

## To Write or not to Write with Discipline?: Writing Error-Based Predictors of Editor's Decision of Manuscripts Submitted to *Research in the Schools*

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Much has been written about the importance of writing with discipline in order to increase the publishability of manuscripts submitted to journals for consideration for publication. More specifically, empirical evidence has been provided that links American Psychological Association (APA) errors, citation errors, reference list errors, and grammatical errors to manuscript rejection by the editor. However, each of these types of writing errors has been studied in isolation. Thus, in this study, we analyzed simultaneously these 4 sets of errors in 56 manuscripts submitted to the journal *Research in the Schools* over a 3-year period. Number of reference list errors was the best predictor of manuscript disposition, followed by number of APA errors. Implications of these findings are discussed.

**Keywords:** *Research in the Schools*, Writing with discipline, Manuscript rejection, Manuscript acceptance, citation errors, reference list errors, APA errors, grammatical errors

In most institutions of higher learning, (regularly) securing the publication of journal articles provides administrators with information that they can use to make personnel-related decisions regarding hiring, tenure, promotion, merit pay, and the like. Thus, for most academics, the importance of securing journal article publications cannot be overstated. Unfortunately, many—if not most—faculty members worldwide find it challenging to write manuscripts that are publishable in their selected journals representing disciplines or fields from the social, behavioral, health, and human sciences. This challenge is particularly the case for beginning authors, including doctoral students and early-career faculty members.

Although only the most established authors can guarantee that the reviewers and editors will like the content of a manuscript, or at least, recognize its importance, as identified by Onwuegbuzie (2016a), there are two aspects of any manuscript that all authors can produce to avoid criticism, as follows:

There are two elements of a manuscript that all

authors can control: adherence to the style guide and adherence to grammatical rules. Authors cannot guarantee how much the topic of manuscript is liked by the reviewers and editor. However, they can guarantee that it is well written if their manuscript is as error free as possible with respect to these two elements. And good things are much more likely to happen when a manuscript is well written. So, it is advantageous to write with discipline. (p. 69)

A series of recent studies provides support for the last two sentences. In particular, authors of these works have made evident the importance of avoiding violations to the American Psychological Association (APA) style guide (APA, 2010) in the abstract (Hahs-Vaughn, Onwuegbuzie, Slate, & Frels, 2009) and the body of the manuscript (Frels, Onwuegbuzie, & Slate, 2010b; Onwuegbuzie, 2016b, 2017, 2018; Onwuegbuzie & Combs, 2009; Onwuegbuzie, Combs, Slate, & Frels, 2010), as well as in the reference list (Onwuegbuzie, Combs, Frels, & Slate, 2011; Onwuegbuzie, Frels, & Slate, 2010; Onwuegbuzie, Hwang, Combs, & Slate, 2012; Onwuegbuzie, Hwang, Frels, & Slate, 2011; Onwuegbuzie, Waytowich, & Jiao, 2006; Waytowich, Onwuegbuzie, & Jiao, 2006) and table (Frels, Onwuegbuzie, & Slate, 2010a) sections of empirical and non-empirical (e.g., methodological, conceptual, theoretical) manuscripts submitted to a journal for review for possible publication. Most notably, Onwuegbuzie, Combs, et al. (2010) documented that manuscripts that contain nine or

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# TO WRITE OR NOT TO WRITE WITH DISCIPLINE? WRITING ERROR-BASED PREDICTORS OF EDITOR'S DECISION OF MANUSCRIPTS SUBMITTED TO RESEARCH IN THE SCHOOLS

more different APA errors are 3.00 times (95% confidence interval [CI] = 1.31, 6.87) more likely to be rejected than are manuscripts containing less than nine APA errors. Further, Onwuegbuzie et al. (2006) reported that manuscripts submitted to *Research in the Schools (RITS)* that contain more than three citation errors are approximately four times more likely (odds ratio = 4.01; 95% CI = 1.22, 13.17) to be rejected than are manuscripts with three or less citation errors. In addition, Onwuegbuzie, Hwang, et al. (2011) documented that reference list errors are a statistically significant predictor of whether a manuscript is rejected or not, with a very large effect size ( $d = 0.83$ ). Also, Onwuegbuzie (2017) observed that that manuscripts submitted to *RITS* that contain more than five grammatical errors are approximately 1.5 times more likely (odds ratio = 1.52; 95% CI = 1.01, 2.32) to be rejected than are manuscripts with five or less citation errors. Findings from these four sets of works have demonstrated the importance of writing with discipline when writing manuscripts for consideration for publication in journals.

As informative as each of these studies has been, all of them involved the examination of the four sets of writing errors (i.e., APA errors, citation errors, reference list errors, and grammatical errors) in isolation. To date, no researcher has examined these four sets of writing errors simultaneously—that is, within the same study. Thus, the purpose of this study was to determine what writing errors are the best predictors of whether or not a manuscript is rejected for publication by the editor.

## Method

### Sample Size and Procedures

To analyze the predictability of the four sets of writing errors among manuscripts submitted to a journal, I examined 56 manuscripts submitted to *RITS* over a 3-year period. These manuscripts represented approximately 50% of all manuscripts submitted to this journal over this time frame, which made these findings, at the very least, generalizable to the population of manuscripts submitted to *RITS*. The sample size of 56 was selected via an a priori statistical power analysis. Specifically, it represented the sample size needed to detect a moderate multivariate relationship (i.e.,

discriminant analysis;  $f = .24$ ) simultaneously for the dependent measures (i.e., 4 writing error variables) between the two groups (i.e., manuscripts that were rejected vs. manuscripts that were not rejected) at the 5% level of statistical significance and a power of .80.

For each of the 56 manuscripts submitted to *RITS* over this time period, we meticulously documented every APA error, citation error, reference list error, and grammatical error committed by these 56 sets of authors. Each manuscript took up to 4 hours to identify all these errors—representing as many as 224 hours of coding. In addition, we noted several demographic features of the manuscript (e.g., number of authors, gender of lead author, genre of manuscript), as well as the disposition of the manuscript. As such, the data set created was extremely rich.

Finally, we used SPSS to conduct a discriminant analysis to determine the predictability of the four writing error variables with respect to manuscript disposition (i.e., reject vs. non-reject [i.e., accept, revise and resubmit]) among manuscripts submitted to *RITS*.

### Analysis

Descriptive statistics (i.e., measures of central tendency, measures of variation) were used to determine the prevalence rates of each type of writing error. Furthermore, a discriminant analysis was used to determine which writing errors discriminated the two sets of manuscripts (i.e., manuscripts that were rejected vs. manuscripts that were not rejected).

### Results

Table 1 presents the means and standard deviations pertaining to the four writing error variables. It can be seen from this table that reference list errors yielded the highest prevalence rate, followed relatively closely by APA errors. Citation errors and grammatical errors had similar prevalence rates, with citation errors being approximately two fifths as prevalent as APA errors (39.0%) and reference list errors (43.8%), and grammatical errors being approximately one third as prevalent as APA errors (30.7%) and reference list errors (34.5%). Interestingly, the number of unique grammatical errors yielded the least variability.

Table 1

Means and Standard Deviations Pertaining to the Four Writing Error Variables Among Manuscripts Submitted to Research in the Schools

Variable	<i>M</i>	<i>SD</i>
Number of Unique APA errors	12.68	5.00
Number of Unique Citation Errors	5.55	5.92
Number of Unique Reference List Errors	14.23	7.69
Number of Unique Grammatical Errors	4.38	1.94

An All Possible Subsets (APS) canonical discriminant analysis procedure was conducted to determine which of the four sets of writing errors (i.e., APA errors, citation errors, reference list errors, grammatical errors) best predicted whether the editor's decision for a manuscript was reject versus non-reject (i.e., revise and resubmit or accept). Each of the four writing error variables served as a predictor variable, with the editor's decision serving as the dependent variable. All possible models involving some or all of the four writing error variables were examined. Indeed, in APS discriminant analyses, separate discriminant functions are computed for all thematic variables singly, all possible pairs of thematic variables, all possible trios of thematic variables, and so on, until the best subset of writing error variables is identified according to some pre-specified criteria. For this study, the criteria used were Wilks' lambda, the probability level (i.e. *p* value), the canonical correlation coefficient (which served as a measure of effect size), the standardized canonical discriminant function coefficients, and the structure coefficients. It should be noted that the APS discriminant analysis is different from stepwise discriminant analysis, in which the order of entry of variables is based solely on the probability level. In fact, stepwise discriminant analysis does not guarantee the optimal model, and thus many researchers (e.g., Onwuegbuzie & Daniel 2003; Thompson, 1995) criticize this type of analysis, instead advocating some form of canonical discriminant analysis.

The selected model indicated that all four writing error variables contributed statistically significantly to the prediction of the editor's

decision. Specifically, the canonical discriminant analysis revealed a statistically significant canonical function ( $\chi^2[4] = 6.4, p < .05$ ; Wilks's Lambda = 0.88). The corresponding canonical correlation was .34, which suggested a medium effect size (Cohen, 1988). In addition, the group centroid (the average score on the discriminant function for manuscripts in both groups) for this function was .23 for manuscripts that were rejected and -.54 for manuscripts that were not rejected. These statistics indicated that the discriminant function maximally separated manuscripts that were rejected from manuscripts that were not rejected.

An examination of the standardized canonical discriminant function coefficient (Table 2) revealed that, using a cutoff loading of 0.3 (Lambert & Durand, 1975; Tabachnick & Fidell, 2007), all four writing error variables were practically significant. Further, the structure coefficients (i.e., structure matrix) between the independent variable set and the standardized canonical discriminant function (Table 2) indicated that, using a cutoff loading of 0.3 (Lambert & Durand, 1975; Tabachnick & Fidell, 2007), reference list errors, APA errors, and citation errors discriminated manuscripts that were rejected and manuscripts that were not rejected. Only grammatical errors did not discriminate these two groups of manuscripts. For both the standardized canonical discriminant function coefficient and the structure matrix, reference list errors was the most significant predictor of manuscript disposition. This error type was followed in importance by APA errors. All the variables had a negative coefficient, suggesting that manuscripts that contained these formal grammatical errors were more likely to be rejected.

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Table 2

Standardized and Structure Coefficients for Selected Writing Error Variables Predicting Editor's Decision of Manuscripts Submitted to Research in the Schools

Variable	Standardized Coefficient	Structure Coefficient
Reference List Errors	-0.70*	-.62*
APA Errors	-0.66*	-.47*
Citation Errors	-0.63*	-.30*
Grammatical Errors	-0.35*	-.20

\*coefficients with effect sizes larger than .3 (Lambert & Durand, 1975)

A comparison of the standardized and structure coefficients revealed that the grammatical errors variable was a suppressor variable because it had a significant standardized coefficient (i.e.,  $> .30$ ) coupled with a non-significant structure coefficient (i.e.,  $> .30$ ) (Henson, 2002; Onwuegbuzie & Daniel, 2003). Suppressor variables are variables that aid the prediction of the dependent variable due to their correlation with other independent variables (Tabachnick & Fidell, 2007).

#### Discussion

More than a dozen years ago, Onwuegbuzie and Daniel (2005) documented that manuscripts submitted to *RITS* that are poorly written overall are approximately 12 times more likely to be rejected, on average, than are well-written manuscripts. This was the first study to provide direct empirical evidence of the benefits of writing with discipline when preparing journal manuscripts. Since then, a series of studies has helped to deconstruct what it means to write without discipline (Frels, Onwuegbuzie, et al., 2010a, 2010b; Hahs-Vaughn et al., 2009; Onwuegbuzie, 2016b, 2017, 2018; Onwuegbuzie & Combs, 2009; Onwuegbuzie, Combs, et al., 2010, 2011; Onwuegbuzie, Frels, et al., 2010; Onwuegbuzie et al., 2012; Onwuegbuzie, Hwang, et al., 2011; Onwuegbuzie et al., 2006; Waytowich et al., 2006). The present study has replicated and extended some of these studies by examining simultaneously the predictability of four types of writing errors (i.e., APA errors, citation errors, reference list errors, grammatical errors) with respect to whether or not a manuscript is rejected for publication by the editor.

Findings revealed that all four writing error variables play a significant role in predicting manuscript disposition, which suggests that these writing error variables not only are important in isolation but also play a role simultaneously. The order of predictability of the variables directly related to manuscript disposition was reference list errors, APA errors, and citation errors. It is possible that the relationship between these three writing error variables and manuscript disposition reflects

authors who show similar attention to detail to other aspects of their manuscripts (e.g., procedures, findings) as they do with regard to their adherence to APA, citing works, compiling of reference lists, and use of grammar. In other words, authors who are careless with respect to APA, citations, reference lists, and grammar also are more likely to be careless with respect to other aspects of their manuscripts, thereby increasing their chances that their manuscripts would be rejected—and vice versa. However, because the present findings are correlational, follow-up studies are needed, optimally using mixed research techniques (see, for e.g., Johnson & Onwuegbuzie, 2004; Johnson, Onwuegbuzie, & Turner, 2007; Tashakkori & Teddlie, 2010), to explore the causal nature of this relationship between this set of writing errors and overall quality of manuscript.

The findings that (a) the number of reference list errors was the best predictor of manuscript disposition and (b) that the number of citation errors also was a significant predictor of manuscript, coupled with Onwuegbuzie, Frels, Hwang, and Slate's (2013) finding that manuscripts submitted to *RITS* that received an editor decision of accept or revise and resubmit contained statistically significantly and moderately significantly more references than did *RITS* manuscripts that received an editor decision of reject (Cohen's  $d = 0.53$ ), suggest that both the quality and quantity of citations/references make a difference to the appeal of a manuscript to reviewers and the editor.

Further, that grammatical errors served as a suppressor variable has intuitive appeal because some grammatical errors also represent APA errors. Indeed, grammatical errors are discussed exclusively within 10 pages (i.e., pp. 77-86) of the 240 pages of the body of APA's (2010) Publication Manual—representing 4.17% of the book. Consistent with this link, the number of grammatical errors was statistically significantly related to the number of APA errors ( $r = .32, p = .015$ ) but was not statistically significantly related either to the number

of reference list errors ( $r = .08$ ,  $p = .56$ ) or to the number of citation errors ( $r = .24$ ,  $p = .07$ ).

In conclusion, the present findings have provided compelling evidence of the potentially important role that APA errors, citation errors, reference list errors, and grammatical errors play in both the reviewer recommendation and editor decision process. Indeed, regardless of whether the link between these writing error types and manuscript disposition is causal in nature, it is difficult to argue that striving to minimize APA errors, citation errors, reference list errors, and grammatical errors in manuscripts is not a worthwhile goal. Moreover, as a set, it is likely that these error types increase communication vagueness, and communication vagueness recently has been linked to manuscript rejection (Onwuegbuzie, 2018). And based on the mean number of APA errors, citation errors, reference list errors, and grammatical errors identified in this study and previous studies, it is clear that graduate students in general and doctoral students in particular should receive instruction not only on the subject matter of their fields/disciplines coupled with research methodologies but also on how to write with discipline when writing empirical and non-empirical manuscripts. Unfortunately, compared to research methodology courses, writing appears to be of secondary importance (Boote & Beile, 2005; Onwuegbuzie, 2018; Onwuegbuzie & Frels, 2016). Yet, without such training in writing, it is likely that many students will continue to write without discipline beyond the completion of their degrees and into the world of academe. And rather than assuming that doctoral students can train themselves in writing, the skills needed to write with discipline by avoiding APA errors, citation errors, reference list errors, and grammatical errors should be taught explicitly. However, implementing a stand-alone writing course into a doctoral curriculum is not sufficient. Rather, the imparting of writing skills should permeate the doctoral curriculum, optimally being incorporated into as many doctoral courses as possible in such a way that writing skills are not taught in isolation.

Without such writing skills, how can faculty members expect doctoral students to write quality dissertations/theses, and, once graduated, to write manuscripts that are publishable? And without the ability to write publishable manuscripts, it will be difficult for students to be effective producers of research, and, in turn, publish rather than perish.

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## DIFFERENCES IN FACULTY RESEARCH MOTIVATION: HOW GENDER, TENURE STATUS, YEARS IN HIGHER EDUCATION, RANK, AND TYPE OF DEGREE IMPACT PRODUCTIVITY

avoidance were orthogonally related ( $r = .04$ ) demonstrating discriminant validity (Deemer et al., 2010). Positive correlations were found in the Deemer et al. (2010) study for comparisons between these sub-scales and constructs measured by other tools, specifically between (a) intrinsic reward and academic intrinsic motivation (Vallerand et al., 1992) and drive motivation (Carver & White, 1994), (b) extrinsic reward and academic extrinsic motivation (Vallerand et al., 1992) and reward sensitivity (Carver & White, 1994), and (c) failure avoidance and amotivation (Vallerand et al., 1992) and fear of failure (Lang & Fries, 2006). Deemer et al. (2010) also identified internal consistency for scores pertaining to subscales of the RMS, as follows: intrinsic reward ( $\alpha = .90$ ), failure avoidance ( $\alpha = .79$ ), and extrinsic reward ( $\alpha = .78$ ). In a later study with a population of science, technology, education, and mathematics (STEM) faculty,

Deemer, Mahoney, and Ball (2012) found very similar internal coefficients: intrinsic reward ( $\alpha = .90$ ), failure avoidance ( $\alpha = .74$ ), and extrinsic reward ( $\alpha = .70$ ).

For the current study, an analysis of scree plot from the exploratory factor analysis identified five sub-factors. Assumptions of exploratory factor analysis were met: normality, linear relationships between pairs of variables, and the variables being correlate at a moderate level. Communality estimates and the proportion of variance for each factor are presented in Table 1. Relatively high Cronbach's alphas were found for each sub-factor: failure avoidance ( $\alpha = .78$ ), intrinsic reward – satisfaction ( $\alpha = .73$ ), intrinsic reward – joy ( $\alpha = .82$ ), extrinsic reward ( $\alpha = .77$ ), and well-being/be recognized ( $\alpha = .64$ ). The overall score reliability was .78.

Table 1

### *Variables, Factor Loadings, and Communalities*

Variable	Sub-factor 1: Failure	Sub-factor 2: Intrinsic	Sub-factor 3: Intrinsic joy	Sub-factor 4: Extrinsic leave mark on field	Sub-factor 5: Extrinsic	Communality
Concerned of failure	.778	.163	.103	.212	-.146	.606
Focus more energy on other research	.671	-.074	-.151	-.225	.172	.506
Avoid negative outcomes	.631	.141	.106	-.010	-.085	.514
Want to give up	.599	.227	-.010	-.059	.155	.493
Earn respect	-.549	.242	-.074	.278	.031	.444
Pursue less difficult research	.526	.045	.154	.183	-.082	.383
Move on if failure	.367	.040	.058	-.084	.283	.334
Satisfaction	-.011	.678	.317	.171	.007	.539
Learn new things	.070	.600	.188	.163	.059	.518
Great pleasure	.130	.579	.164	.197	.240	.497
Need to understand	.219	.384	.255	.096	.178	.428
Enjoy doing research	-.009	.212	.822	.161	-.093	.586
Research is enjoyable	.268	.409	.601	.193	.248	.678
Conduct research for joy of it	.061	.467	.578	.154	.043	.604
Time flies by	.120	.195	.570	-.034	.346	.520
Leave my mark	.069	.185	.062	.813	-.066	.648
Receive awards	-.102	.186	.240	.745	.169	.712
Recognized as competent	-.069	.315	.070	.469	.355	.498
Recognized for sound research	-.231	.209	.098	.511	.653	.658
Well-being	.115	.371	.426	.116	.486	.527
% of variance	13.87	11.43	11.29	10.59	6.38	53.55

**Analysis**

The data were imported from RedCAP (Harris et al., 2012) into IBM SPSS version 22. The research question, ‘How well does tenure status, rank, gender, years in higher education, and type of degree predict motivation to conduct research?’ was analyzed via multiple linear regression. The nominal variable of *rank* was changed into three dummy variables. Multicollinearity was assessed by conducting three multiple linear regression analyses with variables removed with low tolerance values. Assumptions of multiple linear regression including linearity, normally distributed errors, and uncorrelated errors were checked.

**Results**

The means, standard deviations, and intercorrelations for all seven variables are presented in Table 2. First, multicollinearity was assessed using the guideline of tolerance values needing to be greater than  $1 - R^2$  (Hair, Anderson, Tatham, & Black, 1995), which for this dataset was .80. A multiple linear regression was conducted with all seven variables in the model and was found to be

statistically significant,  $F(7, 69) = 2.46, p = .026, R^2 = .20$ . Unfortunately, five variables demonstrated multicollinearity: Associate, Assistant, Full, years in higher education, and tenure. The lowest tolerance values were Assistant (tolerance = .249), tenure (tolerance = .302), years in higher education (tolerance = .520), and Associate (tolerance = .603). Because Assistant and tenure had the lowest tolerance values, it was thought that they might be measuring similar constructs. Therefore, Assistant was removed from the analysis and a multiple linear regression was conducted and was found to be statistically significant,  $F(6, 70) = 2.91, p = .014, R^2 = .20$ . The tolerance values of the variables of years in higher education (tolerance = .606) and tenure (tolerance = .636) were still lower than .80; therefore, years in higher education was removed. Multicollinearity was assessed for the model with the remaining variables and none was found. Assumptions were checked for this final model and all were met.

Table 2

*Means, Standard Deviations, and Intercorrelations for Research Motivation Predictor Variables*

Variable	M	SD	1	2	3	4	5	6	7
Predictor Variable	.23	.43	-	-.28	-.15	.04	.18	-.29	-.11
1. Associate	.20	.40		-	-.13	-.72	-.05	-.49	.10
2. Assistant									
3. Full	.07	.25			-	-.20	.06	-.06	-.17
4. Tenure	.69	.47				-	-.12	.57	-.11
5. Gender	.55	.50					-	-.21	.01
6. Years in higher education	21.28	13.53						-	-.09
7. Degree	.88	.33							-

Utilizing the five predictor variables, a multiple linear regression analysis was conducted to assess how well this model predicted research motivation. The variables of Associate, Full, type of degree, gender, and tenure statistically significantly predicted research motivation,  $F(5, 71) = 2.83, p = .022, R^2 = .17$ . The final model was

$$\hat{Y} = 77.41 - 4.23(\text{Associate}) - 11.52(\text{Full}) + 4.68(\text{Degree}) + .17(\text{Gender}) - .06(\text{Tenure}) + \epsilon$$

The variables that statistically significantly contributed to the model were Associate and Full

professor. The model indicates that being an associate professor is related to decreases in motivation to conduct research by 4.23 units, and being a full professor is associated with decreases in motivation by 11.52 units, assuming that all variables are in the model. Furthermore, having a Ph.D. is associated with increases in research motivation by 4.68 units, assuming that all variable are in the model. Table 3 presents the beta weights, standardized beta weights, and error.



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Table 3

*Multiple Linear Regression Analysis Summary Predicting Research Motivation from Rank (Associate, Full), Type of Degree, Tenure Status, Gender, and Tenure Status (N = 77).*

Variable	B	SEB	$\beta$
Model 1			
Associate	-4.23	2.00	-.24*
Full	-11.52	4.29	-.30*
Degree	4.68	2.71	.19
Gender	.17	1.71	.01
Tenure	-.06	1.81	-.004
Constant	77.41	3.25	

\* $p < .05$

**Discussion**

This exploratory quantitative research study was undertaken because the production of research is an important function of institutions of higher education (Carnegie Foundation for the Advancement of Teaching, 2010; Edgar & Geare, 2013; McCormick & Zhao, 2005), and yet little is known about what motivates faculty researchers (Åkerlind, 2008). This study investigated the following research question: How well do tenure status, rank, gender, years in higher education, and type of degree predict motivation to conduct research?

Results indicate that being an associate professor is associated with a decrease in motivation to conduct research, and that being a full professor is associated with a further decrease in motivation, and both decreases are statistically significant. More specifically, the model predicts that being a full professor almost triples (by a factor of 2.74) the decrease in motivation as compared to being an associate professor. Full professors' motivation to be productive researchers is discouragingly low. It is possible that this finding speaks to the traditional rewards system in higher education wherein there are few ranks in the tenure-track system and once the highest (i.e., Full) is attained, there is little incentive to publish.

Furthermore, results showed that faculty holding a Ph.D. degree are more motivated to conduct research than are those with an Ed.D. degree. Although degree difference did not statistically significantly contribute to the model, the variable affects the motivation score by nearly 5 points, having a larger impact on motivation score than being an associate professor. We argue that,

based on the size of impact on the overall score, type of degree is an important variable to discuss. When considering the overall regression equation, it is apparent that the coefficient for Associate is approximately equal to, but opposite in direction of, the coefficient for Degree. The interpretation is that an associate professor with a Ph.D. degree has a small positive motivation to conduct research; and this motivation is somewhat stronger for women than for men. It also means that an associate professor who holds an Ed.D. degree is predicted to have considerably lower research motivation than his or her counterpart holding a Ph.D. degree. Thus, the type of degree affects faculty motivation to conduct research, holding other variables constant. This difference might be related to the more applied nature of the Ed.D. coursework compared to a deeper research focus of the Ph.D. coursework (Iceman Sands et al., 2013).

These results support previous findings of research conducted on productivity related to rank (Blackburn & Lawrence 1995; Creamer, 1998; Lewis, 1998), wherein a negative relationship between tenure and productivity has been documented. This study further supports the possibility that the variable at work in the negative relationship between tenure and productivity (perhaps a variable like job security) is also at work in the relationship between productivity and being an associate professor or full professor. Considering that the decrease in productivity is nearly tripled as rank increases from associate to full professor, it appears that obtaining tenure provides a significant disincentive for productivity among faculty in higher education. This study's implications

regarding type of doctoral degree contribute to a previously unreported area in the literature.

The majority of the extant literature includes research focusing on qualities of the faculty and institutions in question, as well as the quality of the relationship between the two. However, none of the studies or conceptual frameworks mentioned focus on the area of job security specifically or findings related to different doctoral degrees. Implications regarding rank perhaps call for further examination of the higher education rewards and job security system (e.g., should there be more levels? should associate and full professor ranks be periodically renewed with the possibility of not being maintained if there are too few publications?). There might be other factors not considered in this study that act as incentives or disincentives for tenured faculty to be productive. All of these represent areas for future research. This exploratory study adds to the extant literature by pointing to more specific areas of study, including the relationships among job security, type of degree, and productivity.

Limitations to this study include the selection of variables considered in the model and sample size and representativeness. The model used in this study is focused on a few, specific areas of the Gappa et al. (2007) framework and explains a relatively small (17%) amount of the variance. The broader Gappa et al. framework includes several additional aspects, such as academic freedom and autonomy, professional growth, respect, employment equity, flexibility, collegiality, faculty satisfaction, and commitment to the institution, among others, which were not measured in this study and potentially impact productivity. One area for further research would be to examine the impact of some or all of the additional Gappa et al. framework variables on faculty research. With regard to the sample, a larger sample would allow for stratification by key variables (e.g., gender), which were significant in other studies, such as Creamer's (1998) study, to achieve a sample more representative of the population. For example, to the extent that gender impacts research motivation and coefficients in the final model of analysis for this study, the difference between the ratio of men to women used in this sample and that of the general population of institutional faculty might have limited the results.

When considering that the average number of publications submitted for publication each year by faculty might number in the thousands (Fanelli & Larivière, 2016), the decreases predicted by this model highlight significant differences in productivity according to the variables of rank and degree type. Results of this exploratory study can serve to inform higher education faculty, administrators, and others regarding specific faculty and institutional characteristics that enhance motivation to conduct research, and this, in turn, can lead to an understanding of how to bolster research

productivity for faculty in institutions of higher education.

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## The Preferences of Q Methodologists at the Factor-Analytic Stage: An Examination of Practice

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Q methodology (Q) offers an empirical method for studying subjectivity and revealing multiple divergent viewpoints. Q's technique is the sorting of statements related to the topic and its method is the factor analyzing of those sorts to group people with similar viewpoints. Mixed information exists about Q methodologists' practice at the factor-analytic (FA) stage. This mixed methods research study used quantitative and qualitative data regarding Q methodologists' factor extraction, rotation, and goals of FA in Q. The findings demonstrate that varied practices related to factor extraction and rotation exist among Q methodologists, including undocumented combinations of factor extraction and rotation most in conflict with Q's founder's preferences. Qualitative data indicated 8 themes concerning preferences in the FA stage in Q.

Keywords: Q methodology, mixed methods, survey, factor analysis, concourse, Q sample

*To begin with, everything is intrinsically subjective; the Q sorter is unaware of the factors; nor can the scientist predict them. Everything is referential; the Q sorts are correlated one with another, bringing past and future into the present in the process. The factors are themselves Q sorts, theoretical, and decision structures, telling us what to do in relation to the subject in this context. It clearly enlarges the context with regard to the behavior at issue...*

William Stephenson, *How to Make a Cup of Tea*, 1987, page 46

Q methodology (Q) is a mixed method that contains a set of statistical, philosophy-of-science, and psychological principles that offers a scientific approach to studying subjectivity in the social sciences. Q's technique is the sorting of statements related to the topic and its method is the factor analyzing of those sorts to group people with similar viewpoints. Q's creator, William Stephenson (1953), stated that within these principles, factor analysis is to be reformulated. Brown (2008) suggests that Q methodology's foundation for the systematic study of subjectivity draws in those interested in qualitative aspects of human behavior: "Only subjective opinions are at issue in Q, and although they are typically unprovable, they can nevertheless be shown to have structure and form..." (Brown, 1986, p. 58). This structure

emerges via factor analysis. However, little information exists about Q methodologists' practice during and goals concerning the factor-analytic stage within Q. This mixed methods research study used quantitative and qualitative data regarding Q methodologists' factor extraction, rotation, and goals of factor analysis in Q using a survey distributed to the relatively small Q community. The purpose of this study was to determine what combinations of factor extraction (principal components analysis [PCA], centroid, or other) and factor extraction (varimax, hand, or other) that Q methodologists used during the factor-analytic stage of Q as well as extracting statements that indicate Q methodologists' thinking during this stage of Q, including goals related to factor analysis in Q studies.

### **Theoretical Framework of Factor Analysis in Q**

Q's factor-analytic stage is one part of a larger methodology and, therefore, this stage should be considered within the larger context of Q methodology. The stages of any Q study consist of the following: collect a concourse of communications (statements) about the topic; select the Q-sample (a subset of the concourse that represents the range of communications on the topic); have participants sort the Q-sample (Q sort); determine the Q factors by factor analyzing the sorts; and interpret the Q factors as descriptions of divergent perspectives (Brown, 1980; Ellingsen, Størksen, & Stephens, 2010; McKeown & Thomas, 1988; Newman & Ramlo, 2010). As might be obvious from these stages, Q is an inherently complex mixture of qualitative and quantitative research methodologies and its theoretical and philosophical framework embraces this mixture (Ramlo, 2015, 2016a, 2016b).

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## THE PREFERENCES OF Q METHODOLOGISTS AT THE FACTOR-ANALYTIC STAGE: AN EXAMINATION OF PRACTICE

Stenner and Stainton-Rogers (2004) explain that Q's qualitative-quantitative hybridity is best represented by the unique identifier qualiquantology. Additionally, they discuss how such hybridity creates discomfort. This hybridity of Q exists within its factor-analytic stage (Ramlo, 2015, 2016b). The more common use of R factor analysis to group items also impacts views and practice related to factor analysis in Q (McKeown & Thomas, 2013; Ramlo, 2015). The mistaken view that Q methodology is simply inverted R factor analysis adds to this confusion (McKeown & Thomas, 2013).

Therefore, it is perhaps not surprising that Q methodologists and others, outside of the Q community, struggle with Q's factor-analytic stage. This is not to say that volumes such as Stephenson (1953), Brown (1980), and McKeown and Thomas (2013) have not described the details of preferred factor extraction (centroid) and rotation (hand rotation also known as theoretical rotation) within Q. Yet, Q methodologists' factor-analytic practice and goals of that practice are often unknown. For instance, it is not unusual for Q methodologists to glean over details of their factor-analytic choices in their Q publications (Kampen & Tamás, 2014). For this reason, the researcher collected quantitative and qualitative data from Q methodologists about their practice and goals for the factor-analytic stage within Q. Although this study did not involve the use of Q, it is nonetheless important to understand Q's methodology, including its factor-analytic stage, while considering this study.

### **Describing factors**

The Q factors that emerge from the factor analysis in Q denote *qualitative* differences in perspective sometimes referred to as divergent viewpoints. These multiple viewpoints are reliable, empirical, easily replicated, and grounded in concrete behavior (Brown, 1980). The Q factors are also wholly dependent upon the sorts provided by the participants. The sorts' interrelationships remain fixed even during rotation, which simply changes the axes but not the relationships among the sorts (Brown, 1980; Stephenson, 1953). The Q factors are also described by the factor arrays (sorts representing the factors) that are a result of the analyses. In addition, distinguishing statements between pairs of Q factors, as well as consensus statements, are provided as part of the analyses (Newman & Ramlo, 2010).

Yet Q methodology, especially its factor-analytic stage, often remains misunderstood (Ramlo, 2015, 2016b; Brown, Danielson, & van Exel, 2015) and inconsistencies between theory and practice appear to exist. Examination of Q methodologist's practice during the factor-analytic stage in relation to Q's methodology was the goal of this study.

### **Factor Analysis from a Q Perspective**

With his essay on *How to Make a Cup of Tea*, Stephenson (1987) was attempting to demonstrate the implications of subjectivity on behavior including decision making which, in turn, demonstrated the importance of Q methodology as an objective science of subjectivity. Stephenson (1979) also stressed the importance of Newton's Fifth Rule with its focus on inductivism rather than deductivism, the hypothesis-testing that is the focus of current objective science. Stephenson (1987) insisted that there is strong reason to assert that "Q factors are inherent decision structures for a given context. Research and scholarship, with respect to them, and intervention in societal and individual contexts, are given a green light" (p. 50). In *Introduction to Q-Methodology*, Stephenson (1993/4) argued for factor analysis rather than variance analysis within Q with a caveat that this is not R factor analysis:

Factor theory, in the Q-form (but not R), maintains self-reference at the center of all else. Its 'effects' are self-references. But it is also in line with the theories of relativity in physics, and with quantum mechanics: its concern is with probabilities which are not predictive. (p. 13)

Stephenson (1953) indicated that such scientific exploration is uninhibited when Q methodologists use the factor-analytic choices of centroid extraction and hand (judgmental or theoretical) rotation.

### **Q Critiques**

However, perhaps because of its mixture of qualitative and quantitative methodologies (not just methods), misunderstandings about the factor-analytic stage in Q sometimes appear in publications. A good example of these misunderstandings is from Kampen and Tamás (2014), who stated that they had performed an *audit* of Q methodology with a focus that included what they perceived as the steps typically followed at the factor-analytic stage of a Q methodology study. Brown et al. (2015) responded in kind with criticisms of this audit and provided counters to the claims by Kampen and Tamás (2014) primarily with an historic lens, including Q's development, conceptual framework, and critiques. However, Brown et al.'s (2015) response did not offer an audit of Q methodologists' practice within the factor-analytic stage most probably because no accurate summary of practice has been published. Certainly, Kampen and Tamás (2014) speak to this point but their literature review is limited and Q methodologists often do not report their factor-analytic choices in manuscripts to journals unless they are Q journals such as *Operant Subjectivity: The International Journal of Q Methodology* (OS), which is currently not indexed. Kampen and Tamás (2014) did not include publications from OS in their audit. However, the actual practice of Q methodologists at the factor-analytic stage is of interest to Q methodologists and those interested in

Q. By examining Q methodologists' factor-analytic preferences and thinking during this important stage of all Q methodology research, important insight can be gained that will inform Q methodologists and, more broadly, mixed methods researchers.

### Summary of the Problem

It is within this framework that this investigation of Q methodologists' preferences regarding the factor-analytic stage of Q methodology takes place. The stages of Q methodology are well documented with relatively little controversy except for the analysis/factor-analytic stage (Ramlo, 2015). Within this analysis stage, there is the potential for divergent Q methodologist practice (behavior) and anecdotal evidence within the Q community indicates that variations of practice and viewpoints exist.

Stephenson (1953) explicitly argued for the centroid extraction and hand rotation within the factor-analytic stage of Q methodology rather than PCA and varimax rotation that have become commonplace within the R methodology community and are no doubt used within the Q community as well (McKeown & Thomas, 2013). The preference for the centroid extraction is based upon the indeterminacy of its solution. Because there is no single best mathematical solution for centroid, unlike PCA and varimax, only this factor extraction allows the Q researcher to hand-rotate factors based on theoretical considerations without violating any statistical assumptions (Brown, 1980, 1986; Ramlo, 2016b; Stephenson, 1953). Brown (1980) explained that reliance on the more statistically precise factor solutions such as PCA with varimax might limit scientific exploration and inquiry, precluding the types of discovery that provide insight simply due to a focus on statistical precision rather than theoretical significance.

Yet, primarily anecdotal evidence indicates that Q methodologists possess divergent views about the factor-analytic stage within Q and that at least some have factor-analytic preferences that do not align with the factor-analytic preferences of Q methodology's creator William Stephenson. An email listserv, Q-METHOD, offers a moderated forum for the exchange of information related to Q Methodology (Ramlo, 2016a). Recent discussions on Q-METHOD (a thread called Technique & Methodology) contained an extensive back and forth discussion among Q methodologists regarding the best choices at the factor-analytic stage that clearly demonstrated divergent views and behaviors about this topic. These discussions included criticisms about using centroid and hand-rotation and statements about alternative choices. Others including Kampen and Tamás (2014), Tamás and Kampen (2014), and Wittenborn (1961) also have criticized the Stephenson choices of centroid with hand rotation. Although Brown et al. (2015)

offered strong arguments for centroid with hand rotation, as have others, the questions about the actual practices of Q methodologists within the factor-analytic stage persist. Thus, this study's survey collected the preferred factor-analytic choices of the Q methodologists who participated as well as responses to open-ended questions to collect additional information, including rationales for these preferences.

### Method

This anonymous survey consisted of multiple-choice and open-response items. Thus, the data collected were both quantitative and qualitative, respectively. The multiple-choice items were based upon known Q methodologist practices (e.g., varimax, centroid, either for those who attempt multiple solutions, and other for those who take a different path such as cluster analysis) or availability (e.g., available texts on Q methodology with other and none as options as well). The use of multiple-choice responses was to encourage completion of the survey in a timely manner (approximately 15-20 minutes).

To elicit a sense of experience and training, additional multiple-choice items included number of completed Q studies, training in Q methodology, International Society for the Scientific Study of Subjectivity (ISSSS) membership, and preferred Q texts. Multiple-choice items related to factor-analytic preferences were based upon the Q literature, the Q-METHOD listserv, and personal conversations. Preferences for factor extraction and rotation were included as well as choices for the goals of the factor-analytic stage within Q (including theoretical significance, statistical significance, maximizing the number of factors, and simple structure). Of primary importance was to examine what combinations of factor extraction and factor rotation Q methodologists use for their research studies. The goal of the multiple-choice (quantitative) items was not to get a sense of practice but rather to determine specific percentages of the Q population with specific preferences. Open-ended questions regarding the factor-analytic choices were used to collect qualitative data regarding rationales for factor-analytic preferences and goals. The qualitative data collection was meant to provide additional insight, beyond the quantitative data. A theme analysis was performed to evaluate the qualitative data.

The survey was created in and distributed via Qualtrics, a web-based survey tool. A link to the survey was distributed to the Q-METHOD listserv to participate in the anonymous survey. At the time of the study, the Q-METHOD listserv consisted of 786 members. In contrast, the international Q society, the International Society for the Scientific Study of Subjectivity (ISSSS), contained approximately 200 members. Thus, the researcher decided that the Q-METHOD listserv provided the

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best access to a potentially large but diverse set of practicing Q methodologists, even though many of the members were emerging researchers and Q novices (Ramlo, 2016a). No identifying characteristics were requested within the survey, which was anonymous.

### Results and Discussion

Sixty-eight Q-METHOD list members responded to the survey, with 63 completing all aspects of the survey. Tables of the distribution of responses to each multiple-choice item were created by Qualtrics. In addition, Qualtrics provided a table of individual responses to the survey items. The researcher used this table of individual responses to examine rationales and trends in the data. The multiple-choice item summaries are addressed first to provide a sense of preferred practices and Q methodology experiences.

### Quantitative Results

The multiple-choice responses helped to provide a picture of the respondents, including their Q experiences and preferred Q texts. These Q-demographics are discussed before discussing the participants' responses to the factor-analytic,

multiple-choice items. Patterns of responses across multiple-choice items also are discussed within this section.

**Q experience.** Table 1 contains the summary from the 68 participants regarding the number of Q methodology studies that they had conducted. Participants selected from four choices with increasing ranges of Q studies. Five participants (7%) had not completed a Q study. Most participants (49%,  $n = 33$ ) had conducted one to four studies. Fifteen (22%) conducted five to nine Q studies, with the remaining 15 (22%) having conducted 10 or more studies. Additionally, participants used a sliding scale from 0 to 100 to indicate how they viewed their own expertise. The average selection from the 68 participants was 58 (out of 100) with a standard deviation of 24. The correlation between their levels of experience variable and their expertise was 0.77. For instance, those with the most Q study experience (10 or more Q studies) rated their expertise from 75 to 100. Similarly, for the next level down (5 to 9 Q studies), the expertise level ranged from 39 to 91.

Table 1

*Number of Q Methodology Studies Conducted by Participants*

Answer	Response	%
Zero - I have not completed a study	5	7%
1 to 4 studies	33	49%
5 to 9 studies	15	22%
10 or more studies	15	22%
Total	68	100%

Regarding formal training in Q methodology, 35% of the 68 participants had completed a course on Q methodology. Sixty-one percent were members of the Q international society, ISSSS, and 57% had attended at least one ISSSS conference. At the annual conference, Q workshops are offered, including an introduction to Q methodology workshop. The cost for these ISSSS conference workshops typically are included in the conference registration fee and begin the day before the conference paper presentations commence. With 57% attending the conference, it is surprising that only 37% of the participants had ever attended a workshop at the annual ISSSS conference.

**Q textbooks.** Participants could select multiple responses for their preferred Q methodology texts. Currently, four Q methodology texts exist. All these texts are designed to be instructional in nature although their foci are not identical. Because readers might not be familiar with these texts, summaries about each are offered here including preferences at the factor-analytic

stage of Q to inform the findings of this survey question.

*A Study of Behaviour: Q-Technique and Its Methodology* is William Stephenson's (1953) premier textbook on Q methodology. This text enunciates the statistical, philosophy-of-science, and psychological principles that make up the complete methodology that is Q. Specifically, Stephenson's textbook supports the use of centroid factor extraction with hand-rotation. Although this text is out of print, many current Q methodologists have purchased it through resale booksellers on places like the Amazon website and information about such availability sometimes appears on the Q-METHOD listserv.

In 1980, Steven Brown published a textbook meant to detail the various attributes of Q methodology. This text, *Political Subjectivity: Applications of Q Methodology in Political Science*, seeks to illustrate Q methodology's principles within applications of concern to political and social scientists. Like Stephenson's (1953) textbook, this

textbook supports the use of centroid and hand-rotation at the factor-analytic stage of Q methodology. Although this textbook is also out of print, it is freely available as a PDF on the ISSSS website (www.qmethod.org).

Bruce McKeown and Dan Thomas's (1988, 2013) textbook, *Q Methodology*, also is known as "The little green book on Q." This textbook is one in a series from the Sage Series on Quantitative Applications in the Social Sciences. This textbook is a *primer* that addresses the methodological aspects of Q in addition to procedural, technical, and statistical considerations in a way that makes it user friendly especially for those new to Q methodology. In their second edition, McKeown and Thomas (2013) dedicate one of their four chapters to explaining the factor-analytic stage of Q methodology and, like Brown (1980) and Stephenson (1953), provide evidence concerning the preferences of centroid extraction and hand rotation. McKeown and Thomas (2013) add that quibbles about statistical decisions related to factor analysis tend to be methodological, rather than technical. They posit that the errant consideration of Q methodology as simply inverted R factor analysis (such that Q is the application of R method factoring technique to a transposed data matrix) has led to R factor analysis options within Q software and studies, primarily PCA and varimax.

The fourth Q textbook is *Doing Q Methodological Research: Theory, Method &*

*Interpretation*, authored by Simon Watts and Paul Stenner (2012). This textbook is meant as a "simple yet thorough introduction to Q methodology..." (p. 4) especially designed for those who want to perform their first Q study. Although this textbook is written as a narrative, some might find it akin to a Q study cookbook rather than a methodological approach. Certainly, the textbook does not include the philosophical aspects of the larger methodology. Regarding the factor-analytic stage of Q, the textbook's authors primarily suggest the use of centroid extraction followed by varimax rotation, although they do offer an example of hand rotation.

Table 2 contains the preferences of those surveyed regarding Q textbooks. Participants could select more than one response, and those responses included options of None and Other. The McKeown and Thomas (2008, 2013) textbook garnered the highest percentage (74%), with Watts and Stenner (2012) in a close second place with 71%. In third place was Brown's textbook, with 68%. Only 31% of the participants listed Stephenson's textbook as preferred. The out of print status of the Stephenson (1953) textbook with no online access most probably limits access to many Q researchers. Seven of the nine who responded "other" included at least one of the other textbooks. The participant who selected none of these did not offer an alternative.

Table 2

*Preferred Textbooks on Q Methodology*

#	Answer	Response	%
1	Brown's Political Subjectivity	46	68%
2	Stephenson's The Study of Behaviour	21	31%
3	Watt's & Stenner's Doing Q Methodology	48	71%
4	Thomas' & McKeown's Q Methodology	50	74%
5	Other	9	13%
6	None of these	1	1%

*Note: Participants could select all that apply as preferred texts.*

**Factor extraction.** Q methodologists have a somewhat limited number of options to perform the factor analysis in Q methodology because specialized software is necessary to provide the detailed types of tables used to interpret the factors (Newman & Ramlo, 2010). Table 3 contains the five Q analysis software packages currently available. As this table indicates, these Q software packages typically offer factor extraction choices of PCA and centroid. Although Stephenson (1953) exclusively supported the use of centroid extraction, social-science researchers familiar with R factor

analysis are very familiar with the popular PCA extraction (McKeown & Thomas, 2013; Ramlo, 2016b). Survey participants selected their preferred factor extraction via a multiple-choice item with a list that included PCA, centroid, and other as responses. A multiple-choice item presented PCA and centroid as options as well as either and other. Survey participants were asked to support their preference(s) with an open-ended response.



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Table 3

*Specialized Q Analysis Software Currently Available and their Factor Analysis Options*

Software	Freeware or Proprietary?	Extraction Options	Rotation Options
PQMethod	Freeware	PCA & Centroid	Varimax & Hand
PCQ	Proprietary	Centroid	Varimax & Hand
qmethod Package for R Software Environment	Freeware	PCA	Varimax & other mathematical rotations (as add-ons)
Q-Assessor	Proprietary	PCA & Centroid	Varimax & Hand
Ken-Q Analysis	Freeware	PCA & Centroid	Varimax & Hand

Table 4 contains the preferences indicated by survey participants. PCA was the favored factor extraction choice at 45% (29 participants out of 65 who responded to this item). Twenty-eight percent indicated centroid as their preferred choice and 26% indicated either (PCA and centroid extraction can be preferred), with explanations offered that will be discussed in the next section. One participant selected “Other preference” and explained that they had not reached this stage in a Q

study and would probably use PCA extraction because they are new to Q. Although the current Q software packages only allow for PCA and Centroid, some researchers use SPSS to conduct their Q analyses despite the shortcomings of following that pathway from a methodological standpoint (Newman & Ramlo, 2010).

Table 4

*Participants’ Preferences for Factor Extraction*

#	Answer	Response	%
1	PCA - Principal Components Analysis	29	45%
2	Centroid	18	28%
3	Either	17	26%
4	Other preference	1	2%
	Total	65	100%

**Factor rotation.** Like factor extraction, Q methodologists have a somewhat limited number of options to perform the factor rotation in a Q study. As shown in Table 3, the currently available Q software packages provide both varimax and hand rotation options. Only one package (qmethod Package for R) offers the possibility of other statistical options for factor rotation. Hand rotation, also known as judgmental or theoretical rotation, was preferred by Stephenson (Brown, 1980; Ramlo, 2015, 2016a; Stephenson, 1953). Alternatively, varimax is a common orthogonal factor rotation option in R factor analysis and, therefore, is often

offered as an alternative factor rotation option in Q software (Newman & Ramlo, 2010; Ramlo, 2015). In some cases, those practicing Q state that they would prefer other options (Brown et al., 2015; Tamás & Kampen, 2014) and so the additional alternative of “other” was offered as an option for preferred factor rotation. Because some Q methodologists alternate between varimax and hand-rotation or use them sequentially, the option of “either” also was included as a possible choice.

Table 5 lists the responses and percentages for preferred choice at the factor rotation stage of a Q study. Eight (13%) participants selected hand

rotation as their preferred factor rotation method. The most preferred factor rotation in a Q study was varimax, with 54% (34 out of 63 responders). This is a larger percentage than those selecting PCA as the preferred factor extraction method (45%). Seventeen participants (27%) selected either (varimax or hand rotation with some qualification in

the follow-up response). Of the four who selected other for factor rotation, three explained that they combine use of varimax and hand rotation in sequence. The fourth explained that “I use custom-build, but automatic rotation procedures. / NOT varimax, not by-hand.”

Table 5

*Factor Rotation Preference*

#	Answer	Response	%
1	Varimax	34	54%
2	Hand-rotation	8	13%
3	Either	17	27%
4	Other preference	4	6%
	Total	63	100%

**Combinations of factor extraction and rotation.** The combinations of factor extraction and rotation preferred by the Q methodologist survey respondents are of great interest. A summary of these factor-analytic combinations is displayed in Table 6. Combinations of factor extraction with rotation included PCA with varimax ( $n = 20$ , 32%), which would fit the McKeown and Thomas (2013) suggestion that the factor-analytic stage of Q is simply applying R methodological principals to an inverted data matrix to group people, rather than items.

Alternatively, the preferred combination of centroid with hand rotation in Q, as supported by Stephenson (1953), Brown (1980), and McKeown and Thomas (2013), was selected by four participants (6%). These four participants also included those three textbooks as their preferred Q textbooks. However, others who selected these textbooks provided different preferences for factor extraction and rotation that were primarily in line with preferred practices in R factor analysis (e.g., PCA with varimax, which was the most popular combination of factor extraction and rotation in this survey).

Ten other combinations of extraction and rotation were selected by participants. Nine participants selected the combination of centroid with varimax ( $n = 9$ , 14%). One of these nine specifically cited Watts and Stenner (2012) as the reason for using centroid with varimax. Two participants selected PCA with hand rotation (3%). Three participants selected PCA followed by “Other” for rotation that was described as the sequential use of varimax and hand rotation.

The remaining eight combinations involved “Either” for extraction and rotation. However, the selection of “Either” (PCA or centroid) extraction did not necessarily imply “Either” (varimax or hand

rotation) rotation. For instance, although there were 17 who selected “Either” for factor extraction, only nine of those 17 selected “Either” for factor rotation. Other extraction and rotation combinations included PCA and Either ( $n = 3$ , 5%), centroid and either ( $n = 4$ , 6%), Other and Either ( $n = 1$ , 1%), Either and Varimax ( $n = 4$ , 6%), and Either and Hand-rotation ( $n = 2$ , 3%). Certainly, this variety of combinations implies inconsistencies of Q methodologists at the factor-analytic stage of Q studies. Participants offered rationales for their factor extraction and rotation preferences, including responses to multiple-choice items related to the goals of the factor-analytic stage.

Specifically, a multiple-choice item offered a list of five different foci for the factor-analytic stage within Q. Participants could select multiple responses based on their focus at that stage. The five choices were taken from the Q-METHOD list and the four Q textbooks described earlier. Table 7 contains the results from the survey item regarding the focus of the factor-analytic stage. The choices of focusing on arriving at the best statistical solution (#1), obtaining as many pure factors as possible (#4), and obtaining simple structure (#5) are all synonyms within factor-analysis. Yet, few respondents selected all three. These responses (#1, #4, and #5) focused on more R methodological/statistical goals with response frequencies of 19 (32%), 27 (45%), and 21 (35%), respectively. Typically, within an R factor-analytic context, the best statistical solution is simple structure and they are often treated as synonyms, with both representing a factor matrix wherein each item is highly correlated with one factor but minimally correlated (low loading) on the other factors (Ramlo, 2015).

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Table 6

*Combinations of Factor Extraction and Factor Rotation*

Extraction	Rotation	Number	%
PCA	Varimax	20	32
PCA	Hand rotation	2	3
PCA	Either	3	5
PCA	Other	3	5
Centroid	Varimax	9	14
Centroid	Hand rotation	4	6
Centroid	Either	4	6
Centroid	Other	1	1
Other	Either	1	1
Either	Varimax	4	6
Either	Hand rotation	2	3
Either	Either	10	22

Table 7

*Participants' Focus at the Factor-Analytic Stage in Q*

#	Answer	Response	%
1	Best statistical solution	19	32%
2	Best theoretical solution	36	60%
3	Getting as many factors populated as possible	8	13%
4	Getting as many pure factors as possible	27	45%
5	Simple structure	21	35%

*Note: Participants could select all that apply as preferred focus.*

The best theoretical solution received the largest number of responses ( $n = 36$ , 60%). Theoretical significance is preferred over statistical significance in Q methodology (Brown, 1980; Brown & Robyn, 2004; Ramlo, 2015; Thomas & Baas, 1992). The literature has described theoretical significance as being both pragmatic and qualitative in nature (Ramlo, 2015), where factors yield generalizations of perspective that are substantive rather than statistical (Thomas & Baas, 1992). The literature about theoretical significance in Q has supported the factor-analytic choices of centroid with hand-rotation such that researchers can scientifically explore factor-analytic solutions (Ramlo, 2015). Yet, the survey participants' factor-analytic preferences and written comments indicate that they might have views that diverge from the literature on theoretical significance in Q research.

**Qualitative Results**

Survey participants were asked to provide written comments regarding their factor-analytic preferences in Q. Specific prompts requested participants to explain their factor extraction and rotation preferences as well as comment on the factor-analytic stage within Q. Sometimes participants' responses were at odds with the Q texts of Brown (1980), McKeown and Thomas (2013), and Stephenson (1953). Oftentimes, survey participants offered views that were much more focused on R methodological theory than those of Q. Rarely, participants offered commentary that embraced the type of abduction and inquiry associated with Q textbooks (Brown, 1980; McKeown & Thomas, 2013; Stephenson, 1953).

**Connecting quantitative and qualitative responses.** Table 8 offers a small sample of the completed 63 responses to the survey's open-ended responses for their rationales related to factor-

analytic choices. Examples include a focus on increasing orthogonality and simple structure. Undoubtedly, the response from #4 in Table 8 is the most in alignment with Q's methodology as presented by its creator. Overall, 108 written

responses were provided to the open-ended, text response requests in the survey.

Table 8

*Select Responses Regarding Factor-Analytic Preferences*

#	Factor Extraction Preference	Rationale for factor extraction choice	Factor Rotation Preference	Rationale for factor rotation choice	Additional comments
1	Either	I try several approaches until I see a solution that maximizes orthogonality among factors. Sometimes I use Varimax followed by theoretical rotation.	Either	See previous note.	It's best to try several approaches to decide which solution provides the most distinctiveness among factors.
2	PCA	My advisor told me to do so. She said it was easier.	Varimax	Comparing the results obtained by Varimax with those obtained by hand-rotation, the former seemed better.	
3	Centroid	just because I think/thought that it was common for Q methodology to use Centroid	Varimax	Ibid	
4	Centroid	Centroid is the only method that is compatible with the principles of Q methodology. Stephenson explicitly recommended against principal components.	Hand-rotation	The search is for an operant solution, which is best found using theory and judgment. Simple structure is sometimes acceptable.	The embrace of automatic solutions-- PCA, scree test, varimax, etc.--is too often the default position that is taken as a way to avoid taking responsibility.
5	PCA	Available in standard software packages	Varimax	simple structure provides easiest interpretation	The difference between PCA and centroid is not well-understood. This applies to me but I believe it also applies to many other Q-researchers.
6	Centroid	It is my understanding that centroid extraction is the preferred extraction method of Q methodologists	Either	My training and ontology prefers the most theoretical and qualitative analyses to best represent "reality" so either is acceptable	I prioritize theoretical over statistical significance, however the stats are also important to the analyses and interpretation

**Themes and concourse development.** Many of the 108 written responses to the open-ended questions contained multiple ideas, provided anecdotes from personal experiences, and offered struggles within the factor-analytic stage of Q methodology. These responses were used for the

development of a concourse of statements. In Q, the concourse is a compilation of the communications on the topic (Brown, 1980). Some participant responses were broken up into two or more concourse items because they contained multiple ideas within the written comment. Some

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statements were about the actions taken by Q researchers (objective) and were changed to focus on opinion (subjective) to be appropriate for the concourse and subsequently a Q-sample to be used for further investigation of the viewpoints of Q methodologists about the factor-analytic stage in Q.

In total, 123 concourse items were provided by the open-ended responses of the survey participants. These items were printed and sorted into themes by the researcher. Eight themes

emerged: Comparisons; Dependent on specifics; Easy/Difficult; External authority; Not understood; Objectivity/R factor analysis; Other options (at the factor-analytic stage); and Personal conviction. Table 9 contains the themes, theme description, and the number of concourse statements identified with each theme. Statements then were selected for a Q-sample based on Fisher's Design of Experiments as described by Brown (1980).

Table 9

*Themes of 123 Concourse Statement*

Theme name	Theme description (types of statements)	Number of statements
Comparisons	Comparing solutions to choose best solution (sometimes with R-methodology criteria); Sequentially using one type of factor analysis to inform other.	25
Dependent on specifics	Using specifics of the study such as purpose, P-set, hypothesis testing, singular sorter, etc. to determine what type of factor analysis to use.	15
Easy / Difficult	Choosing factor analysis that is easiest or new Q user friendly and/or avoiding other choices because of perceived difficulty.	16
External authority	Deciding on factor analysis choices based upon external authorities such as instructors, dissertation advisors, texts on Q, Q experts, or journal editors.	22
Not understood	Mentioning that certain aspects of Q are not understood either by individual or Q community.	12
Objectivity / R factor analysis	Seeking objectivity &/or simple structure; making decisions based upon R factor analysis experience or understandings.	14
Other options	Seeking or desiring alternatives to typical Q FA choices such as cluster analysis or Quartimax.	5
Personal conviction	Using personal conviction based on undefined desires / purpose or personal philosophy.	14

**Q-sample.** The use of Fisher's Design of Experiments led to the selection of 51 statements for the Q-sample from the 123-item concourse. The Q-sample comprises the items sorted by participants in a Q study (Brown, 1980; Newman & Ramlo, 2010). The goal of selecting the Q-sample from the concourse is to preserve the broad range of communications on the topic (Brown, 1980; McKeown & Thomas, 2013; Stephenson, 1953). In this way, the Q-sample offers a valuable summary of the survey's qualitative data. The 51 Q-sample items were distributed among the eight themes as shown in Table 9, which contains each Q-sample item and the theme identified for that item. In summary, regarding the Q-sample and the eight themes: Personal Conviction contained eight statements; Other options contained three statements; Objectivity contained five statements; and the remaining five themes contained seven statements each. Table 10 also allows the reader to get a glimpse into the divergent thoughts of Q methodologists regarding the factor-analytic stage in Q methodology.

### Limitation

Utilizing an online survey to collect information had both benefits and limitations. Response rates are a typical limitation of surveys. Here, the response rate out of all those currently enrolled in the Q-METHOD listserv was 68 out of 786 (8.7%). However, it is impossible to determine the activity level of those on the list and some might simply delete emails where others read and even respond to them. There is also the common problem of potential participants assigning a low priority for carrying out the survey because of other competing tasks. Yet, the purpose of the survey was to investigate the types of choices that Q methodologists were making at the factor-analytical stage of their Q studies and that has been accomplished with the survey. However, the percentages in the various combinations might not be stable given the response rate to the survey.

### Conclusions

Stephenson supported the use of centroid with hand rotation as the only factor-analytic choice

within Q methodology based on scientific principles of inquiry and exploration (Brown, 1980; Ramlo, 2015; Stephenson, 1953). Overwhelmingly, Q textbooks support the use of centroid factor extraction followed by hand rotation (Brown, 1980; McKeown & Thomas, 2013; Stephenson, 1953). However, the reality is that multiple preferences exist among Q methodologists regarding their choices for factor extraction and rotation in Q studies. Some of these preferences (e.g., PCA extraction with varimax rotation) with goals such as simple structure offer the kind of R factor-analytic focus described by McKeown and Thomas (2013). The use of centroid extraction followed by varimax rotation appears connected to the Q textbook by Watts and Stenner (2012). Other combinations of factor extraction and rotation are not addressed in Q textbooks and sometimes are not offered within the specialized Q software. Such varied preferences at the factor-analytic stage, many of which are not found in the key Q literature, lead to a question about from where these preferences come. Some combinations (alternating preferences for centroid and PCA as well as hand rotation and varimax) might be based upon misinterpretations of Stephenson's (1953) stress on exploration during the factor-analytic stage in Q.

The basis for such misinterpretations could be a statement made by a Barbara McClintock colleague, Marcus Rhoades, in Evelyn Fox Keller's (1983) book, *A Feeling for the Organism: The Life and Work of Barbara McClintock*. Rhoades stated that

Every scientist comes to his subject with a world view that is uniquely his own—a world view reflected in his relations to people as well as to his subject. Each brings a distinct set of interests—interests stamped by his or her own personality. (pp. 49-50)

These varied practices within Q at the factor-analytic stage are no doubt based upon divergent, subjective views about the best choices. With the Q-sample now created, future research will focus on the divergent viewpoints among Q methodologists regarding the factor-analytic stage within Q.

In the meantime, however, it is important to be aware that inconsistencies in factor-analytic practice exist among Q methodologists. Although some Q methodologists practice centroid with hand rotation (in alignment with Stephenson's theoretical framework), others offer a more R-methodological approach to factor analysis in Q. Yet others practicing Q offer preferences outside of either the Q or R theoretical framework but which might be influenced by misguided approaches to the exploration of factor-analytic solutions or purely statistical intentions.

**Themes and concourse development.** Many of the 108 written responses to the open-ended questions contained multiple ideas, provided

anecdotes from personal experiences, and offered struggles within the factor-analytic stage of Q methodology. These responses were used for the development of a concourse of statements. In Q, the concourse is a compilation of the communications on the topic (Brown, 1980). Some participant responses were broken up into two or more concourse items because they contained multiple ideas within the written comment. Some statements were about the actions taken by Q researchers (objective) and were changed to focus on opinion (subjective) to be appropriate for the concourse and subsequently a Q-sample to be used for further investigation of the viewpoints of Q methodologists about the factor-analytic stage in Q.

In total, 123 concourse items were provided by the open-ended responses of the survey participants. These items were printed and sorted into themes by the researcher. Eight themes emerged: Comparisons; Dependent on specifics; Easy/Difficult; External authority; Not understood; Objectivity/R factor analysis; Other options (at the factor-analytic stage); and Personal conviction. Table 9 contains the themes, theme description, and the number of concourse statements identified with each theme. Statements then were selected for a Q-sample based on Fisher's Design of Experiments as described by Brown (1980).

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Table 10

*The Q-sample Derived from Open-Ended Responses to the Survey*

Item #	Q-sample statement	Theme
1	Hand-rotation doesn't seem to deliver much more than the Varimax solution.	Comparisons
2	PCA is more straightforward and descriptive than centroid extraction.	Comparisons
3	I usually rely on PCA because it typically serves my purposes.	Personal Conviction
4	I have a difficult time explaining to others how Q factor analysis differs from R factor analysis and why it is done the way it is done.	Not Understood
5	I prefer PCA because it offers more factors than Centroid.	Comparisons
6	Centroid is the only method that is compatible with the principles of Q methodology. Stephenson explicitly recommended against principal components.	External Authority
7	Hand-rotation is not so easy to do	Easy / Difficult
8	I use the recommendations and rationale provided by Watts and Stenner.	External Authority
9	I choose to avoid hand-rotation on the grounds that it involves a virtual molding of the data/outcome driven by the researcher, whereas my preference is to have minimal investigator interference, again in the interests of greater objectivity.	Objectivity / R FA
10	I use Centroid just because I think/thought that it was common for Q methodology to use Centroid	External Authority
11	In most cases there is a pragmatic criterion for factor analysis -- the solution should be the most useful one.	Personal Conviction
12	The Q programs could be much more user friendly.	Easy / Difficult
13	Varimax is a good, albeit somewhat less intensive (effort) choice.	Easy / Difficult
14	I love the philosophy that underpins Q methodology but since I'm not a 'natural' statistician I never feel confident about factor analysis	Not Understood

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15	I think it makes more sense to conceptualize the results as components (summarizations of trends in the data) than factors in the strict sense (latent variables).	Personal Conviction
16	PCA provides acceptable factor extraction solutions.	Personal Conviction
17	My factor-analytic choices are easier to defend to non-Q journals.	External Authority
18	I prioritize theoretical over statistical significance, however the stats are also important to the analyses and interpretation.	Personal Conviction
19	My interest is conceptual not statistical. The differences between the two, although statistically important, invalidates neither in my opinion. Sometimes one is better, sometimes the other.	Comparisons
20	I somewhat feel that the factor analysis is just another method or process via software to code for categories and identify themes as in a qualitative study.	Other Options
21	Q methodology's statistical process is just "smoke and mirrors."	Not Understood
22	Simple structure provides easiest interpretation	Objectivity / R FA
23	For me, factor-analytic decisions are determined by the research question, not by personal preference.	Dependent on Specifics
24	There need to be more comparisons between Centroid factor analysis and other person-centered approaches, such as Latent Class Analysis or Cluster Analysis.	Other Options
25	PCA and centroid factor analysis produce very similar data point arrays in factor space. The difference comes from whether you choose to employ Varimax or judgmental rotation. That said, the use of PCA and Varimax does not preclude further investigation through judgmental rotation. The choice is dictated by the design and objectives of the study.	Dependent on Specifics
26	In P-samples, I don't have specific participants whom I consider singular. And I don't know what factors will emerge, or how many, so I don't want to guess which interesting or powerful person I might rotate through. So I prefer PCA and Varimax.	Dependent on Specifics
27	I like to try several approaches until I see a solution that I prefer.	Comparisons
28	Usually I have no grounds for doing hand rotation	Dependent on Specifics



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29	The embrace of automatic solutions--PCA, scree test, varimax, etc.--is too often the default position that is taken as a way to avoid taking responsibility.	Easy / Difficult
30	PCA entails fewer assumptions regarding the data, and involves less intervention by the researcher, such that overall it seems to offer higher objectivity.	Objectivity / R FA
31	Both factor extraction techniques, I believe, can be used. One for more exploratory analyses (PCA), and one that is theory-driven (Centroid).	Dependent on Specifics
32	I think choosing between the best statistical solution and the best theoretical solution depends on where I am intending to publish.	External Authority
33	Hand rotation allows more detailed inspection of data	Comparisons
34	The difference between PCA and centroid is not well-understood by me and many other Q-researchers.	Not Understood
35	I still feel most comfortable when working in tandem with someone to analyze the factors.	External Authority
36	I prefer other options than PCA / Centroid and Varimax / Hand-rotation.	Other Options
37	I think PCA is suitable for someone with limited knowledge with Q methodology	Easy / Difficult
38	I prefer centroid because it is the method used by Stephenson and Brown.	External Authority
39	I am familiar that there is debate as to which method should be used for rotation but I do not understand the differences and how they impact a Q study.	Not Understood
40	I am drawn to Q's unique ability to allow theory to drive all aspects of a study, from concourse development, p-sample selection, analysis, and interpretation.	Personal Conviction
41	Hand-rotation is mind-boggling.	Easy / Difficult
42	The search is for an operant solution, which is best found using theory and judgment. Simple structure is sometimes acceptable.	Personal Conviction

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43	Usually I settle on using PCA because the results are usually more highly expressed.	Comparisons
44	I am interested in all factors, but am most interested in those factors that comprised the greatest amount of variance in the study.	Objectivity / R FA
45	I really don't understand hand rotation and many texts that I read on it, seem quite obscure.	Not Understood
46	In the studies I have done, my goal in rotation is to find "simple structure," rather than to test hypotheses about the relationships between specific study participants. Varimax accomplishes that goal in a quicker and simpler fashion.	Dependent on Specifics
47	I believe I have a very minimal understanding of the theoretical reasons for how the factor analysis accomplishes the goals of a Q study.	Not Understood
48	Factor-analytic choices should depend on the appearance of the initial sorts.	Dependent on Specifics
49	Varimax is a statistically friendly method with acceptable outcomes	Objectivity / R FA
50	There's really no need for much of the complications and arcane methods; judgmental rotation might have its place, maybe even flagging – but these come later. / The "factor analytic" (sic) stage of Q, to me, should really be considered as a data reduction step. Nothing else.	Personal Conviction
51	Besides the early writings of Stephenson and Brown, there seems to be very little writing on the math behind Centroid factor analysis (FA). There is plenty of discussion on why (or why not) Centroid FA is used, but I would like to see a current exposition of the math behind Centroid FA comparing it to PCA, and other FA methods.	Comparisons

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## Examining the Role and Practices of High School Counselors in Helping Students Make Career Transitions

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High school counselors are in a unique position to promote college and career readiness for all students; yet, we know little about the role and practices of school counselors overall; what the goals most emphasized in high school counseling programs are; and how they help students make the transition from middle school to high school, from high school to work, and from high school to college. The researchers investigated these questions using a nationally representative survey. Participants in this study were 852 lead high school counselors from the High School Longitudinal Study of 2009-2013 (U.S. Department of Education, Institute of Education Sciences, and National Center for Education Statistics, 2016). A descriptive analysis was used to examine the transitional counseling activities between public and private high school counselors. This analysis revealed differences in how public and private high school counselors assisted students with transitions. Findings also revealed that self-reported goals of high school counselors were closely associated with several features (e.g., foundation, delivery) outlined in the American School Counselor Association (ASCA) National Model (ASCA, 2003, 2012). Further, our study paved the way for more comprehensive research on the role of high school counselors in the area of career development. Implications for research and practice are discussed.

*Keywords:* high school counselor, college and career readiness, student transition

Helping high school (HS) students make a smooth transition to college or work has been a policy priority for school personnel (Lapan, Poynton, Marcotte, Marland, & Milam, 2017; Obama, 2015). In 2014, in the United States, nearly 2.9 million students aged 16 to 24 graduated from HS (Bureau of Labor Statistics, 2015). Of these students, nearly two million enrolled in 4-year colleges, whereas 31.6% transitioned directly into the labor force (Bureau of Labor Statistics, 2015). Out of all the interested parties (e.g., administrators, teachers, staff, parents), school counselors are uniquely positioned to support students' successful transition from middle school (MS) to HS as well as from HS to college, or the workforce. The role of HS counselors has been redefined by numerous educational reforms (e.g., A Blueprint for Reform [U.S. Department of Education, 2010] or No Child Left Behind of 2001 [2002]) and various new models and standards (e.g., American School Counselor Association [ASCA] National Model [ASCA, 2003, 2012] or ASCA National Standards for Students [ASCA, 2004]).

This redefined role and the current models now require that professional school

counselors play a vital role in helping all students achieve academic, career, and personal/social success. However, there is scant evidence of how HS counselors have implemented the new reforms, models, and standards to help students to achieve their goals during a career transition (McKillip, Rawls, & Barry, 2012). Therefore, our study used a nationally representative sample of lead HS counselors to examine the practices that HS counselors have undertaken to help students make successful transitions.

### **High School Counselor Roles**

As defined by ASCA (2015a), *professional school counselor* refers to educators who are either certified or licensed with a minimum of a master's degree in school counseling. Professional school counselors usually seek employment in elementary, middle/junior high, and high schools and address the needs of all students through a comprehensive school-counseling program (Dahir & Stone, 2012).

School counselors are charged with the management of the student outcome-based comprehensive school counseling program, which is focused on teaching life competencies to students (ASCA, 2012). School counselors using the ASCA (2003, 2012) national model create vision and mission statements that align with the vision and mission of the school. The service delivery that school counselors use should align with the mission and vision and have measurable outcomes (ASCA, 2015a). School counselors may receive guidance in the establishment of an effective school counseling program from the *ASCA Mindsets and Behaviors for Student Success: College-and-Career*

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*Readiness Standards for Every Student* (Mindsets & Behaviors Standards; ASCA, 2014). The Mindsets & Behaviors Standards (ASCA, 2014) describe for the school counselor “knowledge, skills, and attitudes students need to acquire in order to achieve academic success, college and career readiness, and social/emotional development” (p. 1). The Mindsets & Behavior Standards are organized in three broad domains: academic, career, and social/emotional development, and school counselors operationalize the Mindsets & Behavior Standards by selecting specific competencies that reflect the vision, mission, and goals of the comprehensive school counseling program and that align with the school’s academic mission. In addition, when setting goals for the comprehensive school counseling program, school counselors must consider other student standards from their state and district.

The school counselor provides services to the students, the parents, the school staff, and the community (ASCA, 2012). The services provided include direct student service, which includes the school counseling core curriculum, individual student planning, and responsive services, as well as indirect service (ASCA, 2015a). The school counseling core curriculum includes structured lessons that provide students with the knowledge, attitudes, and skills necessary for student development (ASCA, 2012). The school counselor systematically delivers the core curriculum to all students in collaboration with the other professional educators in the building. School counselors also coordinate activities on a systemic basis to assist students with achieving their personal goals and developing college and career plans (ASCA, 2015a). College and career planning and readiness activities comprise a great deal of the activities in individual student planning. These individual planning services may be provided in classrooms, small or large groups, or even in individual settings. The final component of direct student service, responsive services, meets students’ individual and immediate needs and concerns. Responsive services may include individual or small group counseling, or crisis services (ASCA, 2015a). A school counselor’s indirect services are services provided to students that include interactions and collaboration with others. Indirect services may include referrals, consultation, and collaboration with parents, teachers, other educators, and community organizations (ASCA, 2015a).

The HS counselor is a vital resource person for secondary school students during their late adolescent years (Rosenbaum, Miller, & Krei, 1996). For instance, the counselor’s role in high schools includes assisting students with the successful transition to adulthood, providing for the social/emotional needs of students, and offering assistance to school administration (MacAllum,

Glover, Queen, & Riggs, 2007). More specifically, McKillip et al. (2012) summarized the role of HS counselors in three defined contexts: (a) the social context: organize the counseling program for college preparation, collaborate with other staff and teachers, and provide school resources for college readiness; (b) the family context: provide crucial assistance for students who lack information and resources in the college preparatory process; and (c) the student context: meet each student’s needs during the college preparatory process.

The HS counselor’s role often is dictated by expectations from policy makers, administrators, students, and parents. For example, educational policy makers are calling for a decrease in the HS dropout rate, as well as an increase in the HS graduation rate (Obama, 2009, 2015). Secondly, school administrators expect school counselors to perform tasks such as designing a master schedule for all students and managing all the school’s testing programs (e.g., American College Testing [ACT]; Wright, 2012). Likewise, HS students, teachers, parents, and administrators might have wide-ranging expectations of their school counselor. These expectations might include providing information on topics such as mental health counseling services, knowledge of achievement tests, and career advising (ASCA, 2015b; Shi, Liu, & Leuwerke, 2014). Lastly, most parents want HS counselors to help their children gain admission into a good college and to receive a lucrative scholarship or financial aid package (Wright, 2012).

### **Middle School to High School Transition**

Moving from the middle grades to HS is a critical juncture for students. The Southern Regional Education Board (2002) describes the MS to HS transition as challenging and unwieldy. McKee and Caldarella (2016) reported that the student’s successful or unsuccessful navigation of the MS to HS transition is a key predictor of HS success and dropout. Factors making the transition more difficult include higher achievement expectations, decreased supports, and a less personalized environment in HS (Barber & Olsen, 2004; McKee & Caldarella, 2016).

Difficulties in making the transition might result in the student developing a negative perception of the school environment and a decline in the student’s grades (Akos & Galassi, 2004; McKee & Caldarella, 2016; Uvaas & McKeivitt, 2013). Furthermore, a student’s unsuccessful transition to HS can result in a significant decline in school attendance (Benner & Wang, 2014), high dropout rates (Turner, 2007), behavior problems (Jerald, 2006), social issues (Maute & Brough, 2002), and low achievement (Isakson & Jarvis, 1999). Akos and Galassi (2004) noted three important areas of concern that most eighth-grade students express: (a) academic concerns (e.g., increased homework, difficulty of classes); (b)

procedural concerns (e.g., manage the complexities of high school); and (c) social concerns (e.g., relationships with peers and adults). However, researchers found that students who make a smooth transition to high school in each of these areas of concern can make a successful transition into high school (Uvaas & McKeivitt, 2013).

#### **High School to College and Career Transition**

College and career readiness enables students successfully to complete their postsecondary education or to enter the job market (ASCA, 2012). As such, HS counselors play a vital role in preparing students for college and career readiness. HS students might rely heavily on their school counselor's guidance and support for college and career preparation (Farmer-Hinton, 2008; Goyette, 2008).

Researchers have identified key academic factors in the successful transition of HS students to secondary education or the labor force that includes college and career readiness (Venezia & Jaeger, 2013). The 2010 Public Agenda study led to the conclusion that when students believed that the counselor had made an effort to get to know them, the students had better college and career outcomes than did students who believed that they were just another face in the crowd (Public Agenda, 2010). It is worth noting that only 47% of students in the national sample believed that they had received this personalized attention (Public Agenda, 2010). Lapan (2013) concluded that these results might be due to the low implementation rate (i.e., 50%) of comprehensive school counseling programs across the nation. Moreover, Lapan, Gysbers, and Kayson (2006) reported that lower student-to-counselor ratios predict higher student success, especially in high-poverty schools.

Students' assessment results are also a key factor in a successful transition (e.g., grade point average [GPA], ACT scores). Furthermore, researchers have noted that key nonacademic factors (e.g., family support, career planning) also predict student achievement of college and career success (Goyette, 2008). Of all factors, college and career readiness often is considered as the essential component of college success (Conley, 2010). However, Conley (2014) noted a lack of assessments to determine college and career readiness by assessing such skills as setting career goals, supporting career aspirations, and acquiring the determination to succeed.

On the other hand, the ASCA and the National Association for College Admission Counseling (NACAC) set high standards (e.g., ASCA Mindsets & Behaviors for Student Success: K-12 College- and Career-readiness Standards for Every Student; ASCA, 2014) and provide models (e.g., ASCA National Model; ASCA, 2003) that stress the importance of the role of the school counselor in preparing students for college and career readiness.

Specifically, school counselors not only provide information, tools, and perspectives to students, parents, and schools, but also serve as leaders and advocates to guide students' career aspirations and planning (ASCA, 2014). Moreover, school counselors provide comprehensive programs to help students make a successful transition from HS to either a postsecondary education or immediately to enter a career (Conley, 2010, 2014).

The College Board (2010) also identified a comprehensive and systemic approach for school counselors to inspire students and to prepare them for college and career success. This approach consists of eight components (e.g., college aspirations, academic planning for college and career readiness, enrichment, and extracurricular engagement) across Grades K-12 (College Board, 2010). By implementing these eight components, school counselors provide information, tools, and perspective to parents, students, schools, and their communities that build college and career readiness for all students (College Board, 2010).

As stated previously, researchers (MacAllum et al., 2007; McKillip et al., 2012) have examined the role and responsibilities of HS counselors as well as the applicable standards and ethical codes. Accordingly, further exploration of how HS counselors meet these expectations in their career activities is extremely necessary. Moreover, as calls for counselor accountability increase, there is a need for research on the HS counselor's role in different school types and settings (Sink, 2009).

#### **Overview of Present Study**

Guided by the ASCA (2012) national model, this study aimed to examine the role and practices of HS counselors as social agents who can prepare students for educational and vocational transitions. Although there is an increasing amount of research on the function of HS counselors who work to deliver services to support all students in their college and career readiness, the literature remains limited by small sample sizes, or has not been longitudinal in nature. Furthermore, current research lacks an investigation of how public and private high school counselors support students through the transition from HS to college and career and how counselors help them make informed decisions about college and careers. That is, in a general way, the purpose of this research study was to contribute to a growing body of literature concerning the implementation of ASCA (2003, 2012) national model in school counseling programs and the responsibilities of HS counselors across the United States, in a way that is particularly needed (by examining transitional counseling activities and goals by school type and setting). School administrators, teachers, counselors, and researchers should benefit from this study because it delineates goals of HS counseling programs and transitional

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counseling supports of HS counselors on students during this period of schooling.

To answer Mckillip et al.'s (2012) call for more research to understand the effectiveness of school counselors at preparing students for college and career success, we designed the current study to address the following research questions:

1. What goals are most emphasized in HS counseling programs?
  - a. What is the difference in goals emphasized between different school types (i.e., public vs. private)?
  - b. What is the difference in goals emphasized among different school settings (i.e., city, suburb, town, rural)?
2. What do HS counselors do to support students in making the transition from MS to HS?
  - a. What is the difference in transitional counseling activities between different school types (i.e., public vs. private)?
  - b. What is the difference in transitional counseling activities among different school settings (i.e., city, suburb, town, rural)?
3. What do HS counselors do to assist students in making the transition from HS to work?
  - a. What is the difference in transitional counseling activities between different school types (i.e., public vs. private)?
  - b. What is the difference in transitional counseling activities among different school settings (i.e., city, suburb, town, rural)?
4. What do HS counselors do to assist students in making the transition from HS to college?
  - a. What is the difference in transitional counseling activities between different school types (i.e., public vs. private)?
  - b. What is the difference in transitional counseling activities among different school settings (i.e., city, suburb, town, rural)?

We hypothesized that differences in transitional counseling activities would exist between school types (i.e., public vs. private) and among school settings (i.e., city, suburb, town, rural). Specifically, we hypothesized that public high schools would have higher levels of direct student services (i.e., finding financial aid for college, organizing students' campus visits).

### Method

#### Participants

The data utilized in this study were from the High School Longitudinal Study (HSLs:09) of 2009-2013 provided by the U.S. Department of Education, Institute of Education Science (IES), and National Center for Education Statistics (NCES). NCES collected data in the fall of 2009 and in the spring of 2012 (U.S. Department of Education, IES, NCES, 2016). First, a stratified random sampling

and school recruitment resulted in the identification of 1,889 eligible schools. A total of 944 of these schools participated in the study, resulting in a 55.5% (weighted) or 50% (unweighted) response rate. In the second stage of sampling, the lead counselors from the 944 schools were invited to participate by NCES. Overall, 852 lead counselors participated in this survey. The total unweighted response rate for the school counselor survey was 90.3%. One percent, or 10 counselors, refused to complete the survey. The remaining 82 school counselors (8.7%) never responded to the request to complete the survey.

The HSLs is the fifth in a series of NCES longitudinal studies. All of the studies monitor a national sample of young people in transition from their HS experiences throughout their postsecondary years. The transitions of interest in the study included students' pursuit of further education, participation in the work force, and establishing other adult roles.

The counselor questionnaire sought information about school programs and practices, as well as relevant activities that assist with the transition of students from MS to HS, and from HS to college or work. The lead counselor or the counselor who was the most knowledgeable about the transition from MS to HS, HS to college, and high school to career, provided the questionnaire responses about counseling practices at each school sampled.

#### Variables

The dependent variables used by the authors in this study from HSLs survey items were (a) counseling program goals, (b) MS to HS transition, (c) transition to work, and (d) transition to college. The authors discuss each of the dependent variables in the following sections.

**Counseling program goals.** The survey item, "which one of the following goals does your school's counseling program emphasize the most? would you say..." had four response options: (a) helping students plan and prepare for their work roles after HS, (b) helping students with personal growth and development, (c) helping students plan and prepare for postsecondary schooling, and (d) helping students improve their achievement in high school. The percentage of counselors who responded to each option was computed to provide data regarding counseling program goals.

**MS to HS transition.** This variable was measured via a survey item asking respondents to indicate in which ways do counselors assist students in the transition from MS to HS measured the variable. The respondents were asked to check all the response options that represented six different types of transition work (see Table 1). The percentage of counselors who responded to each type of transition task was computed.

**Transition to work.** Transition to work was measured via a question asking the lead counselor to indicate the ways in which the school assists students with the transition from MS to work. The lead counselor could check all of the scenarios that represented 15 different types of transition activities (see Table 1). The percentage of counselors who responded to each type of transition task was computed.

**Transition to college.** Transition to college was measured via a question asking which of the

steps that counselors take to assist students with the transition from HS to college. The lead counselor could check all the scenarios that represented six different types of transition activities (see Table 1). The percentage of counselors who responded to each type of transition tasks was computed.

**Independent variables.** The independent variables selected for this study were (a) the school type (public vs. private) and (b) the school location (city, suburban, town, or rural setting).

Table 1

*Percentages of Participation in Transitional Counseling Activities by School Type and Setting*

Counseling Activities	<i>M</i>	<i>SD</i>	Pub	Private	<i>Eta</i>	City	Sub	Town	Rural	<i>Eta</i>
Helping students transition from MS to HS										
Present HS course and registration info. to MS parents	80	40	84	54	.26*	74	81	77	86	.12
Present HS course and registration info. to MS students	80	40	86	47	.34*	75	81	84	85	.10
Meet with MS counselors to assist with student transition	58	49	66	15	.35*	48	61	63	65	.14*
Meet with 8th graders to select 9th grade courses	54	50	55	46	.07	58	52	54	53	.06
Use placement policy to place students in grade 9 courses	52	50	54	44	.07	55	52	54	53	.06
Do not assist students with transition from MS to HS	2	16	2	6	.10*	1	3	1	2	.06
Helping students transition from HS to work										
Computerized career information resources	77	42	82	52	.27*	71	80	75	79	.09
Tests for career planning purposes	72	45	75	61	.12*	68	72	72	76	.06
Career awareness activities	63	48	66	49	.14*	60	65	62	64	.04
School or classroom presentations by local employers	56	50	60	39	.17*	53	59	63	52	.08
Exploratory work experience programs/ co-op/work study	51	50	61	10	.40*	44	52	56	58	.11
Job shadowing	49	50	54	28	.20*	45	45	64	53	.13*
Internships with local employers	48	50	54	23	.24*	49	49	49	46	.02
Vocational oriented assemblies and speakers in classes	47	50	52	27	.19*	41	50	45	53	.09
Job site visits or field trips	46	50	50	28	.18*	49	44	51	43	.06
Career information units in subject-matter courses	44	50	46	28	.14*	41	47	42	41	.05
Non-computerized career information resources	39	49	42	28	.11*	39	40	36	40	.03



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Counseling Activities	<i>M</i>	<i>SD</i>	Pub	Private	<i>Eta</i>	City	Sub	Town	Rural	<i>Eta</i>
Career guides or skills assessments	35	48	37	25	.10*	32	34	34	40	.06
Job fairs	31	46	36	13	.19*	29	34	37	30	.06
School doesn't assist students with transition to work	3	16	0	11	.29*	4	1	2	2	.09
Helping students transition from HS to college										
Consults with postsecondary reps about requirement	96	19	96	94	.03	97	94	95	97	.07
Holds information session for students/parents	96	21	95	93	.03	96	95	90	95	.08
Assists students with finding financial aid for college	95	22	96	90	.10*	96	91	96	97	.11
Holds or participates in college fairs	93	26	92	91	.02	94	90	94	93	.07
Organizes student visits to colleges	67	47	67	60	.07	70	67	68	64	.05
Takes other steps to assist with HS to college transition	38	49	34	49	.12*	37	42	26	33	.11

Note. \*statistically significant after the family-wise Bonferroni correction

Data Analysis

The mean and standard deviation of the percentage of responses were computed for all response options pertaining to each item on the survey (see Table 1). A series of chi-square analyses was conducted to examine differences in responses by school type and location. Bonferroni corrections were used to set the familywise alpha levels. The analyses were based on weighted samples created to adjust for the over-sampling bias, and the observations were redistributed to represent the distribution in the population. This was undertaken via the following formula: *Normalized weight = [sample weight] \* [sample n / population N (sum of weights)]*.

Results

Research Questions 1: What are the goals most emphasized in HS counseling program?

As illustrated in Table 2, approximately one half of HS counselors (51.3%) reported that helping students prepare for postsecondary schooling is the most important goal of their counseling programs. Their second most reported goal was helping students to improve their achievement levels in HS (31.2%). Helping students with personal growth and development was the third most reported goal (14.6%), with helping students prepare for work roles after HS being the least reported of the four goals (2.9%).

Table 2

Percentages of Responses on Counseling Program Goals by School Type and Setting

Counseling Activities	Public	Private	City	Sub	Town	Rural	Total %
Help students prep for work roles after HS	3.2	1.9	2.1	4.4	2.7	2.0	2.9
Help students with personal development	14.5	15.5	11.9	13.2	21.8	15.9	14.6
Help students prep for postsecondary schooling	46.8	70.9	50.2	52.0	45.5	54.7	51.3
Help students improve achievement in HS	35.5	12.0	35.8	30.4	30.4	27.4	31.2

Note. HS = high school, prep = prepare

Two chi-square tests were conducted to examine the difference in goals emphasized as a function of school type and school setting. Across the four counselor goals, HS counselors reported

that there was a statistically significant difference as a function of school type ( $\chi^2[3] = 38.12, p < .001, \eta^2 = 0.21$ ). A higher percentage of private and catholic schools (70.9%) emphasized postsecondary

schooling than did public schools (46.8%), whereas a greater percentage of public school (35.5%) emphasized improving academic achievement than did private and catholic schools (12.0%). In contrast, a slightly higher percentage of public school counselors (3.2%) than did private school counselors (1.9%) emphasized the goal of helping students prepare for work roles after HS, whereas a slightly smaller percentage of public school counselors (14.5%) than did private school counselors (15.5%) emphasized the goal of helping students with personal development.

Across the four counselor goals, there was no statistically significant difference in counseling goals as a function of school setting ( $X^2[9] = 13.15$ ,  $p = .16$ ,  $\eta^2 = 0.08$ ). Distributions of percentages on goals emphasized by school setting are in Table 2.

### Research Question 2: How do HS counselors help students make the transition from MS to HS?

The results are depicted in Table 1. Presenting HS course and registration information to MS students and their parents was the most reported activity (80%) that HS counselors undertook to help students make transitions from MS to HS. Additionally, there were more than one half of HS counselors working with MS counselors to help students transition to HS (58%), meeting with eighth graders to select ninth-grade courses (54%), and using a placement policy to assign students to Grade 9 courses (52%). Only 2% of HS counselors performed no actions to help MS students transition to HS.

Twelve chi-square tests were conducted to examine the difference in what HS counselors did to help students transition from MS to HS as a function of school type and school setting. Of the 12 tests, six tests examined the difference by school type (see Research Question 2a) and six tests examined the difference by school setting (see Research Question 2b) using Bonferroni corrections ( $\alpha = 0.05/6 = .008$ ). Results indicated several statistically significant differences between school types: there were more public HS counselors (84%) than private HS counselors (54%) presenting HS course/registration information to MS student parents ( $X^2[1] = 49.54$ ,  $p < .001$ ,  $\eta^2 = 0.26$ ); more public HS counselors (86%) than private HS counselors (47%) presenting HS course/registration information to MS students ( $X^2[1] = 87.56$ ,  $p < .001$ ,  $\eta^2 = 0.34$ ); more public HS counselors (66%) than private HS counselors (15%) meeting with MS counselors to assist students effectively with the transition to HS ( $X^2[1] = 94.03$ ,  $p < .001$ ,  $\eta^2 = 0.35$ ); and fewer public HS counselors (2%) than private HS counselor (6%) identifying that they did not help students transition to HS ( $X^2[1] = 7.45$ ,  $p < .001$ ,  $\eta^2 = 0.1$ ). HS counselors in suburban (61%), rural (65%), and town (63%) areas spent more time in meeting with MS counselors to assist with student

transition than did HS counselors (48%) in city areas ( $X^2[3] = 14.06$ ,  $p < .001$ ,  $\eta^2 = 0.14$ ). All of these effect sizes were large.

### Research Question 3: How do HS counselors help students make the transition from HS to work?

As illustrated in Table 1, HS counselors offered a variety of activities to help students transition from HS to work, including computerized career information services (77%), tests for career planning purposes (72%), and career awareness activities (63%). In addition, more than one half (56%) of HS counselors facilitated school and classroom presentations from local employers, and exploratory work experience programs. In contrast, less than one half of HS counselors offered programs such as job shadowing (49%), internships with local employers (48%), vocational-oriented assemblies and speakers in classes (47%), job site visits or field trips (46%), career information units in subject-matter courses (44%), non-computerized career information services (39%), career guides or skill assessments (35%), and job fairs (31%). An even smaller percentage (3%) of HS counselors did not help students transition to work.

Fourteen chi-square tests were conducted to examine the difference by school type (see Research Question 3a) and 14 tests were conducted to examine the difference by school setting (see Research Question 3b). Bonferroni corrections were used to set the familywise alpha levels ( $\alpha = .004$ ). There were statistically significant differences in how HS counselors helped students make the transition to work as a function of school type and school setting. In Table 1, there were more public HS counselors than private HS counselors offering computerized career information resources ( $X^2[1] = 67.17$ ,  $p < .001$ ,  $\eta^2 = 0.27$ ), tests for career planning purposes ( $X^2[1] = 11.09$ ,  $p < .01$ ,  $\eta^2 = 0.12$ ), career awareness activities ( $X^2[1] = 15.87$ ,  $p < .001$ ,  $\eta^2 = 0.14$ ), school or classroom presentations by local employers ( $X^2[1] = 23.68$ ,  $p < .001$ ,  $\eta^2 = 0.17$ ), exploratory work experience programs ( $X^2[1] = 132.88$ ,  $p < .001$ ,  $\eta^2 = 0.4$ ), job shadowing ( $X^2[1] = 34.70$ ,  $p < .001$ ,  $\eta^2 = 0.20$ ), internships with local employers ( $X^2[1] = 52.03$ ,  $p < .01$ ,  $\eta^2 = 0.24$ ), vocational oriented assemblies and speakers in classes ( $X^2[1] = 31.19$ ,  $p < .001$ ,  $\eta^2 = 0.19$ ), job site visits or field trip ( $X^2[1] = 25.88$ ,  $p < .001$ ,  $\eta^2 = 0.18$ ), career information units in subject-matter courses ( $X^2[1] = 16.68$ ,  $p < .001$ ,  $\eta^2 = 0.14$ ), non-computerized career information resources ( $X^2[1] = 9.42$ ,  $p < .002$ ,  $\eta^2 = 0.11$ ), career guides or skill assessments ( $X^2[1] = 7.89$ ,  $p < .001$ ,  $\eta^2 = 0.1$ ), job fair ( $X^2[1] = 31.57$ ,  $p < .01$ ,  $\eta^2 = 0.19$ ), and even not assisting students with transition from HS to work ( $X^2[1] = 70.9$ ,  $p < .001$ ,  $\eta^2 = 0.29$ ). Additionally, there were more HS school counselors in town areas (64%), than ones in city (45%) suburban (45%), and rural (53%) areas

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offering job shadowing ( $X^2[3] = 4.44, p < .002, \eta^2 = 0.13$ ). All of these effect sizes were large.

### Research Question 4: How do HS counselors help students make the transition from HS to college?

The majority of HS counselors performed a variety of tasks to help their students transition from HS to college. These activities were consistent with their counseling program's goals and how the counselors allocated their times. The most common activities reported by HS counselors were the following: consulting with postsecondary representatives about requirements/qualifications (96%), holding information sessions on the transition to college for students/parents (96%), assisting students with finding financial aid for college (95%), holding or participating in college fairs (93%), organizing student visits to different colleges (67%), and taking other steps to help with the high school to college transition (38%).

As illustrated by the effect sizes shown in Table 1, there was little or no practical difference in how HS counselors help students make the transition to postsecondary education as a function of school setting or school type. Effect sizes of school type ranged from .02 to .1, whereas effect sizes of school setting ranged from .05 to .11.

Six chi-square tests were conducted to examine the difference in school type (see Research Question 3a) while other six tests were conducted to examine the difference in school setting (see Research Question 3b). Bonferroni corrections were used to set the familywise alpha levels ( $\alpha = .008$ ). Results indicated that there were two statistically significant differences by school type. First, there were more public HS counselors (96%) than private HS counselors (90%) assisting students with finding financial aid ( $X^2[1] = 7.79, p < .005, \eta^2 = 0.10$ ). Second, there were fewer public HS counselors (34%) than private HS counselors (49%) taking other steps to assist with HS to college transition ( $X^2[1] = 12.42, p < .001, \eta^2 = 0.12$ ). In contrast, there were no statistically significant differences by school type in terms of consulting with postsecondary representatives about requirements ( $X^2[1] = .827, p > .008, \eta^2 = 0.03$ ), holding information session on transition to college for students/parents ( $X^2[1] = .89, p > .008, \eta^2 = 0.03$ ), holding or participating in college fairs ( $X^2[1] = 2.46, p > .008, \eta^2 = 0.02$ ), and organizing student visits to colleges ( $X^2[1] = 4.43, p > .008, \eta^2 = 0.07$ ).

Similarly, there were no statistically significant differences by school setting in regard to consulting with postsecondary representatives about requirement ( $X^2[3] = 3.76, p > .008, \eta^2 = 0.07$ ), holding info session on transition to college for students/parents ( $X^2[3] = 5.72, p > .008, \eta^2 = 0.08$ ), assisting students with financial aid ( $X^2[3] = 9.65, p > .008, \eta^2 = 0.11$ ), holding or participating in college fairs ( $X^2[3] = 4.53, p > .008, \eta^2 = 0.07$ ), organizing student visits to colleges ( $X^2[3] = 1.82, p > .008, \eta^2$

$= 0.05$ ), and taking other steps ( $X^2[3] = 10.41, p > .008, \eta^2 = 0.11$ ).

### Discussion

This study sought to advance our understanding of what professional HS counselors have undertaken to help their students make successful transitions at various educational stages considering the applicable educational standards and models (e.g., ASCA National Model; ASCA, 2003) implemented in the last decade. The results indicated that the self-reported goals of lead HS counselors were closely associated with several features (e.g., foundation, delivery) outlined in the ASCA (2012) National Model. Consistent with the previous research on practices of school counselors (Hatch & Chen-Hayes, 2008), this study suggests that transformed school counseling programs are now an integral part of the total educational program of schools. As expected, we found that HS counseling programs were making huge contributions to the learning and development of all students based on the ASCA (2012) National Model. Notably, lead HS counselors in the survey reported beliefs and goals that support student development in the academic, career, and personal or social domain established by ASCA (2004) National Standards for Students. In particular, HS counselors reported spending a significant amount of their time directing services with students such as course registration and selection (80%), collaborating with MS counselors (60%), and assisting in student career planning (72%).

In addition, the unique role of the HS counselor required the counselors to put special emphasis on student transition (school to school, school to work, and school to postsecondary education). Consistent with Wood and Winston's (2007) study on accountability for school counselors, our study indicated that HS counselor's time is allocated to curriculum, action plans, and self-perception. As indicated by the study results, the majority of HS counselors spent their time consulting with families and schools, helping students find financial aid for college, and organizing students' campus visits.

The current study also revealed important information on the current transition practices of HS counselors in both public and private schools. First, the results indicated that the most common HS counselor practice to assist students' transition from MS to HS were collaborative efforts between MS and HS counselors. The second most common practice was acting on this collaboration, by using a personalized placement program tailored to the needs of individual HS students. Notably, the findings of collaboration efforts and the implementation placement program followed Uvaas and McKeivitt's (2013) recommendations for improving student transitions to HS, and met some of the requirements (e.g., program focus, direct

student services) of the ASCA (2003, 2012) National Model. Second, another interesting finding is that there are significantly more public HS counselors (66%) than private HS counselors (16%) collaborating with MS counselors to assist students in the transition to HS. Future researchers thus could examine the reasons for this marked difference between public and private school counselor activities. Third, the findings on the transition practices from HS to work are consistent with Mupinga and O'Connor's (2013) study and the ASCA (2004) National Standards for Students on career development (e.g., career awareness, employment readiness, career information). Obviously, the current practices (e.g., computerized career information services, career awareness activities, field trips, career assessments, job fairs) reported in this study became much more diversified and computer-based than were those used in previous decades. Fourth, a greater percentage of public HS counselors than did private HS counselors reported helping to prepare students for work on all activities surveyed. It is possible that students from private high schools are more likely than are students from public schools to go to college because of their strong college-going cultures (and/or more affordable financially). As indicated by Mau and Bikos's (2000) longitudinal study findings, students from private schools were more likely than were students from public schools to aspire to postsecondary education. Fifth, the current results show only minimal differences in how public and private HS counselors help students make the transition to postsecondary education. Both types of HS counselors reported that they placed their emphasis on the following activities: (a) consulting with postsecondary representatives, (b) holding information sessions on the transition to college for student and parents, (c) assisting students with finding financial aid for college, (d) holding or participating in college fairs, and (e) organizing student visits to colleges. Most of activities met counseling program goals as well as the ASCA (2004) National Standards for Students. It appears that both types of HS counselors implemented a wide variety of approaches in helping students become ready for, and succeed in, some form of postsecondary education. This study highlights major program activities initiated by lead HS counselors to assist in the transition to college, and paints a portrait of current trends in HS counseling program since the implementation of ASCA National Model several years ago.

#### **Limitations of the Research and Recommendations for Future Research**

The current study has several limitations to be addressed in future research. Findings from this study were drawn from self-report measures that might be susceptible to error due to the accurate memory recall of the participants. Furthermore, in

this study, the researchers were unable to examine other relevant variables that could potentially influence the roles and practices of HS counselors, such as perspectives from students, school administrators, and parents, and other educational background and personality characteristics of counselors. Future researchers also may consider surveying students to obtain their perspective of the types of services received and the impact of counseling program activities in helping them make smooth career and postsecondary transitions. In addition, the present data cannot establish the impact that HS counselors also might have had on the low-income, underrepresented students. Researchers should extend the current findings to examine how school counseling programs could provide more support for college planning and transitions among these students. Moreover, this study included data available up to 2013 and, therefore, has limited ability to comment on recent changes in goals of HS counseling programs and transitional counseling activities. Finally, we have limited understanding concerning the reasons for the difference in transitional counseling activities between public and private HS counselors. Thus, further studies are needed to provide a deeper insight to these differences.

#### **Practical Implications**

Findings from the current study, which examined what tasks HS counselors are performing to assist students in making the transition from MS to HS, yield practical implications. The researchers found that, for the most part, HS counselors considered their most important goal to be to assist students with the transition to postsecondary education. The recent emphasis by educational administrators and policy makers on the importance of college and career readiness (Lapan et al., 2017; Obama, 2015) might indicate the reason for the importance of these activities to school counselors. The school counselors in the current study begin the process of assisting students with the transition to post-secondary education during the MS to HS transition and continued emphasis on college and career planning in the counseling program throughout the HS years. The researchers found that HS counselors develop a wide range of programs and activities throughout the students' HS years to assist with students' transition to either post-secondary education or post-HS careers.

#### **Conclusion**

In sum, the results of our study confirmed the central hypothesis that there were numerous significant differences in transitional counseling activities existing between school types (i.e., public, private) and among school settings (i.e., city, suburb, town, rural). Our findings suggest that the self-reported goals of the current HS counselors were closely associated with several features (e.g.,

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delivery) outlined in the ASCA National Model (ASCA, 2012). By continuing to examine how professional school counselors support student development in the academic and career domain, we hope to contribute positively to ongoing school counselor practices as well as to training in counselor education programs.

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