cross-case analysis of the two principals’ concerns and use of time because a “cross-case analysis can begin in search of patterns and themes that cut across individual experiences” (Patton, 2002, p. 57).

We employed several procedures to address threats to credibility, transferability, dependability, and conformability (Creswell, 2007; Stake 2010). As a research team, we had prolonged engagement with each school through multiple interactions with the principal and other data sources from the schools. We triangulated the data, as suggested by Stake (2006, 2010), by providing the opportunity for principals to audit and to correct each transcribed interview, having multiple individuals collect and analyze data, and eliciting critical feedback of our analysis and case write-ups from colleagues. Further, within this embedded analysis of principals’ concerns and use of time, we developed cross-case themes through a systematic process of coding and categorizing. Specifically, principal-transcribed interviews were coded using ATLAS-ti 6.2 software. We analyzed the initial, extended transcribed interviews side-by-side. We began by highlighting sentences, passages, and quotations that provided insights into the concerns of the participants and how these concerns were experienced by the principal (the first question asked in each interview). The same process occurred with the events that principals outlined as occupying their time (second interview question). Codes were assigned to describe these specific concerns and events. The first author then coded the remaining interviews using this coding process. Upon completion of the coding process, the researchers, together with a graduate student, re-examined each coded passage for consistency. The team then clustered these significant statements into categories, which then were further synthesized into themes. Through discussion of these themes, we were able to provide a rich description of these principals’ concerns and use of time, which represented an additional approach to validating the research findings.

Results

The principals reported spending time engaged in numerous tasks throughout the year. These tasks ranged from management issues, such as organizing the science fair and changing bell schedules, to student and teacher discipline. As might be expected, there seemed to be a connection between a concern expressed in one interview and time spent dealing with that concern in subsequent interviews. In other words, concerns seemed to precipitate time spent on a task. Although intuitively obvious, the research literature provides few examples of how principal concerns precipitate the time spent and actions taken to deal with concerns.

This connection between a concern and action to resolve an issue is particularly noteworthy in the context of charter school leadership. The premise that charter school principals have the autonomy and flexibility to make rapid changes in school operations when needed suggests that a concern should lead to a rapid response. As an example, in November, Mr. Compton expressed concern about the effectiveness of the extended day approach, an 11-year practice used by the school to increase time on task as a means to improve student achievement. By December, he had decided to change the calendar for the subsequent school year, eliminating the extended day, shortening the current school year by 2 weeks, and increasing the calendar year by several weeks for the next year. Mr. Damla’s actions also were precipitated by earlier concerns. A case in point was illustrated by his concerns in December related to student discipline. By January he had rescheduled students with major discipline issues into a self-contained classroom and implemented a Positive Behavior Intervention System (PBIS) for the whole school. The ability of these principals rapidly to make expansive changes represents the autonomy given them as charter school principals. Unlike their traditional counterparts, these two principals were governed only by their charter boards. Thus, without the layers of bureaucracy present in traditional schools, there were no district policy manuals or supervisors to consult. These two instances and others present in the data indicated that both charter boards granted each of these principals much greater discretion and autonomy in the operation of the schools than what might generally occur in a traditional school setting.

The sequencing of concerns and time spent on tasks also played out in the themes surfacing from the data (see Table 2 and Table 3). Two of the three most common themes—personnel and student-related issues—appeared more prominently as part of the principals’ focus in various parts of the year. Personnel issues occupied the principals’ concerns and time primarily in the spring, whereas student-related issues were foremost in November and December. The most dominant theme—accountability—permeated the principals’ concerns and time over the entire year in various forms, resulting in almost a myopic focus on state testing.
## Table 2

*Code Frequency and Total Instances of the Charter Principals’ Concerns*

<table>
<thead>
<tr>
<th>Theme</th>
<th>Concerns - Total Instances</th>
<th>Codes</th>
<th>Code Counts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accountability</td>
<td>51 state test</td>
<td></td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>school structures</td>
<td></td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>benchmark testing</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>data gathering</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>data analysis</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>student/teacher incentives</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Personnel Issues</td>
<td>28 personnel concerns</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>teachers not buying into</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>data driven culture</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>hiring faculty/staff</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>faculty/staff dismissal</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>professional development</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>communication</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Student-Related Issues</td>
<td>26 student behavior</td>
<td></td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>student activities</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>meeting student social/</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>emotional needs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management Issues</td>
<td>15 funding/budget</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>state paperwork</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>facilities</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>working with local school</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>district</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>grants</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>busses</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>charter board conflict</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>School Promotion</td>
<td>14 parent-buy in</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>importance of achievement</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>differences in home school</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>expectations</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>attracting students</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Instructional Issues and</td>
<td>9 improving writing</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Teacher Supervision</td>
<td>improving reading/literacy</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>classroom libraries</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>principal involvement with</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>instruction</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 3

Code Frequency and Total Instances of the Charter Principals’ Use of Time

<table>
<thead>
<tr>
<th>Theme</th>
<th>Time Spent - Total Instances</th>
<th>Time Spent Codes</th>
<th>Codes Counts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accountability</td>
<td>11</td>
<td>state testing – school structures</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>benchmark testing</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>data analysis</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>data gathering</td>
<td>1</td>
</tr>
<tr>
<td>Personnel Issues</td>
<td>10</td>
<td>personnel dismissal</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>hiring faculty/staff</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>teacher conflict</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>promoting teacher buying into data driven culture</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>strategic planning for recruiting teachers</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>observing prospective teachers</td>
<td>1</td>
</tr>
<tr>
<td>Student-Related Issues</td>
<td>16</td>
<td>student behavior</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>school activities</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>school schedules</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>parent conferences</td>
<td>1</td>
</tr>
<tr>
<td>Management Issues</td>
<td>9</td>
<td>funding/budget</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>facilities</td>
<td>2</td>
</tr>
<tr>
<td>School Promotion</td>
<td>3</td>
<td>Marketing</td>
<td>3</td>
</tr>
<tr>
<td>Instructional Issues and</td>
<td>3</td>
<td>commercial programs</td>
<td>1</td>
</tr>
<tr>
<td>Teacher Supervision</td>
<td></td>
<td>teacher evaluations</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>walk throughs</td>
<td>1</td>
</tr>
</tbody>
</table>

**Accountability**

Each principal viewed his mission as improving student academic achievement. For these principals, academic achievement translated directly to improved scores on the state accountability test. When asked about his mission and vision for the school, Mr. Compton, in the initial interview, stated: “So, I mean that’s sort of the vision that I think everyone here shares, the board shares we want to be a great place academically. … We have too many kids right at like the basic level, basic meaning [state] score, [state] score basic. And if we have a student from K-4th grade they should not be at basic, they should be at minimum mastery if not advanced. We’ve got to get into triple digits, [school state test] scores, we got to get away from our bell curve, sorry we have to shift our bell curve…”

Mr. Damla confirmed that state testing was his major concern. When asked why, he responded, “Because it is the only measure.” Yet, he lamented this felt pressure by further commenting, “It’s kind of sad that, you know, basically science fair results in the region wide, you know, in the regional science fair and everything else—it is based on the test scores and nothing else.”

This singular vision makes sense in the context of these two charter schools. First, Mr. Compton perceived that he was hired to improve achievement scores that had been static at the school for several years. As a state-takeover school, the only reason Kemp Middle School existed was because of poor student academic performance as measured by the state accountability test.

**Benchmarking.** This concern over low performance and improving student state test scores manifested itself in multiple forms related to both concerns and time spent in each of the biweekly interviews for each principal. One of the most apparent concerns that demanded principals’ time was tracking student performance through ongoing
assessments—benchmark tests—because both principals perceived benchmarks assessment results as having predictive value for the state test. Modifying school structures that accommodated benchmark testing and interventions for students identified as performing poorly on benchmark tests consumed principal thinking and time spent. Additionally, both assumed benchmark data should drive instruction. As Mr. Compton stated, “If we can get to the point where the data is [sic] driving the instruction, that’s number one.” As examples of the intense focus on monitoring student achievement, principals assigned teachers to develop benchmark tests and principals purchased multiple benchmark tests, all geared to maximize performance on the state test. In October, when asked what issues were of concern to Principal Damla, he discussed his efforts in getting benchmarking testing implemented and working:

We try to regulate it [learning] with monthly assessments with the benchmarks. We use different tests to see their levels throughout the school year. We did one in August and we got the results and we will do another on next week. We are using [State Test] coach. We are also using Buckle Down series. And we will do another next week and we will see who made how much progress. We do meetings with the parent to see if they need Saturday school or some kind of remediation so we kind of make some adjustments for the groups.

Mr. Compton expressed concerns throughout the school year that his benchmark testing was not as effective as he had hoped. This concern led him to purchase a comprehensive data-monitoring program in the spring. The following quotation provides an insight into these principals’ focus on tracking student achievement:

...we’re actually getting a data system installed Monday so that’s where I’ll be, which I’m super excited about. We can like finally have a comprehensive tracking in terms of the nitty-gritty attendance, tardies, early checkouts and standardized test scores, report cards. We can link it to unit tests for classes. Like, I’m so excited about what we’re going to be doing with this. Like, we can actually be systematically tracking our students.

The development, use, and implementation of benchmark assessments tied to the state accountability tests consumed much of these two principals’ time and were the most stated concerns over the course of the year. The concern over tracking student progress led principals to other actions, including developing and modifying schools structures.

School structures. From the beginning of the year, principals developed and adjusted school structures based on testing and benchmark data. This focus on state data guided Mr. Damla’s creation of the master schedule. As he stated:

We are using the data from last year. We set-up the classrooms homogeneously so if everybody’s, if I have 20 students who are performing at the basic level, I’m going to put them together so the teacher who’s going to teach them the core subjects can adjust their curriculum. So it’s not going to start at the beginning because they already performing at the basic level, so she has to push for the masters or advanced category; there are 5 different categories, class levels.

Mr. Compton also intended to use state testing results to track students into classes, but determined there was not enough variation in test scores to justify grouping students.

Throughout the year the principals continued to express concerns about poor student performance on benchmark tests, resulting in modifications to school schedules and structures. These modification included implementation of Saturday school, amending teaching schedules, and adding after school tutoring. Mr. Compton discussed how student information on benchmark data led to his decision to departmentalize the entire elementary school:

...quite frankly our benchmark data for our grades that are departmentalized were above and beyond our other grades. Part of it is teachers, but also part of it is also the structure of setting it up that way and again being able to exploit the strengths of those teachers.

A major modification to both school schedules, and further evidence of both autonomy and concern over accountability, occurred in the spring when both principals moved spring break after state testing, under the assumption that the break would lesson student performance on the tests.

Personnel Issues

This central focus on student achievement also interfaced with the second theme, personnel issues. Both principals expressed ongoing concerns about teachers following their plans for and use of benchmark testing, test preparation, and a continuous focus on student achievement. There was a dissonance between principal expectations and teacher performance. The principals expected ongoing benchmark testing and improved state test scores, even offering annual bonuses tied to student outcomes. They also expected adherence to the state
curriculum; yet, little support was given to teachers as a means to improve instructional practices to meet expectations in these areas. By mid-year, however, personnel concerns, particularly as they related to teachers not teaching to benchmark and state tests, began to increase both in expressed concerns and time spent by the principals.

Before the winter break Mr. Compton became increasingly concerned about teachers not using benchmark testing as the basis for instruction:

Teachers for the most part use DRA [Developmental Reading Assessment] (1997) throughout the year, some more than others you know again some have really bought into it and some it as, it’s just a number and they’re still going to teach whatever they want to teach. That’s the other thing that you know we have some teachers that go through to process of DRA, they see that the students are below grade level. They can see it but they still teach the same thing that they shouldn’t be teaching.

After the winter break, Mr. Damla also expressed concern over teachers not adequately connecting their curricula and instructional practices to the state test:

Busy work, like, it doesn’t correlate with the state objectives and maybe it’s not even in the benchmarks and some teachers were, like, teaching a subject that won’t be even on the test, that’s, like, unrelated stuff. And sometimes they were… spending a whole bunch of time on some content that has only a very small portion on the test; there might be only maybe one or two questions on one content but they were spending like 4 weeks or 3 weeks. And you know, it’s kind of very risky and it’s stealing from everybody. Wasting time is wasting money and it costs a lot.

In the case of Mr. Compton, he revealed that tying teacher bonuses to state testing became problematic as he assumed teachers had “cheated” on the test:

I think that some teachers fudge the numbers, or fudge the administration of the [state] test. And, you know, when you tie bonuses into that, that’s bound to happen. I mean, it shouldn’t, but I understand why it would. So that we know we need to, definitely need to fix. And you know, some people that won’t be invited back, that’s one of the reasons why, because there’s no way their numbers are accurate.

The pressures of accountability, to improve test scores through financial bonuses, and the limited professional support given to teachers, seemed to be problematic in terms of personnel issues.

This connection between accountability and personnel issues became a major issue as the school year concluded. Mr. Compton did not renew contracts for one half of his staff. Mr. Damla, as of the last day of school, had renewed slightly more than one half of his teachers’ contracts. During each of the April and May interviews, both principals expressed concern over finding quality teachers, and Mr. Compton further conveyed that the search for new staff was consuming most of his days.

Student-Related Issues

The third most common theme, student-related issues, appeared of paramount concern to principals mid-year. Both principals articulated frustration with student behaviors that seemed to escalate in December. Mr. Compton discussed how as a charter school, they were not equipped to deal with the major behavior problems that he and members of his school staff were encountering and that perhaps a strict focus on academic performance was not adequate:

The biggest thing that we’ve been talking about is, how can we, what do we need to do to address more than just the academic side for our students? I think some of that is rooted in some of the fact that we haven’t had the best behavior week this week… we have some students, not a high percentage, but we have some students that I have taken them on as my mission. These five students or these seven students, we as a staff we’re still learning and I am especially. How do we work with students like that who have so many things going on and we are nowhere equipped for some of them but how do we do it?

However, as expressed by Mr. Damla, both principals often discussed improving student discipline in relation to student academic performance:

We are kind of trying to brainstorm to maybe restructure a couple of things. It’s not only kids’ test scores, I have to deal with the discipline… So we need to kind of think if we need some changes on different levels of the school. We want to brainstorm how it is going to affect not only the test scores but also the student behavior.

The principals’ concern for student discipline involved meeting student needs beyond testing, such as student social emotional needs. However, discipline and student needs were most often framed in terms of improved academic achievement performance as measured by the state test. Mr. Compton succinctly stated the following continued focus: “I don’t know how far we can really progress academically, improve our school [state] score, if we
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don’t address the social-emotional component of our students.”

As previously mentioned, both principals addressed concerns by changing schedules and implementing programs. Mr. Damla spent time in January and February reacting to the discipline concerns by implementing PBIS, where students received token “Tiger-bucks” from teachers for positive behaviors. He also instituted a self-contained class of students with behavior problems and he purchased a bullying prevention program. Mr. Compton tried Saturday Detention, in-school suspension, and parent conferencing, but did not find a specific structure that he felt addressed his most challenging students.

Although less prevalent than discipline issues, the principals also voiced concern and spent time related to student activities. CS did not have a middle school activity program, but Kemp, as a take-over charter school, had the same activity program as do the traditional public schools. As a result, Mr. Damla did spend time at football and soccer games, but concern over these activities did not surface in the data. Instead, Mr. Damla aired concerns over the school’s science fair. Marketing itself as a science and technology magnet charter school, Mr. Damla felt the science fair was an important tool in promoting the school. Both principals, however, developed student activities that they felt would motivate students and enhance performance on the state test, including motivational assemblies and enrichment activities. As an example, Mr. Damla discussed his enrichment camping program:

One of my Teach for America teachers, she is kind of happy to help on the enrichment program, different enrichment programs. So they [students] love to camp and she’ll do like a test prep, so they get some test prep…. The parents like it, the kids liked it. So they went to one of the camping places close to town… So they enjoyed it.

This integration of school activities with test preparation further indicated the principals’ laser focus on student achievement.

Management Issues

The three remaining themes—Management Issues, School Promotion, Instruction and Teacher Supervision—continued to be connected to accountability issues but also provided insights into unique concerns of these charter principals. Management issues were particularly insightful. The principals’ primary management focus was on funding for personnel and dealing with the local school district. Mr. Compton became increasingly concerned about not having sufficient funding for support personnel, such as a counselor and classroom aides. He expressed concerns about finding additional money for classroom libraries because the school did not have a library. His concern with limited funding also interacted with his frustration with the local school district over the lease of the building and limited special education services provided by the district. As a state take-over charter, Mr. Damla had use of the district’s building without a lease and was required to purchase his own special education teachers rather than using the local school district’s services. As a result, Mr. Damla’s concern with the local school district centered on building maintenance issues. Of greater concern for Mr. Damla, however, were funding and budgeting issues related to personnel and student motivation. Several of the positions, including a librarian, were purchased with grant funding. In addition, Mr. Damla had received grant money to pay for student incentives for high state test performance, such as trips to Disneyland for students.

Surprisingly, management issues related to complying with state and district requirement appeared as a repeated concern to these principals. One of the proposed characteristics of charter schools is freedom from such oversight and paperwork. Also interesting was the lack of concern over daily management issues. Even though these principals had the primary responsibility for managing or contracting for most services, as well as dealing with the daily routines of schools like bussing and cafeterias, such issues did not appear to concern these principals.

Considering the challenges over lack of funding as a primary management concern, it was not surprising that much time was spent by these principals locating funding or supporting board efforts in funding sources. Mr. Compton worked extensively with the board in locating potential sites for a new school and supporting the board’s efforts in funding the purchase of the new school. Mr. Damla spent time throughout the year applying for various grants. In addition, Mr. Damla was involved in helping the board gain political and financial support for a new 9-12 charter for a high school. Each principal also noted they spent some time dealing with the local school district issues, particularly as they related to the building facilities.

School Promotion

The need to find outside funding resulted in each principal spending time promoting the school to the greater community. As an example, both principals contacted reporters and were featured in local newspapers and magazine articles. The following is Mr. Compton’s account of how and why he solicited the interview:
And I called up the reporter and was like you have to do an article on our middle school kids. Like we’re doing some interesting stuff that I think people need to hear about. And he was like alright. So he followed us around for 2 days. Um you know I sort of have no shame. Whatever you got to do to get these kids what they deserve I mean I think you got to do it.

Mr. Damla also spent considerable time organizing and advertising the school’s science fair as a means of promoting the school. Marketing itself as a science and technology charter school, in three separate interviews, he outlined the importance of soliciting positive community support for the activity by noting the local dignitaries involved in the fair as guests and judges, such as the dean of the local university, community business leaders, and a representative from the mayor’s office.

Whereas the principals spent time marketing their schools, of greater concern to both principals was promoting their priorities to parents, particularly parent buy-in and subsequent acceptance of the school focus on testing and test scores, school schedules and structures that the principals viewed as improving student test scores, and the overall effectiveness of the school. The principals expressed concern over this disconnect between the school culture they promoted and the students’ home culture. As Mr. Compton stated, the principals wanted students to adjust to school expectations:

I mean, we’re not going to change it everywhere but we need to start, we need to start hitting home the point that you live in 2 or 3 or 4 worlds and you have to learn how to operate in all of them well. I think that’s a very hard concept for a Kindergarten, 1st grader, but as they get upstairs here, they should start understanding that, and in middle school, they should definitely be able to do that.

In both cases, the principals did not think parents were appropriately concerned about their students’ performance as it related to testing. The following quote from Mr. Damla typifies the concerns both principals identified about lack of parent priority for the interventions implemented to improve student test performance:

It kind of worries me for the first year, but we still want to take the necessary interventions to get the scores high. The thing about that is, the parents, they do not realize how important that is. They are not bringing the children in the morning. Most likely, they will start kind of rushing after January, when it kind of gets close to the testing, because they don’t want their students, you know, to fail, at the same time they are not taking enough action.

Mr. Compton also delineated concerns and frustrations about parent buy-in to various interventions and school schedules he was implementing to improve student performance. One such intervention was Saturday school:

Parents say they want, say they want it and then no kids show up … they had to sign a contract; and more importantly they had to pay $20 and if the student missed the Saturday or is tardy or has to be removed because of behavior, they forfeit their $20.

We considered labeling these issues related to student home and parents as parental involvement; however, it became clear as we continued coding that these principal concerns were less about involving parents with their children’s school, and more about convincing parents to accept and to support school goals and student achievement.

Instruction and Teacher Supervision

The limited instances of concern directly related to the last theme—Instructional Issues and Teacher Supervision—is perhaps understandable in relationship to the previous themes and both principals’ limited experience as teachers and administrators. The principals articulated the few concerns they had with curriculum and teacher skill levels in general and somewhat vague terms, expressing little depth in problem identification or solutions. The following comment by Mr. Compton illustrates how both principals’ limitation in pedagogical and curricular problem identification unfolded:

The main thing is instruction; we’re not cohesive enough as we need to be. We need to have an actual, “Ok this is what we think it should look like in kindergarten.” This is what it should look like in 5th grade. This is what it should look like in 8th grade. We know our instruction is not strong enough.

Mr. Compton’s mixing of two issues in the passage above, weak instruction and a lack of a coherent sequencing of the curriculum, might have been a result of how both principals identified instructional issues. We noted only two instances where principals talked about time spent in the classroom evaluating teacher performance and found no instances of time spent with teachers discussing the results of these evaluations. Instead, benchmark test scores seemed to be the process by which principals evaluated instruction. Mr. Damla expressed the following sentiment:

…first we are kind of trying to brainstorm to maybe restructure a couple of things. It’s kids’ test scores, I have to do some other
things with the teaching. So we need to kind of think... if we need some changes on different levels of the school.

In the subsequent interview, Mr. Damla discussed spending time implementing a review and test preparation program titled Study Island® as a solution to his concerns about teaching.

When the principals expressed a concern over teachers’ skill level, they did not concomitantly discuss improving teachers’ skill level. Instead, as illustrated by Mr. Damla, they purchased instructional programs or they discussed replacing teachers as solutions. Mr. Compton exemplifies this second solution, “I don’t think a lot of our teachers were comfortable teaching writing. I don’t think a lot of our teachers know how to teach reading comprehension and therefore our kids have these huge gaps.” When asked how he would remedy these issues he stated, “... finding the right people to actually implement what we want to do.” The ability to replace staff rather than improve teacher skill level might provide an explanation as to why these principals expressed no concern or time spent in providing or discussing teacher professional development. Another explanation for a lack of focus on developing teachers and a reliance on purchased programs to address instructional issues might be a result of these principals’ limited educational preparation, restricted teaching experience, lack of principal preparation/certification, and, thus, narrow pedagogical understanding.

Discussion

Comparison of charter principal practice and effective models of school leadership are absent from the current literature. Comparing these two charter school principals’ experiences, as outlined by the six themes derived from their expressed concerns and time spent, to the concerns outlined by charter principals in previous research and effective principal practices, is a means to understand further charter principal leadership. We first compare our findings with the extant research related to charter principals’ concerns and use of time and then to Leithwood et al.’s (2004) conceptualization of successful school leadership.

Comparison to Previous Research

As noted by Weitzel and Lubienski (2010), the political and policy context for charter leadership is considerably different with the advent of NCLB, narrowing the focus of charter schooling toward state testing. Our findings both confirm and disconfirm the results of the only other two studies of charter principals’ challenges and use of time in a post-NCLB context (Campbell & Gross, 2008; Gross & Pochop, 2007). Unlike the previous research, the principals in this study were much less concerned about management tasks, such as raising funds or managing finances. Rather, they were almost singularly concerned about improving student performance on state testing, which might be considered a very narrow interpretation of instructional leadership. This concern over test scores also was expressed in terms of engaging parents in this achievement goal and frustrations with teachers not complying with the principal’s focus on test-related instruction and formative assessments that were thought to predict state test results. These concerns over parents and personnel might be tangentially associated with Gross and Pochop’s (2007) and Campbell and Gross’s (2008) findings of concerns with engaging parents and attracting qualified teachers, although the emphasis in our study seems more about promoting the principals’ goal of improving state test results to parents and teachers.

The principals in this study also voiced concerns noted in previous research related to negotiating with the local district, complying/reporting on state or federal laws/requirement and, in the case of Mr. Compton, acquiring facilities. Yet, these concerns were limited and far less pervasive than were concerns about student achievement, personnel, and student-related behavioral issues. In the case of student-related issues, the previous research is silent. In our research, concerns about attracting students, maintaining a mission, and experiencing conflicts with charter boards were negligible. Attracting students seemed to be associated generally with promoting the school to the community at large, with little concern for specifically recruiting adequate numbers of students. Other than their personal mission of improved testing results, the principals in this study expressed little concern for the focus of the school’s mission as outlined in their charter. Mr. Damla did express concern about the school science fair as representing the school’s mission, but did do so in a limited fashion. Overall, the unique concerns of charter principals such as raising funds, attracting students, and issues with building and local districts were far less important to these principals than were issues that might be more similar to traditional principals—student achievement, personnel, and student behavior.

As for time spent, again, the principals in this study indicated some similarities and differences to previous charter school principal research. Determining how the principals’ laser focus on test scores in our study related to organizational management and instructional leadership, the two areas in which principals spent time in the Gross and Pochop (2007) and Campbell and Gross (2008) studies, is a matter of interpretation.
Interpreted narrowly, instructional leadership means principals should be more directly involved in the curriculum and instructional practices of teachers and orchestrate school and teacher improvement (Marks & Pinty, 2003). Broadly defined, instructional leadership is all principal-related activities that contribute to student learning, including managerial behaviors (Hallinger, 2003). Although Gross and Pochop (2007) and Campbell and Gross (2008) do not distinctly define instructional leadership, the principals’ desire to increase involvement in classroom observation suggest the more narrow interpretation of instructional leadership in these previous studies.

Under this interpretation, the results of our research study suggests principals spent most of their time in organizational management tasks that were meant to support student achievement, not through direct involvement in the curriculum and instructional practices of teachers. Thus, preparing for state tests, changing school structures for student performance on state testing, and developing and analyzing benchmark tests were the organizational management tasks in which principals engaged as a means to improve student achievement. In addition, time spent adjusting schedules to manage student activities and discipline issues also were organizational management tasks. Unlike previous research, principals in this study reported little time in instructional leadership tasks meant to improve teacher performance. Instead, hiring and firing teachers, which equated to the human resource activities in the previous studies, were perceived to consume a greater portion of the principals’ time.

Financial management and public relations (marketing in our study) seemed to require similar portions of time as in previous studies. Time spent in strategic planning, promoting school culture, and staff-student-family politics, appeared in our study, but across themes. The principals clearly set improved student academic performance as the ultimate organizational objective and were continually adjusting procedures and operations to achieve this goal, but did so independently of the teachers. Further, the principals did not express time spent or concern for collective decision-making or strategic planning with others. Promoting a school culture of high academic performance, although a strong concern for these principals, appeared less in their expressed use of time. It seemed principals assumed that they had adequately communicated the importance of improved student achievement and became frustrated with teachers, parents, and students when that culture was not embraced by the community. Actual time spent on prompting culture was limited and only tangentially appeared when principals discussed promoting benchmark tests with faculty and teacher buy-in to data-driven decision making. Staff-student-parent politics, loosely defined as the social acquisition of power, crossed our themes of student issues, personnel, and school promotion. The principals spent time with such political issues as student discipline and student motivation for testing, as well as dismissing teachers who did not follow the principals’ goals for the school. Overall, when comparing our findings to the previous research related to time spent by charter principals, the two principals in this study expressed spending most time with organizational management, student/teacher politics (student issues/personnel issues), and financial management. Little time was spent with regard to the other areas, with a notable dearth of time spent on instructional leadership.

**Setting Direction**

Comparing the principals in this study with Leithwood et al’s (2004) review of successful principal practices, these principals identified a direction for their schools. The first and most prominent theme in this study, improving student achievement on state assessments (accountability), pervaded principals’ thinking and expressed actions, as well as interacting with other themes. Developing, organizing, and analyzing benchmark testing, developing schedules, and changing school structures to implement academic interventions were all focused on raising state academic scores. From the principals’ perspectives, personnel issues were a result of staff members not meeting high expectations set for teachers to use ongoing assessments and to improve student performance. Concerns over student behaviors and student activities, another prominent theme, were often couched in terms of how those behaviors and activities might interfere or enhance student academic performance. Promoting the school, especially with parents, also was centered on the seemingly singular direction of the principal to improve school performance on the state test.

The high incidence of personnel issues, particularly teacher compliance with this vision of improved test scores and instruction based heavily on benchmark data, indicated perhaps this direction was not collectively developed or effectively shared throughout the school. Both principals expressed no concern or time spent working with faculty to identify or to set goals. It appeared that, although principals had a clear vision of where they wanted the school to be, they were unable or failed to see the need to develop shared goals. As a result, they were unable to foster motivation based on shared goals or even the principals’ vision.
Developing People

The inability or choice not to foster collectively developed goals and the lack of group goal-based motivation also might have resulted in the solution these principals enacted related to personnel issues. These charter principals expressed teacher replacement as the sole solution to teacher dilemmas rather than developing teacher capacity. Perhaps the ease of non-renewing annual contracts might have been an incentive for the charter principals to replace rather than develop people. Replacing nearly 50% of the staff at each school supported this assumption. In addition, the limited expressed concern and time spent with instruction and supervision, coupled with the lack of depth when discussing issues of instruction and supervision, also might suggest a superficial understanding of the technical core of schooling—teaching and learning. These two principals’ limited preparation and experience as teachers and administrators might have contributed to reliance on replacing teachers rather than on building capacity. In general, we noted virtually no concern or time spent providing for intellectual stimulation, modeling of appropriate practices, or attending to or utilizing employee’s capabilities beyond organizational changes such as departmentalizing of the school or tracking students.

Redesigning the Organization

Accountability as a vision and issues with personnel also dictated how the principal engaged in redesigning the organization. Their time and concern was highly invested in monitoring student achievement and developing school structures that supported student performance on accountability tests, perhaps at the exclusion of building collaborative shared practices and developing people. Redesigning the organization also seemed to be these principals’ preferred method of improving teaching and learning, relying on commercial programs or interventions that could be implemented school-wide, rather than through developing teacher content and pedagogical skills. Developing culture in the context of programs rather than people might be difficult, and the principals’ concerns and frustrations with personnel, coupled with high incidence of student issues, indicate both principals’ difficulties in building culture.

Our fourth theme, management issues, and elements of the fifth theme, school promotion, are tangentially related to redesigning the organization, but more notably and directly related to the charter school context. Raising funds, attracting students, acquiring facilities, dealing with local school districts, and marketing the school are all necessary for the survival of the school and the development of the school culture. Within the context of charter school leadership, effectively designing and redesigning the charter organization might require an expansion of how culture and school structures are developed in order to accommodate the need to promote the school in a market-driven environment.

Principal Differences

Interestingly, when we examined each case separately, we found little substantive differences in themes between the principals with respect to concerns and use of time. Instead, we noted variation in the degree to which each theme represented each principal. Mr. Compton tended to be more concerned about personnel issues and reported spending more time with management issues than did Mr. Damla. Mr. Compton, being chartered by the local school district, also had to have more interactions with the district, particularly concerning the use of the building. In contrast, Mr. Damla was more concerned and spent more time than did Mr. Compton on promoting the school, particularly recruiting students in this first year of operation. The emphasis on accountability, however, was equally as pervasive for both principals with variations occurring only in how they expressed accountability concerns. As an example, Mr. Damla focused more on purchasing and implementing commercial benchmark and instructional programs aligned with the state test, whereas Mr. Compton spent a great deal of time and concern promoting and developing school-made benchmark tests. Considering the difference in the contexts of the two schools, a noteworthy finding was the relative lack of variation in principal concerns and time spent.

Conclusion

The examination of these two charter school principals’ concerns and time spent cannot be generalized to the experiences and priorities of charter school principal as a whole. The context of charter schools is even more varied than that of traditional principals as a result of variations in state chartering laws (Education Commission of the States, 2010), making even findings from quantitative research suspect for generalization across charter schools. Yet, outlining the experiences of these principals’ priorities and practices through their concerns and use of time provides a touchstone for examining charter principal leadership.

For these two principals, their concerns often precipitated time spent as a means to address expressed concerns. Although we culled six themes from the data—accountability, personnel issues, student-related issues, management issues, school promotions, and instructional issues and supervision—it was concerns over state testing and
formative data (accountability) that dominated other themes and often triggered time spent on a concern or issue. Although a concentrated focus by school administrators on student performance data has been linked to improved student achievement (Leithwood et al., 2004; Portin et al., 2009), these principals’ seemingly singular focus on formative and benchmark data and student test scores overlapped and precluded concerns and time spent on other leadership tasks. Student-related and personnel issues, promoting the school, and the limited concern and time spent on instruction and supervision were most often framed in terms of how they affected student test performance. Although management issues seemed more closely aligned with the unique nature of charter schools, even elements of this theme indicated principals’ concerns with and time spent on benchmark and state testing.

Our findings, although indicating some similarities to the previous research, provided notable differences. The principals in this study appeared much more concerned and spent more time on organizational management and student and human resource issues, particularly as they related to state test scores, than has been noted in previous research. However, they seemed less concerned and spent less time on management issues uniquely related to charter schools, such as finding funding and dealing with local school districts. Similar to previous research (Campbell & Gross, 2008; Dressler, 2001; Gross & Pochop, 2007), the principals in this study had little concern or spent time with strategic planning and issues with their boards, but did have some concern and time spent with state and national compliance issues. Previous research related to challenges of charter school principals did not address instructional leadership concerns, but indicated that principals spent the most or second most time on this issue. Our study indicated that, other than a focus on benchmarking and state test results, these two principals showed much less concern and spent little time on improving teaching and learning or improving teacher skill level. We speculate that this concentration on testing and data and limited leadership in instructional issues might be related to the pressure felt by these principals to improve test scores in their particular contexts as well as their limited pedagogical background and experience as teachers and administrators. Research related to charter principal has indicated that the principal in this study had less experience and background than do charter principals nationally, where the majority of charter principals have 2 or more years as administrators; hold degrees in education; are certified; and hold a master’s, Ph.D. or Educational Specialist degree (Campbell & Gross, 2008; Gross & Pochop, 2007).

Comparison of these two charter principals’ priorities and actions, as indicated by their concerns and time spent, with Leithwood et al.’s (2004) conceptualizations of successful school leadership, indicated that these principals had a strong personal sense of mission to improve student test scores and believed they had set a clear direction for their schools. However, concerns raised by the principal about personnel indicate the direction set by the principals was not shared by teachers, perhaps because there appeared to be little time spent or concern for collaboration with teachers. The greatest variance from the conceptualization of successful practice was the principals’ development of people. We suggest the ability to non-renew contracts and the principals’ lack of experience with the pedagogical core of teaching and learning might have contributed to little concern and lack of time spent in this area. Instead, these principals attempted to improve student performance through redesigning the organization, almost exclusively by modifying school structures, rather than by building collaboration or culture.

As researchers, we cannot assume that these principals were less effective because they were not well aligned with a prominent conceptualization of successful school leadership (Leithwood et al., 2004). Furthermore, the findings from this study cannot be generalized to charter principals in other settings. We posit, however, that context matters: that the description of experiences of these two principals provides further insights into how principal leadership interacts with the unique and growing charter school environment of autonomy and accountability. This research provides opportunities to explore multiple avenues for future research, building a broader base of how charter and traditional school leadership impact school improvement and student outcomes.

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CONCERNS, USE OF TIME, AND THE INTERSECTIONS OF LEADERSHIP:  
CASE STUDY OF TWO CHARTER SCHOOL PRINCIPALS

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Use of Bibliographic Systems and Concept Maps: Innovative Tools to Complete a Literature Review

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This article presents a process for utilizing a bibliographic system built with Microsoft Excel as well as concept maps to organize and to synthesize information that can be included in a literature review. A review of the conceptual framework behind these tools is included as well as a detailed description about how to build the system in Excel. Also discussed in this article is the importance of the literature review as a dynamic component of any scholarly work. Doctoral students usually face the challenge of writing a literature review, lacking the necessary skills to search, to organize, to analyze, and to synthesize information. Some ideas about how to build relationships among existing scholars’ work on a particular topic and ideas for generating new knowledge also are discussed.

Writing a literature review is probably one of the most challenging aspects of being a doctoral student. It is not only a matter of selecting a topic of interest, but it is also a particularly challenging exercise in regard to getting all the information organized, classified, and accessible when the literature reviewer needs it most. Particular attention to details is important for a literature reviewer accurately to cite a particular researcher’s work and also to find her/his own voice in the process. As a doctoral student, the literature reviewer needs to find his or her own voice to be able to contribute some perspective to the existing conversations in the academic world. According to Graff and Birkenstein (2006), it is very challenging to engage students in this type of academic discussion, particularly when they are required to make their own claims and to add something of value to the conversation. In my academic experience in Colombia, Mexico, and now in the United States, I have recognized that perhaps the greatest challenge for students is not only to be able to convey what others have previously stated, which, in most of the cases, becomes a summary of the existing literature, but also to be able to find their own voices in the conversation.

According to Boote and Beile (2005), a high-quality dissertation, and more specifically, a good literature review, requires not only reporting results from previous research but also a critical review of the methodology. By critically reviewing the methods used by previous researchers, the reviewer will be able to synthesize information, offering a new perspective to the existing conversation (Onwuegbuzie, Collins, Leech, Dellinger, & Jiao, 2010). After the researcher has decided upon a dissertation topic and read the required articles, books, and other references, the question is how to organize all the references so that they can be used when appropriate. Even more so, the question is how to find a particular reference that the reviewer recalls reading when he/she does not remember the location or the name of that author. Let us now suppose that the reviewer has a way of tracking all the materials that her/she has read for the literature review. The question that remains is how to organize and synthesize the research literature in their

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field” (Boote & Beile, 2005, p. 5). The poor quality of literature reviews is not a unique problem for only doctoral students, but for scholars in general. Onwuegbuzie and Daniel (2005) found that 40% of the manuscripts submitted for a research journal had inadequate literature reviews, and these manuscripts were more than six times more likely than were manuscripts containing adequate literature reviews to be rejected for publication. The poor quality of literature reviews has been discussed by several authors over the years (Boote & Beile, 2005; Fink, 2009; Hart, 2005). Recently, Onwuegbuzie et al. (2010) have outlined a model for a rigorous literature review that offers a clear guide about how to select, to analyze, and to synthesize qualitative and quantitative sources.

Organizing the Information

Writing a literature review requires enormous amounts of time and effort that challenge even the organization of daily life. It is not only about reading the materials; it is more about classifying, analyzing, and synthesizing great amounts of information, and making sense of it before the writing process begins (Machi & McEvoy, 2009; Onwuegbuzie et al., 2010). Even though the topic of literature reviews seems to be popular among scholars, there are scant published works in this area offering methodological guidance about how to conduct literature reviews (Onwuegbuzie et al., 2010).

Several authors have reported that students, most of the time, only have acquired pieces of information about a particular field in a disorganized fashion. Boote and Beile (2005) remarked that doctoral students lack the bibliographic skills properly to locate and to analyze the existing literature on a particular topic. Also, they surmised that not all educational doctoral programs have high-quality standards for writing a literature review. This is clearly exemplified by the inaccurate understanding of the literature review as a summary of existing knowledge or research about a particular topic; an idea that is very commonly shared among doctoral students (Hart, 2005; Onwuegbuzie, Leech, & Collins, 2011). Further, Combs, Bustamante and Onwuegbuzie (2010) documented the need for doctoral students to find effective strategies to “organize, catalog, and abstract the large amounts of information gleaned from their searches” (p.172)

It is important to mention that by selecting books and articles related to a particular topic, the writer of the literature review is presenting a personal interpretation in the sense that there has been a selective process, which gives a certain ownership to the writer (Dellinger, 2005; Onwuegbuzie et al., 2010). However, it is not enough for the reviewer simply to contribute to the existing conversation. There is a clear and urgent need for doctoral students, or any person aspiring for an academic career, to develop advanced skills in searching bibliography, but even more importantly, to develop ways of collecting and classifying information in a meaningful way (Boote & Beile, 2005; González, Amozurrutia & Maass, 2006), so that they advance the academic discussion with their own voices.

The process of finding and capturing information about a particular topic can be messy, and that is why having a central and unique control document is highly recommended as a good strategy for organizing, categorizing, and analyzing the information available (Fink, 2009; González et al., 2006; Machi & McEvoy, 2009; Onwuegbuzie et al., 2010). Nowadays, there are several software packages that allow the reviewer to do this; however, Excel from Microsoft offers a great option without the need to pay for an extra package.

Bibliographic System in Excel

Before sharing the particular details about the bibliographic system in Excel, I would like to discuss the knowledge behind it. I first want to give credit to the researchers at the Complex Communication Laboratory (LABCOMPLEX) at the Universidad Nacional Autonoma de Mexico (UNAM), one of the most prestigious universities in Latin America, from whom I learned how to use this tool, and who are leaders in the field of complex thinking and cyberculture. LABCOMPLEX is seeking to promote a cyberculture that is built upon three important social processes or systems: information, communication, and research—all of them in the context of interdisciplinary work. Even though all these systems are equally important, information is the foundation of them all; through information we build new human ecologies from which the number of relationships is endless.

González et al. (2006) proposed the idea of emergent communities in which knowledge is socially constructed and shared; these ideas are all based on the systemic paradigm in which all elements are equally important and interdependent. With information systems, it is possible to build communication and cultural systems that will allow the advancement of knowledge in any field. With a cyberculture, according to these authors, it is possible to adopt new perspectives and new dynamics of interaction among researchers (González et al., 2006). In short, the idea of building information systems in Microsoft Excel is the first to take advantage of existing software for a different use from the functions for which it was originally designed. For the purpose of writing literature
reviews, I have built my bibliographic system in Excel since I started the doctoral program in Educational Leadership at the University of North Florida. I mention this because, as will be seen later in this paper, building the system requires a lot of time and effort at the beginning of the process, which later is beneficial. I need to clarify that my bibliographic system is a simplified version of the original one proposed by the researchers at LABCOMPLEX in Mexico, but one that still encompasses its central idea.

The bibliographic system in Excel consists of six columns as follows: (a) Authors, (b) Bibliography using an appropriate style guide (e.g., American Psychological Association (APA) style, Chicago Manual of Style), (c) Type of document, (d) Quotation-including page numbers, (e) Categories, and (f) Comments (see Figure 1). The reason behind having a column only for authors’ names is that when filters are used in Excel, there is a limit in the number of characters that can be used for the filters to function. In the Bibliography column, I include the full reference of the particular material in APA style so that I do not have to invest additional time citing the references correctly. Type of document is a useful column that allows the reviewer to indicate if the document is a journal article or a chapter of a book. In the Quotation column, I include direct quotations from all documents I read, including the page number(s) from which it is extracted. The reason to include direct quotations is not to use it as it is when writing the literature review (because this would lead to plagiarism), but to be able to paraphrase a particular author’s words with the required precision. Probably the most important part of the bibliographic system is the Categories column. The categories are key words associated with a particular reference that will assist in classifying the information included in the system. This is when knowledge about the topic comes into play because assigning categories requires a building and creative process to structure a particular field in a way that might be nonexistent. In other words, when using categories to classify information from journal articles, as well as from books or electronic documents, the designer of the system is building her or his own voice. This is an iterative process due to the fact that the chances of redefining the categories become higher as a person reads more about a particular topic (Dellinger, 2005; Onwuegbuzie et al., 2010). The process of creating categories is similar to coding and sorting qualitative and quantitative information suggested by Frels and Onwuegbuzie (2010) as an appropriate approach to conducting a comprehensive literature review. I will revisit this component of the system later on when addressing the use of concept mapping. Finally, the section for comments is for writing notes to oneself about a particular reference for later use or even to indicate sections or references that one can use when writing the literature review.

My dissertation topic is in the area of early literacy practices among Hispanic children. When building my system, some of the categories I used were parental involvement, multicultural perspectives, literacy practices, and socioeconomic status, only to cite some topics that are shared among researchers in this field. The category called country of origin is not widely mentioned in the existing literature about my topic, but there are some authors who have suggested that this could be an important factor in determining the type of literacy practices at home among Hispanic families. By choosing to create this category, I am building my own voice to contribute to the existing discussion.

Advantages and Disadvantages of the Bibliographic System

Building the bibliographic system is time consuming, but that is part of the nature of writing a literature review or any other academic endeavor. In some cases, particularly where information is coming from books or from non-searchable PDF files, the person building the system might have to type the particular quotation needed for the system word by word. However, nowadays, there is existing software that allows one to scan documents and later convert them into Word documents (e.g., http://www.pdf2docconverterpro.com/). In the case of journal articles, the html version usually is available, so one can copy and paste easily directly into the system, avoiding the pitfalls of typing that could lead to typographical errors, among other problems (Fink, 2009). Before building the system, it is recommended that the person working on this project reads and highlights the relevant information in articles and books that will be later included into the system. Even though this could be seen as time consuming, it gives the reader the opportunity better to incorporate information because, later, at the point of building the system, the person will have read the same information at least twice, providing ample opportunity to analyze materials and to establish relationships among them. The process of reading and classifying information with categories also is known as constant comparison analysis, a technique suggested by Combs et al. (2010) to cluster information in groups, helping the establishment of relationships among theories, and later during the write-up of the literature review.

The main advantage of having a bibliographic system comes from assigning categories and using the filter tool. Filters are tools used to hide or to show
particular information in a spreadsheet. When the reviewer has finished the inclusion of all the references with their correspondent categories, he/she should select the whole spreadsheet and, under the Home menu, select Filter (see Figure 2). By doing so, the reviewer will create a scroll down menu for each of the columns included in the system: Authors, Bibliography, Type of document, Quotation, Categories, and Comments. Most of the time, the reviewer will filter by categories and by authors. The bibliographic system captures precise ideas from different authors in a way that makes it easier to give the appropriate credit. Giving appropriate credit to the authors of a particular concept is essential in the scholarly world, as a way of showing respect for the work of others (APA, 2010). By creating a new connection among authors working on a particular research topic, the user of the bibliographic system is promoting a cyberculture because new relationships are generated that were nonexistent in the real world (González et al., 2006; Hart, 2005). Moreover, the ability to connect previous research gives the opportunity for doctoral students to contribute to the generativity required and expected from scholars (Boote & Beile, 2005). It also promotes higher cognitive levels instead of just the repetition of what has been stated by others (Combs et al., 2010). This is when the reviewer’s own voice comes into the process due to the fact that the reviewer, as the owner of the system, is building a second-level order of relationships by putting together perspectives of the world that were not necessarily in place (González et al., 2006). If we share our bibliographic systems with other people interested in the same topic, we can enrich our perspectives on education or any other field because each observer who interacts with the system will see different aspects of it. The bibliographic system in Excel allows us to structure a specific reality in a particular way and, in doing so, the system itself will structure new ways of thinking.

Figure 1. Screenshot showing the Bibliographic System in Excel.
USE OF BIBLIOGRAPHIC SYSTEMS AND CONCEPT MAPS: INNOVATIVE TOOLS TO COMPLETE A LITERATURE REVIEW

Figure 2. Screenshot showing how to use Filters.

The Use of Concept Maps

When I already had included approximately 300 references in the bibliographic system, I found new information about my topic that had been recently published. After reading the new material, I faced the challenge of presenting what I had learned from the literature to some members of my committee, and because I did not have sufficient time to include all those references in my bibliographic system in Excel, I decided to create a concept map. I used a free software program called Cmaps Tools (Novak & Cañas, 2008), created by the Florida Institute for Human and Machine Cognition (IHMC) under the leadership of Joseph Novak and Alberto Cañas.

According to Novak and Cañas (2008), concept maps are powerful tools not only for organizing and structuring knowledge, but also for promoting meaningful learning. By structuring knowledge in concept maps, it is easier to identify and to build new knowledge and new meanings. A concept map promotes creativity because the person building it is creating meaningful relationships, knowledge that can later be incorporated into the existing schema of the designer, which makes learning easier (Eggen & Kauchak, 2010; Hart, 2005). When undertaken in an appropriate way, concept maps can promote “high levels of cognitive performance” (Novak & Cañas, 2010, p. 13). Concept maps also are useful for capturing and archiving large volumes of knowledge or information (Novak & Cañas, 2010).
Cmpas tools is a great software program for building maps easily because it allows the user to link various types of files into a particular concept (e.g., text, presentations, maps, tables, images, and websites), which makes it richer in the sense that people can create knowledge models about a particular topic without being limited to a single map (Novak & Cañas, 2008). The other interesting aspect of using this software programs is that it allows the reviewer to archive the concept maps on the Internet so that others around the world can see a map and contribute to it. Also, the reviewer can have access to it from any location. This idea is consistent with the one promoted by people at the LABCOMPLEX in the sense that they both pursue creating knowledge-emergent communities in which knowledge is socially constructed (González et al., 2006).

I built my concept map about the topic of early literacy based on a focused question (see Figure 3), as suggested by Novak and Cañas (2008). According to these authors, a good concept map is one that is built around a particular question because it provides a clear context for what it is included in the map. In other words, concept maps that do not answer a particular question tend to be too broad, which goes against the idea of establishing meaningful relationships among related elements. The process of building a concept map around a focus question is iterative because the question guides the search for information, and the extracted information reshapes the question constantly or creates new questions (Novak & Cañas, 2010).

Figure 3. Concept map about early literacy.
Integrating the Tools

When I used the two tools together, the bibliographic system and the concept map about early literacy, I was faced with the challenge of how to integrate the information contained in both tools. This is when I discovered that the words used in the concept map were indeed the categories I needed to classify all references included in my bibliographic system. What I first decided to do was to include all new references that were represented in the concept map in the bibliographic system. In addition, I revisited the existing categories in the bibliographic system and changed some of them, based on the words included in the concept map. The new categories became the key components in the conceptual framework of my literature review, and even more so, key elements for the design of my study.

The most exciting part of using these two tools occurs when the reviewer actually begins to write the literature review. The best tool for that, at least for structuring the literature review itself, is to use the concept map. Selecting each element included in the concept map and filtering the system in Excel according to these criteria will provide the reviewer with all information related to a particular topic, making the writing process much easier. The reviewer then will have all pertinent references. After reading what all the authors included in the bibliographic system have written, it becomes easier to write a synthesis of the existing discussion about it. In this way, the reviewer, as the writer, can give credit to the authors who have proposed a particular concept without having to dig into the reviewer’s memory or pile of articles, and the reviewer also can avoid unintentional plagiarism. By using these two tools the reviewer will be in a better position to find her/his own voice and the chances of plagiarizing or only summarizing what has been written is lower.

Advantages of these Tools

The existence of plagiarism is a recurrent problem in academia (Ercegovac & Richardson, 2004; Hulsart & McCarthy, 2009), and I believe that one of the reasons behind this problem has to do with the lack of a system to match references with authors. As doctoral students, we all have experienced this: after reading numerous articles and books about a topic, we assimilate terms and concepts, making it difficult to remember to whom to give credit. The importance of giving credit to people who have proposed particular concepts is emphasized by APA not only as a way to respect what others have written previously but also as a great path to finding our own contribution to a specific field.

The use of the bibliographic system in Excel allows the user clearly to identify particular ideas of a specific researcher or author; it also provides a great opportunity for creativity because it promotes new relationships among existing authors interested in the same topic. By building those relationships, the writer is able to find his or her own voice in the sense that his or her own perspective becomes unique. After summarizing, analyzing, and synthesizing the literature, the writer can make supported claims about that literature (Boote & Beile, 2005), instead of just writing an annotated bibliography, a common mistake found in dissertations (Hart, 2005). If the same references included in the bibliographic system are used by another person, a different perspective will appear, and that is part of building emergent communities of knowledge wherein several points of view are shared (González et al., 2006).

If the bibliographic systems in Excel are shared among a group of doctoral students or scholars interested in the same topic, we can promote a new perspective about research conducted collectively, in which researchers not only receive credit for the work they have undertaken but also build a collective perspective that can contribute to solving social issues (González et al., 2006).

When writing the literature review itself, each tool plays a different role. The concept map functions as the outline for the literature review, whereas the bibliographic systems group references in categories. During the writing process, the writer can color code each reference that has been used so that it becomes easier to look for new information related to a particular topic. The richness of the literature review increases by using the bibliographic system because the writer easily can track what has or has not been included and even make notes about how a particular reference can be used later in additional sections.

When using the two tools, the writing process is faster because all the required information is already consolidated in one system that is easily accessible. Many other options exist for integrating these two tools such as creating links with the original articles in PDF files, which can be conducted with both tools. Each user can explore many other options to discover how having a consolidated system enriches the researcher’s perspective on the topic and provides new solutions for old problems.

In addition, the combined use of the bibliographic system with concept maps could contribute to a better understanding of the literature review as a dynamic chapter that evolves from the proposal to the dissertation itself, and not as a “static artifact” (Boote & Beile, 2005, p.11). Writing a literature review, as part of any research endeavor, needs to be understood as an “iterative, complex, contradictory, ambiguous, and hence extremely
messy” process (Onwuegbuzie et al., 2010, p. 174). The fact that the dissertator is able to have an organized system with all references also facilitates the development of a rationale for the selection of particular articles as part of the literature review (Frels & Onwuegbuzie, 2010).

**Conclusion**

Building the two tools and integrating them is time consuming as I mentioned before. However, the allocation of this time is rewarded at the point of writing the literature review, which could take only a few weeks. My personal experience in using these two tools has been extremely valuable. Not only did I write the first draft of my literature review in approximately two weeks, but I also found the process of making adjustments to be easier because there is a sense of ownership that comes from using the two tools. The use of the bibliographic system in Excel and the concept maps helps the reviewer to create a good synthesis of the existing research, generating new knowledge and also contributing to the generativity expected from scholarly work (Boote & Beile, 2005). I highly recommend that doctoral students and professors use these two tools because their perspectives on their research interests can be enriched greatly, and with more powerful knowledge, I am certain that we can find better solutions to educational problems.

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**References**


