# LEADERSHIP AND RESEARCH IN EDUCATION

THE JOURNAL OF THE OCPEA

Volume 4, Issue 1, 2017

Leadership and Research in Education: The Journal of the Ohio Council of Professors of Educational Administration (OCPEA)



## Volume 4, Issue 1, 2017

## An ICPEL State Affiliate Journal

Editors:

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Leadership and Research in Education: The Journal of the OCPEA has been peer reviewed by professors of Educational Administration, OCPEA, and accepted and endorsed by the International Council of Professors of Educational Leadership as a significant contribution to the preparation and practice of school administration.



of Professors of Educational Leadership

### Leadership and Research in Education: The Journal of the Ohio Council of Professors of Educational Administration

#### Editorial and Review Board, 2016-2017

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## Leadership and Research in Education: The Journal of the Ohio Council of Professors of Educational Administration

## Vision and Mission

#### Vision:

Organic. Creative. Professional. Engaging. Accessible.

#### Mission:

Leadership and Research in Education: The Journal of the OCPEA offers an academic forum for scholarly discussions of education, curriculum and pedagogy, leadership theory, and policy studies in order to elucidate effective practices for classrooms, schools, and communities.

The mission of the OCPEA journal is to not only publish high quality manuscripts on various political, societal, and policy-based issues in the field of education, but also to provide our authors with opportunities for growth through our extensive peer review process. We encourage graduate students, practitioners, and early career scholars to submit manuscripts, as well as senior faculty and administrators. We accept quantitative, qualitative, mixed methods, and action research based approaches as well as non-traditional and creative approaches to educational research and policy analysis, including the application of educational practices.

Leadership and Research in Education: The Journal of the OCPEA is a refereed online journal published twice yearly since the inaugural edition in 2014 for the Ohio Council of Professors of Educational Administration (OCPEA). The journal will be indexed in the Current Index to Journals in Education (CIJE) and will be included in the Education Resources Information Center (ERIC) database.

### Submitting to the OCPEA Journal

OCPEA Call for Papers and Publication Information, 2017

Leadership and Research in Education: The Journal of the OCPEA accepts original manuscripts detailing issues facing teachers, administrators, and schools, including empirically based pieces, policy analysis, and theoretical contributions.

Submissions must include a one-hundred-word abstract and five keywords. Send one electronic copy of the manuscript to the editor using MS Word as well as a signed letter by the author(s) authorizing permission to publish the manuscript. Additionally, a separate cover page must be included containing the article title, author name(s), professional title(s), highest degree(s) obtained, institutional affiliation(s), email address(es), telephone and FAX numbers. Only the article title should appear on the subsequent pages to facilitate a triple-blind reviewing of the manuscript. Submissions should be approximately 15-20 pages including references. Submissions must align to the standards of the APA Manual (6<sup>th</sup> ed.). Submissions must be double-spaced, 12 point Times New Roman font with one inch margins on all sides, each page numbered.

To submit materials for consideration, send one electronic copy of the manuscript and additional requested information to:

OCPEA Journal Editors at ocpeajournal@gmail.com

This Call for Papers for the 2018 Journal is posted on the OCPEA website, <a href="http://www.cehs.wright.edu/ocpea/">http://www.cehs.wright.edu/ocpea/</a>

### **General Submission Guidelines**

Leadership and Research in Education: The Journal of the OCPEA accepts original manuscripts detailing issues facing teachers, administrators, and schools, including empirically based pieces, policy analysis, and theoretical contributions.

#### General Areas of Focus:

#### Advocacy

We seek manuscripts identifying political issues and public policies that impact education, as well as actions that seek to dismantle structures negatively affecting education in general and students specifically.

#### **Policy Analysis**

We seek analysis of policies impacting students, teachers, educational leaders, schools in general, and higher education. How have policy proposals at the state or national level, such as the introduction and adoption of national and state standards, affected curriculum, instruction, or assessment of leadership preparation and administrative credential programs?

#### **Preparing Educational Leaders**

We seek manuscripts that detail effective resources and practices that are useful to faculty members in the preparation of school leaders.

#### Diversity and Social Justice

We seek manuscripts on issues related to diversity that impact schools and school leaders, such as strategies to dismantle hegemonic practices, recruit and retain underrepresented populations in schools and universities, promote democratic schools, and effective practices for closing the achievement gap.

#### Technology

We seek manuscripts that detail how to prepare leaders for an information age in a global society.

#### Research

The members of OCPEA are interested in pursuing various research paradigms and methodologies, ways to integrate scholarly research into classrooms, ways to support student research and participatory action research, and how to use educational research to influence public policy.

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## A Note from the Editors

#### Jennifer L. Martin, Senior Co-editor

The University of Mount Union

## Kathy Crates, Co-editor

The University of Findlay

Welcome to the Volume 4, Issue 1 of Leadership and Research in Education: The Journal of the Ohio Council of Professors of Educational Administration (OCPEA). In the tradition of the International Council of Professors of Educational Leadership (ICPEL, formerly NCPEA), we offer this venue to regional researchers and practitioners to bridge the divide between them, providing research that is relevant, regional, and relatable and from a grassroots perspective. The collegial work and growth that produced this publication foreshadows our continued success both for the journal and OCPEA in general.

Leadership and Research in Education: The Journal of the Ohio Council of Professors of Educational Administration (OCPEA) is peer reviewed by members of the Ohio Council of Professors of Educational Leadership (OCPEA) and their colleagues. OCPEA is honored to bring forth this important and timely publication and hope not only to inform readers with our work, but also to inspire practitioners, graduate students, novice and seasoned faculty members to write for our journal. Part of our mission is to mentor beginning scholars through the writing and publishing process. We would appreciate if our readers would pass on our mission, vision, and call for papers to graduate students and junior faculty, as well as to colleagues who are already experts in their fields.

OCPEA is pleased to present an eclectic mix of research and theoretical articles in this issue that are both timely and thought provoking for scholars and practitioners alike in the fields of education, curriculum and instruction, and educational leadership. The manuscripts in this issue detail many of the current controversies in the field of education as we currently experience them, including legal issues impacting school leaders, issues of funding inequities for public schools, and the intersection of schooling and politics.

We would like to acknowledge the many who have helped to shepherd *Leadership* and Research in Education: The Journal of the Ohio Council of Professors of Educational Administration (OCPEA) into a living entity. First, we thank our authors for submitting their work. Second, we thank our board of editors who worked tirelessly to create the policies and procedures and who took the idea of an ICPEL journal for the state of Ohio to fruition. Third, we wish to express gratitude to our esteemed panel of reviewers. Each manuscript goes through an extensive three-person peer review panel, and we are quite proud of the mentoring that has resulted as a part of this process. Fourth, we give a special thanks to the Board of OCPEA who has supported the vision and mission of *Leadership and Research in Education: The Journal of the Ohio Council of Professors of Educational Administration* (OCPEA). The support and guidance of the Board throughout the process of publishing this issue has been inestimable. We also wish to thank Tabitha Martin, M.A. at Write Start Business Consulting, for her assistance with editing this manuscript.

Finally, OCPEA is indebted to Jim Berry, Ted Creighton, and Brad Bizzell of ICPEL Publications for their direction and support. On behalf of the Board of *Leadership and Research in Education: The Journal of the Ohio Council of Professors of Educational Administration*, the OCPEA Board, and the general membership of OCPEA, we collectively thank the readers of this publication. We hope the information provided will guide readers toward a deeper understanding of the many facets of the fields of education, curriculum and instruction, and educational leadership. OCPEA hopes to continue to provide readers with insightful and reflective research.

## Shared University Governance: Faculty Perceptions on Involvement and Leadership

Adrianne L. Johnson Roxanne S. DuVivier W. Grant Hambright

Wright State University

#### Abstract

This article examines motivations for faculty involvement in shared governance. Faculty members at a mid-sized, Midwestern university were surveyed to assess reasons for serving and leading in the shared governance process. Five predominant themes were identified as affecting faculty participation in university governance. The five predominant themes were: (a) within group generic tension, (b) committee member role clarification, (c) the significance of leadership, (d) challenges of the independent professional, and (e) meaningful change and organizational success.

*Keywords:* shared university governance, faculty motivation, committee roles, organizational success, higher education leadership, tenured and non-tenured faculty, university service

The term *governance* broadly refers to formal policies and procedures within institutions for making policy decisions. *Faculty governance* includes all the mechanisms delegated to faculty for rendering recommendations and/or providing direct decision-making through university-, college-, and department-level committee structures. Faculty governance bodies, typically referred to as academic or faculty 'senates' or 'councils,' generally function on a model of representative democracy, although their structures and practices vary greatly (Miller, Smith, & Nadler, 2016). Faculty governance also includes other representative bodies overseeing university practice, particularly around curriculum, students, and learning (Kezar & Cecile, 2014).

There are complex systems and processes that fuel the operation of US higher education institutions. Of these, there has been perhaps most focused attention on the contributions that faculty make through involvement in university governance (Miller, Smith, & Nadler, 2016). Research on contemporary issues in faculty governance has been increasingly focused upon determining the impact of shared authority and examining whether such collaboration makes for better decisions or a more effective university campus (Brown, 2001; Waugh, 2003; Cordes, Dunbar, & Gingerich, 2013). Other than the structure of academic shared governance bodies and some illustrations of best practices, there is very little research or information available on faculty engagement in university governance; however, there are components that are consistent across academic governing systems.

As part of university governance, there is a shared goal of ensuring that all parties affected by the decisions, plans, and policies are well represented. Committees and senates are comprised of faculty, staff, and students collectively participating in decision- making, planning, and administration accountability. Faculty members are elected by colleagues in their department, college, or by all members of the university's faculty. University governing boards consist of faculty, staff, and student members in addition to members appointed by the governor of the state (Emerine, 2015).

Shared governance is integral to the academy's culture, as it serves as both a means to an end and an end to be maintained and valued. Shared governance is a collaborative process as well as an outcome of collegiality (Crellin, 2010). Recent research identifies faculty governance as playing an important role in creating changes at the college and university levels. The purpose of this article is to identify the specific motivations for faculty participation in shared governance at a mid-sized university. For the purposes of this article, the terms *tenure track faculty* and *junior faculty* will be used interchangeably.

#### CHALLENGES OF SHARED GOVERNANCE

As a governance model, shared governance has many challenging characteristics. One challenging characteristic involves the governance model's goals, as its goals may be unclear, may compete with other goals, or may appear inconsistent. Faculty from different departments may have dissimilar notions of anticipated outcomes of the process based on goals tied to their unit's priorities. Across the university, it can be challenging to provide consistent expectations of what shared governance can deliver. In practice, participation in the process is fluid: faculty generally flow in and out of decision-making opportunities as their schedules allow, and while balancing various committee-related and departmental responsibilities, they may not attend meetings regularly which inhibits the progress of the committee's work (Kezar & Eckel, 2004).

Attendance at Faculty Senate meetings can be sporadic. Some faculty give detailed reports in departmental meetings while others do not, or there may be a timing issue where voting takes place quickly, not allowing faculty members to solicit input from colleagues. Encouraging faculty members that serve on these committees/subcommittees to share information and providing them the time to do so is essential. For these shared governance structures to work optimally, communication must be open, transparent, and frequent.

In many postsecondary institutions these governance opportunities are limited to faculty seeking tenure (i.e., junior faculty), and exclude faculty not seeking tenure (i.e., tenured faculty and/or non-tenure track faculty). Though non-tenure track faculty have historically been excluded from governance, this situation is changing. Yet these exclusionary practices still prove challenging for many faculty to overcome, particularly for those serving in part-time teaching positions. Baldwin and Chronister (2001) reported that full-time, non-tenure track faculty have become more actively involved in governance. In the institutions they studied approximately 50% allowed non-tenure track faculty members to participate in faculty senate and other forms of formal governance, and 75% were allowed to participate in departmental affairs (Kezar & Sam, 2014).

For tenure and promotion, ratings are often based more heavily on research and teaching effectiveness, and minimally on service. Due to the emphasis placed on teaching and research, many untenured faculty members are encouraged to wait until after earning tenure before getting too involved in governance. This recommendation is offered because of the associated time commitment that could be expended more efficaciously on areas garnering more impact in their promotion and tenure pursuits. In addition, there could be a perceived risk for junior faculty members serving on faculty governance structures, as those with whom they are serving may also be the tenured decision makers who can impact the junior faculty members' reappointment, promotion, and tenure. If junior faculty take an opposite position, vote against, or make statements that are contrary to those tenured decision makers, it may have long-term effects on their career. Junior faculty may also lack the experience (i.e., understanding Robert's Rules of Order) or confidence to speak honestly (Emerine, 2015).

Another challenge of the shared governance model is a belief that serving on various committees is an ineffective use of professional time. Serving on committees, boards, and senates is time consuming, and junior faculty may find it difficult to balance their teaching, scholarship, and active service participation time schedules (Emerine, 2015). The amount of time spent on these internal governance boards in meetings and reviewing documents is in most cases very time intensive. Faculty members spend hours reviewing documents, generating new or modifying policies/procedures/initiatives, and forwarding recommendations to administration. But, depending on budgetary constraints, legal issues, or simply that administration and faculty goals do not coincide, this time allocation may be perceived as wasteful by participating faculty.

As an example, faculty senate may make recommendations to an administration and the administrators receiving the input may delay adoption of the recommendations or they may not implement the recommendations at all. Faculty members spend hours reviewing documents, generating new or modifying policies/procedures/ initiatives and forwarding recommendations to the administration, but there is no assurance that the expended effort will be rewarded in action, recognition or compensation (Emerine, 2015). The administration's inaction may be due, however, to a number of reasons that include budgetary constraints, legal issues, or simply that administration and faculty priorities do not align. This misalignment of understandings or of institutional priorities may result in faculty members feeling that they have a say in decisions made at the departmental level, have some voice at the college level, but that their contributions are not as understood or valued at higher levels of university administration.

### MOTIVATION TOWARD PARTICIPATION IN SHARED GOVERNANCE

Professionalization theory suggests that the work of professionals is unique as compared to other employment fields, thus they operate in accordance with different principles and standards from many other vocations (Sullivan, 2004). Certain elements epitomize or characterize professionals. These conditions are: extensive training conducted by peers in the profession; deep socialization processes to work; specialized knowledge; control, flexibility and autonomy of work; decision-making and involvement in setting work conditions; commitment to retraining and maintaining current field knowledge; personal accountability and responsibility; perception of their work as a vocation and more than a job; an addition of hours and working until the job is done (Friedson, 2001). As applied to academia, decision-making structures in higher education contribute in an important way to the leadership development of faculty members. This leadership development process includes an infrastructure of mentorship; examples and modeling; chair, peer, and mentor encouragement and acknowledgement; and the provision of clear outcome expectations that are measured with regularity and evaluated fairly

#### METHODOLOGY

The goal of the research study was to assess how faculty at a medium-sized, Midwestern university articulate their role in faculty governance. A survey was conducted within a single Education and Human Services College. The purpose of the survey was a) to evaluate the reasons for serving and leading in faculty governance, and b) to identify areas of potential improvement in faculty motivation, role identification, and participation in faculty governance. The following questions were researched: a) why do faculty join college committees; b) why do faculty join university committees; c) when should a faculty member seek a leadership position within the committee structure; and d) how might faculty encourage more active involvement in the governance process?

The researchers chose a mixed methods approach to this investigation. Convenience sampling was used to select participants. A self-report survey was administered via Qualtrics Software and data were securely stored in the Qualtrics database. The survey included quantitative items with space for free-text qualitative responses. Respondents were College of Education and Human Services committee members who served from 2012 to the present. Respondents were first asked demographic information including department and tenure status.

Identified tenure status	n	%	М	sd
Tenured and Tenure Eligible Track (TET)	28	72	1.28	.46
Non-Tenure Eligible (NTE)	11	28		
Total	39	100		

Table 1. Subject Demographics

Data were analyzed in two parts: 1) percentages of responses in each question category collected from the surveys and 2) a compilation and thematic categorization of the qualitative responses. The researchers triangulated qualitative data from multiple sources in order to yield accuracy of thematic development (Yin, 2014).

#### RESULTS

#### General Responses

A total of 39 faculty responded to the governance survey (n=70), a return rate of 56 percent. All respondents did not complete all items. The majority of respondents were tenured or tenure-eligible faculty (72 percent), while the remainder of respondents (28 percent) were non-tenure-eligible faculty. The overwhelming majority (95 percent) currently serve or have served on a *college-level committee*. The majority of respondents (83 percent) did not characterize their service on *college-level committees* as serving their research interests. The majority (69 percent) of respondents did state that service on *college-level committees* highlighted their skill sets. An overwhelming majority (97 percent) of faculty stated that *college committee* service assures a departmental voice in college governance. The majority (78 percent) also reported that such service fulfills a bylaw requirement.

Seventy-four percent of respondents stated that they are or have served on a university-level committee. The majority of respondents (71 percent) reported that university-level committee service does not address their research interests. Sixty-one percent of reporting faculty stated that university-level committee service highlights their skill sets. An overwhelming majority of respondents (93 percent) stated that universitylevel committee service assures college representation in university governance. A majority of respondents (68 percent) reported university-level service as fulfilling a departmental bylaw requirement. Sixty-eight percent of respondents stated that leadership on a university-level committee should be undertaken only after university-level committee service, with 39 percent stating that at least two years or more of such service should be required. Seventy-five percent of faculty surveyed believed that prior college-level committee service should be required for faculty seeking a college-level committee leadership role. Forty-two percent of respondents believe that at least two years of service on a college-level committee should be required before leadership is assessed.

## Table 2. Survey ResultsCOLLEGE-LEVEL COMMITTEE

Respondents currently serving of have served in the past of a conege-level committee.						
	n	%	М	sd		
Yes	37	95	1.05	.22		
No	2	5				
Total	39	100				

Respondents currently serving or have served in the past on a college-level committee.

Respondents' college-level committee service addresses a research interest.						
	n	%	М	sd		
Yes	6	17	1.83	.38		
No	30	83				
Total	36	100				

Respondents' college-level committee service highlights a skill set.

	n	%	М	sd
Yes	25	69	1.31	.47
No	11	31		
Total	36	100		

Respondents' college-level committee service assures departmental representation.

	n	%	М	sd
Yes	35	97	1.03	.17
No	1	3		
Total	36	100		

Respondents' college-level committee service fulfills a departmental bylaw requirement						
	n	%	М	sd		
Yes	28	78	1.22	.42		
No	8	22				
Total	36	100				

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	n	%	М	sd
After serving at least one year on the committee	12	33	1.92	.77
After serving at least 2+ years on the committee	15	42		
Other reasons	9	25		
Total	36	100		

A college college-level committee member should serve in a leadership position.

#### Table 3. *Survey Results* UNIVERSITY-LEVEL COMMITTEE

Respondents currently serving or have served in the past on a university-level committee.

	, 0		,		
	n	%	М	sd	
Yes	28	74	1.26	.45	
No	10	26			
Total	28	100			

Respondents' university-level committee service addresses a research interest

	n	%	М	sd
Yes	8	29	1.71	.46
No	20	71		
Total	28	100		

Respondents' university-level committee service highlights a skill set.

	,	6 6		
	n	%	М	sd
Yes	17	61	1.39	.50
No	11	39		
Total	28	100		

#### Respondents' university-level committee service assures college representation.

	n	%	М	sd
Yes	26	93	1.07	.26
No	2	7		
Total	28	100		

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	n	%	М	sd
Yes	19	68	1.32	.48
No	9	32		
Total	28	100		

Respondents' university-level committee service fulfills a departmental bylaw requirement.

A university-level committee member should serve in a leadership position

	n	%	М	sd
After serving at least one year on the committee	8	29	2.04	.79
After serving at least 2+ years on the committee	11	39		
Other reasons	9	32		
Total	28	100		

#### QUALITATIVE RESPONSES

Five predominant themes emerged from the data. Themes were described as: Within Group Generic Tension, Committee Member Role Clarification, The Significance of Leadership, Challenges of the Independent Professional, and Meaningful Change and Organizational Success.

#### Theme 1: Within Group Generic Tension

Some participants expressed concern over the inequity of contributions of committee members and the lack of acknowledgment and rewards of contributed service. In the words of one participant,

"It [committee service] is not rewarded, nor are faculty held accountable for the service they perform."

Others suggest that the ideals of participating governance do not match reality and that there are no rewards, nor accountability. One participant stated,

"It is relevant to not only work within one's college but contribute at the university level for the greater good of the organization. The voices of all should be equally heard at the table and university level service ensures even representation for all colleges in university planning and decision-making."

#### Theme 2: The Significance of Leadership

A majority of respondents expressed concern over the impact of unskilled leaders. They suggested that leaders should have appropriate experience before assuming positions of responsibility. These sentiments were expressed in the following ways:

"The chair-elect should be very familiar with the work responsibilities/tasks of the committee, as well as the politics/dynamics of the committee. Leadership comes with time and experience. Strong leaders know who they are and how to lead by example. They have knowledge and skills to handle problematic issues that may arise. That usually only comes with time and experience."

"I feel that many times the Chair of committees, particularly at the college and university levels, does most/all of the work. I have been in various circumstances in which other members will not do any work that they stated they would complete. Additionally, many times the same faculty members will not show up to committee meetings, yet they put their participation on their CV's"

"It's important to let individuals know it's their responsibility. If someone doesn't serve or help out, it's more of a burden on their colleagues who may be serving on multiple committees."

"If one is a novice faculty member, I don't think it's right to put them in major leadership positions until they have some experience."

"Someone has to [serve on a college committee]. Connection to research is tangential at best and [there are] limited personal benefits outside of being a good team player."

"I served in the past because no one else wanted to do it."

"Stop putting up barriers to serve (unless there is a university reason to do so such as with P&T committee predetermined criteria). The department should decide who they want to serve for their rep (it is their rep) and the college decides in elected positions." "It is relevant to not only work within one's college but contribute at the university level for the greater good of the organization. The voices of all should be equally heard at the table and university level service ensures even representation for all colleges in university planning and decision-making."

"Truly consider people's ideas. Focus less on compliance and more on people and outcomes for people."

"Discuss the benefits of having your voice heard in decisions. Discuss the benefits of more fully understanding decisions from multiple viewpoints. Discuss the benefits of knowing colleagues from other colleges."

#### Theme 3: Committee Member Role Clarification

Some participants questioned the value of committee service and the meaningfulness of the intense work. As one participant suggested,

"Clarifying the needs of each committee for membership, do a better job matching individuals' interests and skills to what type of members and leaders are needed on committees, and formal mentoring for service."

#### Theme 4: The Challenge of the Independent Professional

A number of participants expressed interest in receiving better explanations of the roles and functions of committees. Some participants felt that matching talent with goals and needs of the committee should be part of the committee service process. One participant stated,

"Committees should serve a purpose and actually produce meaningful work. I'm not sure how to get people to want to serve - that is up to the individual in many ways, but it is necessary if we want to ensure faculty governance."

#### Theme 5: Meaningful Change and Organizational Success

Many participants expressed appreciation for the holistic view they acquire through university service and see these expanded views as strengthening the university operations. Participants responded in the following ways, "University level committee [work] is important for multiple reasons. First of all one gets very involved in processes that go on 'under the radar' so to speak ... and better understands how to contribute to change or improvements in the processes. Second, working across the colleges provides a better perspective of how different the colleges operate thus allowing one to contribute to improvement within one's own college."

"I have an interest in the responsibilities of the committee. I would like to be able to voice my opinion and/or make a positive contribution about policies and procedures generally handled in this committee."

"I wanted to learn more about how the college works. Each committee has helped me develop a broader sense of what it takes to run the college. A side benefit was that I developed better understandings of the committee work and I became more aware of other faculty members' concerns and interests."

"Explain to new faculty and existing faculty, the inner workings of the committees. Help encourage new faculty to get involved; there should be a better process of rotation on and off committees."

#### DISCUSSION

#### Theme 1: Within Group Generic Tension

Researchers have identified a generic tension between groups of internal cohesion how much group members feel bound together—and external pressure (Pittinsky, 2010). Said differently, the stronger that a group feels its own unique collective identity, the more pronounced difference it sees in everyone else, making it easier to wind up in competition or conflict with other groups. This may account for the disparate results in each category.

#### Theme 2: The Significance of Leadership

Randall (2012) suggests that an adaptive leadership model, which focuses on the leadership process rather than on individual leaders, can be implemented over the long run and can create enduring change. The importance of developing consultative processes is also confirmed by studies illustrating that governance processes have been brought to a halt when feedback is not followed or when advisory capacity is unclear (Schuster, Smith, Corak, & Yamada, 1994).

Faculty members want leadership that emerges from their ranks, yet they don't encourage (and often actively discourage) peers and charges to develop the skills, knowledge, and desire to lead. If there are no people at this intersection, institutional boards in particular will seek leadership solutions elsewhere (Barden & Curry, 2013).

Pittinsky (2010) suggests that intergroup leadership requires leaders to mitigate internal tension by simultaneously decreasing the bad feelings between groups while creating positive feelings—two separate tasks. This concept, which he has termed "allophilia," focuses on accentuating the factors that groups have in common with one another. Applying this concept to the tensions found in shared governance, it is not enough to bring everyone together to the same table; rather, leaders should work to honor this difference without trying to eliminate diversity of thought (Crellin, 2010).

#### Theme 3: Committee Member Role Clarification

Several conditions have been identified as critical to effectiveness, including clarification of roles, lateral coordination, redundancy of function, reward structures, consultation and joint formulation, trust and accountability, norms and values, composition of the governance groups, and leadership. In addition, clarifying roles is related to both effectiveness and efficiency (Kezar & Eckel, 2004).

#### Theme 4: The Challenge of the Independent Professional

Professionals organize and, to a large measure, manage themselves. Professional groups seek autonomy to create their working conditions because they believe that they can best establish the working conditions that will further their complex jobs and fulfill their commitment to the public good (Sullivan, 2004). Shared governance (or input into the decisions of the campus) and faculty-created work conditions are a hallmark of professional status in the academy (Gappa, Austin, & Trice, 2007). Our findings serve to underscore the relevance of this phenomena and its impact on full participation in shared governance.

#### Theme 5: Meaningful Change and Organizational Success

All parties at the university are increasingly concerned with impact, feelings, and representation both in a real sense but also on levels of trust, meaningful participation, and respect for their expertise (Crellin, 2010). A central method to improving the model of shared governance may be found in the notion that promoting understanding and change in higher education only takes place if faculty are committed to participating in the change initiative. In higher education, the buy-in process of change is long and arduous, and it takes time for faculty to be persuaded to look at new models. Change requires a reexamination of existing assumptions of how and why members of the faculty participate in leadership and service (Randall, 2012).

Faculty are in the best position to discuss issues surrounding curriculum, program assessment, standards, policies, academic freedom, and the intellectual property as they design. They assess, evaluate, and use these processes and interface with other academic areas daily so are in the best position to make determinations of practice (Emerine, 2015). There is no better way to learn about the positions, interests, history, and written and unwritten norms of an institution than through playing a role in governance. Not only does this type of service provide valuable information to the participating faculty, but it also enables faculty to deepen their investment in the success of the university's mission. While serving on committees, boards, and senates is time consuming; most, if not all faculty would agree that faculty committee service is an important role.

#### Limitations of Research

The participants were selected as a convenience sample of faculty in one college at a mid-sized university in the Midwest. While the mixed-methodology ascertained useful results for a pilot study, the external validity of the results is limited. Additionally, a somewhat modest response rate demonstrates a need for varied sampling measures and broader methodology.

#### RECOMMENDATIONS

The results of this study suggest that faculty value the voice they now have in university governance. They see involvement in the multi-tiered university committee structure as necessary to ensure their full representation in university decision-making. The themes that emerged from qualitative and quantitative data underscore both the need for refinement of standard practice and the complexities of this challenge. Faculty function independently and have compelling loyalties to their students, their research and their career field. Yet they have a considerable, vested interest in contributing to the success of the university that they serve.

Results of this study also suggest that faculty value experience in service and perceive the assumption of leadership to be the purview of those with past committee experience. Results further suggest that it may be advisable to more fully orient new faculty to the process of university governance and their roles within these governance structures. Developing an appreciation for the importance of involvement in university governance and an understanding of the roles faculty play in decision-making will strengthen faculty contributions to the university scholarly community and impact both its operations and its success.

Future recommendations include broader sampling measures, varied populations (i.e., private versus public institutions; small versus large institutions; similar study conducted across colleges in same university; increase national scope of sampling), and the use of advance statistical measures to predict outcomes for use by administrative bodies within academic institutions.

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## Differential Item Functioning on a Measure of Perceptions of Preparation for Teachers, Teacher Candidates, and Program Personnel

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#### Abstract

Core competencies essential for effective teaching were identified via a literature review and a review of standards for teacher education, and vetted by state groups with interests in teacher education. Survey items based on these competencies asked teacher candidates, graduates, and teacher education program faculty how well the program prepared teachers. The 41 items common to surveys of the three groups were submitted to Rasch analysis to determine dimensionality, scale use, targeting, reliability, and, of particular interest, invariance. Results suggested two dimensions were captured by the 41 items, entitled "knowledge, skills and behavior in promoting student achievement," and "resource use, academic language, and numeracy," with reliability of person separation of .94 and .73, respectively. Use of the 0-4 response scale was appropriate for both dimensions. Items were relatively easy to agree with for both scales, with person means of 1.24 and 0.57. Differential item functioning was found for respondent group and also for extent of program involvement but not for sex or for route to certification. The paper provides a discussion of implications of results for program evaluation.

Keywords: teacher effectiveness, Rasch

Teachers are the most important within-school factor in improving student achievement (Ferguson, 1991; Goe, 2007; National Research Council, 2010; Hanushek & Rivkin, 2010; Sanders, Wright, & Horn, 1997; Wenglinsky, 2002). Research supporting this finding has been made possible through improved assessments, P-12 standards, data systems, and statistical analyses such as growth and value-added modeling, as well as legislation requiring attention to formerly neglected subgroups of students. Good teachers improve student achievement, and poor teachers impact students negatively, probably for years (Sanders & Horn, 1998; Sanders & Rivers, 1996). This result propels research and policy to the next step: how do we ensure that all teachers are good teachers, and how do we support all teachers to develop the "sophisticated expertise" (Darling-Hammond & Bransford, 2005, p. 3) that defines excellent teaching?

A grant supported by the Institute for Education Sciences was proposed and received to develop assessments of preparation of teachers with linkages to the effects on K-12 student achievement. As one of the early steps in this study, surveys were created to assess perceptions of preparation from the perspectives of teacher candidates, recent graduates of teacher preparation programs, and faculty members who taught in the teacher preparation programs. The purpose of this paper is to examine whether the items common to surveys of perceptions of preparation of these three groups functioned in an equivalent manner, meaning they were invariant. This allowed us to assess whether the structure of the survey created in this project reflected a consistent variable across these three groups. As a preliminary to an analysis of differential item functioning, items were subjected to a Rasch analysis to examine dimensionality, scale use, item fit, and targeting.

The grant began with the creation of Core Competencies (CCs) or competencies considered essential for effective teaching. The survey examined here is based on the final CCs. To identify Core Competencies (CCs), documents regarding national teacher standards were examined. These included: The Interstate Teacher Assessment and Support Consortium (InTASC: Council of Chief State School Officers, 2011); The National Council for Accreditation of Teacher Education (NCATE), which is now the Council for the Accreditation of Educator Preparation (CAEP, 2016); The National Board for Professional Teaching Standards (NBPTS, 2016); The Teacher Education Accreditation Council (TEAC: 2016); and the exam elements of the Praxis II, which is a national teacher certification test. In all, 16 sources were analyzed and combined into a matrix. The teacher preparation content was selected by two criteria:

- 1. Policy licensure and accreditation restrictions are calling for these CCs in order to teach;
- 2. Programs are required to provide some evidence of how these CCs are incorporated into their program to achieve accreditation / licensure approval.

This initial mapping identified 12 potential CCs, each of which appeared in at least three of the 16 national or state sets of licensure/accreditation standards and policy recommendations. In order to focus the study, the initial 12 CCs were narrowed based on existing research and whether the CC is likely to be taught in the program (rather than being a selection criterion), is variable among programs, is observable, and is regularly employed in schools. The 12 potential CCs were grouped into 8 CCs that were considered to have less overlap, with vignettes written for each with 5-6 descriptors that would form the basis for survey items. These eight areas became: demonstrating mastery of and pedagogical expertise in content taught; managing the classroom environment; developing a safe, inclusive, respectful environment for a diverse population of students; planning and providing instruction; designing and adapting assessments, curriculum and instruction; engaging student in higher order thinking and expectation; supporting academic language development and English language acquisition; and reflection and professional growth. These CCs with their descriptors were vetted throughout the research team and through various state groups with interests in teacher education. As a result of this vetting, a *ninth* CC was added: supporting literacy and numeracy across the curriculum. This is the first time these core competencies have been constructed based on national standards and other important documents considering themes important to training effective teachers. See Hartnett-Edwards et al. (2013) for more detail on CC development. Details of these core competencies with descriptors can be found in Appendix A.

These nine CCs were reflected by 4-5 items each, with a common core of 41 items on surveys of the three groups. Surveys for each group differed slightly in wording, but 41 items were identical, with an identical response scale, across the groups.

The surveys, thus, were based on an extensive review of documents, a statewide community review process, and extended project team discussions. They were, however, surveys fielded for the first time in 2012-2013 and as such, no information was available regarding whether the CCs functioned as unique measures or whether the entire measure could be captured by one underlying dimension. Further, no information was available on whether surveys would measure similar constructs for all groups. Briggs et al. (2013) analyzed data from two of the three surveys and concluded that different approaches to examining dimensionality yielded different conclusions about program effects.

It is vital to understand a teacher's perspective on their teacher preparation program, given the high teacher turnover rates and that one third of U.S. teachers are in their 1<sup>st</sup>-5<sup>th</sup> year of teaching (Haedden, 2014). Darling-Hammond (2006) found a relationship between teachers' perceptions of their teacher preparation program and their effectiveness as teachers. Darling-Hammond (2006) notes that while a teacher's feelings towards their preparation may not mirror their actual classroom practices, their preparation is correlated with the teacher's self-efficacy, which happens to be correlated with student achievement. The definition of outcomes in teacher education programs and the ability to measure this correlation is fundamental to aid with reform and policy in teacher education (Cochran-Smith, 2001). This work is even more vital for current educational administration who seek to support their current teachers, which begins with understanding their preparation.

The present study examined structure of the common set of 41 items for surveys from the three groups of respondents with the purpose of examining whether the items common to surveys of perceptions of preparation of these three groups functioned in an equivalent manner. This analysis provides an exploration of the constructs we created and a way to verify whether these constructs were the same across groups. Questions that directed the study were:

- 1. Is the measure unidimensional or are there multiple dimensions across the CC's? Are the dimensions clearly definable?
- 2. Is the rating scale of 0-4 consistently used?
- 3. What measurement gaps and redundancies exist along the subscale continuum, indicating the need for adding or deleting items?
- 4. Is any potential bias seen for specific items; are respondents answering differently based on groupings? Specifically, is differential item functioning found for sex, certification route, involvement with the program, and respondent group (candidate, graduate, program personnel)?
- 5. Is any potential bias seen for subscale scores; are respondents answering differently based on groupings? Specifically are there differences in subscale scores by sex, certification route, involvement with the program, or respondent group?

#### **METHOD**

#### Participants

Characteristics of three groups of participants are detailed in Table 1. Not all variables were collected for all participants, in part due to confidentiality concerns. Most candidates and graduates responding were young, white females from a traditional teacher education program. Most faculty members responding had full-time involvement with the program. Responses were received from 296 candidates, 648 graduates, and 501 program faculty members.

<b>.</b>		Candidate		Graduate		Personnel	
Variable		n	%	n	%	Ν	%
SEX							
	Male	39	18.4%	82	18.3%		
	Female	173	81.6%	366	81.7%		
AGE							
	Mean (SD)	27.3 (6.95)		31.52 (9.03)			
ETHNICITY							
	White	179	89.9%	383	90.1%		
	Nonwhite	20	10.1%	42	9.9%		
DEGREE/ Program type							
	Bachelor's	112	41.3%	267	44.9%		
	License only	60	22.1%	159	26.7%		
	Master's	60	22.1%	70	11.8%		
	Dual-Degree	39	14.4%	99	16.6%		
CERTIFICATION Route							
	Alternative	80	27%	192	29.6%		
	Traditional	215	73%	446	68.8%		

#### Table 1. Description of the Samples

POSITION IN Program		N	%
Full-time		159	33.4%
Part-time, regular		99	20.8%
Part-time, limited		79	16.6%
Mentor or Lead Teacher		139	29.2%

<sup>a</sup> Age of participants ranged from a low of 20 to a high of 63, M = 30.33, SD = 8.84

#### Instrument

The survey, as described above, was created via literature review and a comprehensive analysis of sources of standards for teacher preparation, to define eight competency areas (Hartnett-Edwards, Seidel, Whitcomb, Spurlin, Anderson, Green, & Briggs, 2013), with one additional area suggested by an advisory panel. Items were written by project personnel and vetted through teacher education program directors and a regional advisory panel. After modifications based on a series of cognitive interviews, the survey was approved by a panel of deans of colleges of education in the state.

The body of the survey for teacher candidates was split into nine sections, with each section eliciting views about an area of teaching competency. In total, the survey of teacher candidates contained 111 attitude items, 41 of which reflected overall satisfaction with the program. The survey sent to graduates was divided into the same nine competency areas. In total, the body of the graduate survey contained 90 items. Both surveys also included demographic items and items regarding teacher education program characteristics. For additional details on these two surveys, see Briggs et al. (2013).

The survey of teacher education program faculty contained 51 items. One item asked about extent of involvement with the program and the remaining items asked "OVERALL, how well does the program prepare candidates to:" where the remainder of the statement was taken from the wording for the candidate and graduate surveys. As the purpose of this study was to compare item response patterns by respondent group, only items present for all three groups were retained. This resulted in 41 items that reflected the nine CCs. Table 2 provides Cronbach's alpha values by CC by respondent group with the final number of items per CC and provides a sample item from each of the nine CCs.

	N	Teacher		Program	
Cognitive Competency	Items	Candidates	Graduates	Faculty	Overall
<i>content mastery:</i> The teacher is able to help students understand the interconnectedness of content areas.	5	.86	.83	.80	.84
<i>classroom management:</i> The teacher regularly gives learners appropriate options in learning tasks.	5	.86	.85	.82	.85
<i>safe environment:</i> The teacher is skilled in organizing and facilitating students' work in groups.	5	.87	.85	.83	.85
<i>planning instruction:</i> The teacher draws from a number of sources of information, including large- scale standardized assessments and formal and informal classroom assessments, to guide decisions about instruction.	4	.85	.82	.83	.83
<i>adapting instruction:</i> The teacher is able to adapt assessments, curriculum, and instruction to best accommodate students with disabilities.	5	.90	.89	.87	.89
<i>higher order thinking:</i> The teacher sets appropriately challenging learning expectations and communicates these effectively to all students.	5	.88	.91	.87	.90

Table 2. Internal consistency reliability estimates, number of items, and sample items by group and overall by CC

	Ν	Teacher		Program	
Cognitive Competency	Items	Candidates	Graduates	Faculty	Overall
academic language:					
The teacher uses students' first language to help clarify key	Λ	97	01	00	20
concepts as needed.	4	.86	.91	.88	.89
<i>professional development:</i> The teacher critically reflects on his/her own identity as a teacher and cultural identity as					
an individual.	4	.90	.89	.84	.88
supporting literacy & numeracy: The teacher understands how to support student literacy developing in reading, writing, speaking and listening, including teaching phonics when appropriate, and teaching spelling and writing					
conventions.	4	.84	.90	.84	.86

#### Procedure

The project staff generated the online surveys, consent forms, and email instructions to access the survey. This information was sent to directors of teacher preparation programs in the state. Directors of the teacher preparation programs sent a link to the survey via email to program teacher candidates with a request to complete the survey. In addition, project staff pulled publicly available district-school emails for 897 graduates which located recent programs' graduate placements in public school posts. Directors of teacher preparation programs were also sent a link to the faculty survey with a request to convey the survey to their faculty and to mentors and lead teachers associated with the program. The surveys were open from May 2012 through November 2012. Potential participants had approximately three months to respond. Qualtrics (Qualtrics.com) was used as the online survey platform; when the survey was closed, data were downloaded as an Excel spreadsheet and transferred into a statistical software package. As the survey invitations were sent by individual program directors and not by the project staff, accurate response rate information is not available. However, response rates of surveys of program faculty ranged from approximately 20% to close to 100% for different programs.

#### Analyses

The Rasch model (Rasch, 1960/1980) mandates a unidimensional construct arranged in a monotonically increasing pattern along an equal interval continuum. When data fit the Rasch model, item and person estimates are created by natural log transformations of raw data odds (Bond & Fox, 2007). Rasch modeling is the subject of an extensive literature in education and the social sciences (e.g., Bond & Fox, 2007; Fischer & Molenaar, 1995; Wright & Stone, 2004). Instruments examined via Rasch analysis enable us to determine the extent to which items serve to consistently measure a single variable from easy to difficult in a monotonically increasing fashion. Rasch models comprise a family of models applicable to dichotomous, polytomous, and continuous data. The Rasch rating scale model (Wright & Masters, 1982) was used in this study as responses were provided on a 0-4 point rating scale, with the same scale steps used for all items.

Rasch analysis allows researchers to evaluate the extent to which a unidimensional scale is created by the items in the measure. Rasch fit indices are used to determine whether each item or person contributes to the measurement of a single construct by assessing the extent to which an item or person performs as expected. That is, with adequate fit difficult items are endorsed by fewer people than are easy items. Likewise, respondents with less of the measured construct (e.g., classroom management competency) endorse fewer of the "difficult" items than respondents with more of the measured construct. Fit mean square is modeled to be 1.0 when data fit the model. Additionally, a principal components analysis of residuals is used to determine whether a second factor seems to be present in the data. Linacre (2010) suggested an instrument is likely to be unidimensional if variance explained by the first dimension is substantial, the eigenvalue for the first contrast (analogous to the eigenvalue for the second factor in an exploratory factor analysis) is less than or equal to 2.0, and the variance explained by the first contrast is less than 5%.

Item and person reliability indices estimate the replicability of item placements and person ordering. Person separation identifies the number of subgroups of persons that the instrument can discriminate. Separation and reliability of separation describe reliability in different ways (Smith, 2001). Rasch reliability indices, along with Rasch estimates of item difficulty and person ability, are based on linear measures rather than raw or ordinal data and so are more suitable for subsequent parametric calculations of means and standard deviations (Merbitz, Morris, & Grip, 1989). Separation should exceed 2.0 for an
instrument to be useful (e.g., Gauggel et al., 2004). Higher values of separation represent greater coverage of the construct along a continuum.

Finally, Rasch analysis can identify gaps in the construct continuum by identifying items and persons that are not well targeted. An item is said to be "targeted" when there is a sufficient number of persons at an ability level comparable to the item's difficulty such that the item's difficulty can be accurately estimated. A person is said to be targeted when there are items with difficulties comparable to the person's ability level. Where items and persons are not well targeted, they have larger error estimates. These gaps provide feedback on how well the instrument is actually measuring what it is supposed to measure within given ranges of the measure and also what might be done to further improve it.

### RESULTS

**Research Question 1:** Is the measure unidimensional or are there multiple dimensions across the nine CC's? Are the dimensions clearly defined?

Dimensionality, Overall Fit, and Separation. Coherent item groupings were identified by using item fit statistics and principal components analysis of residuals. Data from all three respondent groups were combined for all analyses. Initial analysis with all 41 items indicated the measure was potentially multidimensional (1<sup>st</sup> contrast eigenvalue = 2.7, indicating the possibility of more than one dimension in the data). We identified potential subscales by selecting groupings of items that underfit the Rasch model and then refining item sets. Briefly, items that underfit (infit or outfit mean squares >1.30) were deleted individually until no further items evidenced underfit. The remaining items formed the first dimension. All items that underfit were then analyzed separately to see if a coherent second dimension was feasible. In this manner, two dimensions were empirically identified. The first dimension comprised 33 items and the initial 8 underfitting items comprised the second dimension.

Table 3 shows the number of items, overall fit values, dimensionality, separation, reliability of person separation, and person mean for these two subscales. The two subscales were entitled "knowledge, skills and behavior in promoting student achievement (skills)" and "resource use, academic language, and numeracy (resource use)." No third subscale emerged as all items were used in scales 1 or 2. Mean square fit (infit and outfit) have expected values of 1.0 if the data fit the model. Infit is weighted by the distance between item and person location while outfit is an unweighted index. Both are transformations of

chi-square statistics. For both samples and both scales, infit and outfit mean squares were close to 1.0, indicating adequate overall fit of data to the model.

Table 5. Dimensionanty, item Tit, and Separation						
Index	Scale 1	Scale 2				
Number of items	33	8				
Overall Mean MNSQ Infit	1.00	.99				
Variance to Measure	49.1	47.0				
Eigenvalue of the First Contrast	2.6	2.0				
Real Person Separation						
(non-extreme cases)	3.98	1.66				
Real Reliability of Person Separation	.94	.73				
Real Item Separation	7.56	9.35				
Real Reliability of Item Separation	.98	.99				
Cronbach's Alpha	.99	.95				
Person Mean	1.24	.57				

Table 3. Dimensionality, Item Fit, and Separation

Item fit to the scales yielded mean square infit values of less than 1.23 for all items. For scale 1, item mean square infit values ranged from .73 to 1.22; for scale 2 from .86 to 1.22.

**Research Question 2:** Is the rating scale of 0-4 consistently used across the three groups and does it appear to be appropriate?

Scale Use. Figure 1 provides an example of the use of the rating scale for Subscale 1: skills. Table 4 provides category use, observed average, and step structure values by category for both subscales. There were no category inversions. Scale use was as intended and although scale category 1 was consistently the least used, there were sufficient observations to provide reasonable estimates of fit and step structure. Scale use reflected a less-to-more interpretation of the rating scale. The patterns were similar for Subscale 2 which is not displayed.



Figure 1. Rating scale use: The curves show how probable each category is to observe relative to the item measure expressed as the difference between item and person logit position. Probability of Response is the likelihood of endorsing a given rating scale category at that level of difference in person-item well-being. Intersection of adjacent rating scale categories can be seen at estimated threshold value of the higher of the two categories. For example, the threshold for category 2, or the point at which category 2 becomes a more probable response than category 1 is -2.0 logits.

0	Observed	Observed	Infit	Step
Category	Percentage	Average	MNSQ	Structure
Scale 1				
1	5%	-1.45	1.09	(-3.21)
2	19%	0.02	0.97	-1.12
3	42%	1.16	0.95	1.05
4	34%	2.64	1.01	-3.34
Scale 2				
1	10%	1.3	1.02	(-2.79)
2	22%	-0.18	0.97	-0.95
3	39%	0.76	0.98	0.85
4	28%	1.81	1.01	-2.97

Table 4.	Rating	Scale	Use
		a	

# **Research Question 3:** What measurement gaps and redundancies exist along the subscale continuum, indicating the need for adding or deleting items?

Targeting and Construct Coverage. Figures 2 and 3 display the item-person maps for Subscale 1 (skills) and Subscale 2 (resource use). This map provides the side-by-side positioning of persons and items with category responses to items indicated. Figure 1 shows items to be somewhat easy to agree with for this sample, and there were some persons whose position on the trait was not adjacent to any response category to any item at the lower and upper scale extremes. The person mean for Subscale 1 was 1.24. Targeting of items for Subscale 2 (Figure 3) shows good coverage of person positions, with a person mean of .57. For Subscale 1, there were numerous items at one position, indicating items may be redundant. For Subscale 2, items were more dispersed. If these subscales were to be revised, some items at similar positions might be deleted and replaced with either very easy or more difficult items to extend construct coverage.

SASURE	PERSON -+-	I BOTTOM P=504 TTEM -	₅   MEASURE -+- ITEM	TOP P=50% -+- ITEM	MEASURE
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#### MAP OF PERSON AND ITEM

Figure 2. Map of person and items for Scale 1. Each "#" in the person column is 7 persons: Each "." is 1-6 persons; "X" indicates position of an item at the lowest, mean, and highest rating position.

			MAP OF	PERSON AND ITEM	
MEASURE		BOTTOM P=50%	MEASURE	TOP P=50%	MEASURE
<more></more>	PERSON -+-	ITEM	- ITEM	-+- ITEM	<rare></rare>
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EACH "#"	IN THE PERSON	COLUMN IS 8 PH	ERSON: EACH ".	" IS 1 TO 7	

Figure 3. Map of person and items for Scale 2. Each "#" in the person column is 8 persons: Each "." is 176 persons; "X" indicates position of an item at the lowest, mean, and highest rating position.

POSITION IN PROGRAM						
<b>Item</b> 2B: effective time use	Full- time Faculty 59	Part- time, but Regular	Part-time, involved in limited courses .25	Mentor or lead teacher, limited	Difference in Logit Position 85	<b>p</b> .002
3E: collaborates with larger community	1.17			.61	.56	.001
4B: knowledge of development research	.23	41			.63	.001
4C: uses variety of instructional activities	77			06	71	.002
7A: helps develop academic language	.63	16			.79	.001
7A: helps develop academic language	.63			.05	.58	.006
7C: feedback on use of academic language	.75			.12	.63	.003
RESPONDENT GRO	UP					
					Difference	

Table 5.	Differentia	l item	functionin	g by	position	in j	program,	respond	ent grou	ıp,
certificat	ion route, a	nd pro	gram invo	lvem	ent					

Item	Candidates	Graduates	Program Personnel	in Logit Position	р
2C: organizes to work in groups	.12		48	.60	.0001
2C: organizes to work in groups		.20	48	.68	.0001
Item	Candidates	Graduates	Program Personnel	Difference in Logit Position	р
3A: mutually respectful relationships	65		-1.20	.55	.001
3A: mutually respectful relationships		68	-1.20	.51	.0001

7B: practice academic language	.31	20		.51	.001
8B: strengths and weaknesses of assessment tasks	44		.32	76	.0001
8D: reflects on interactions with community	85		33	52	.001
9A: literacy development	.24	45		.70	.001
9A: literacy development	.24		45	.69	.001
CERTIFICATION RC	UTE				
Item	T	raditional	Alternative	Difference in Logit Position	р
2A—routines and		02	40	50	0.01
rules for classroom		92	40	52	.001
INVOLVEMENT WIT	TH THE T	EACHER E	DUCATION PRO	GRAM	
		Part- P	art-time, Mentor		
	Full-	time, in	volved in or lead	Difference	
T.	time	but	limited teacher,	in Logit	
Item	Faculty	Kegular	courses limited	Position	Р
2Aroutines and rules for classroom	-1.24		29	95	.0001
2Aroutines and rules for classroom	-1.24		64	60	.006
RESPONDENT GRO	UP				
			Program	Difference in Logit	
Item	Candida	es Gradua	ites Personnel	Position	р
7D—language in context	.85	09		.94	.0001
7D—language in context	.85		07	.78	.0001
9C—numeracy development	59		05	54	.002

# Research Question 4. Is any potential bias seen for specific items; are respondents answering differently based on groupings? Specifically, is differential item functioning (DIF) found for sex, certification route, involvement with the program, and respondent group (candidate, graduate, program personnel)?

*Invariance*. Invariance of item positions was assessed for four variables: sex, certification route (traditional or alternative), program involvement of faculty (with four categories), and group (candidate, graduates, program personnel). Table 5 provides logit positions for items with differential functioning by group and subscale. DIF was considered substantial if the Welch's t-test for difference in logit positions between groups was statistically significant (p< .01) and if the difference in logit position exceeded .50.

*Scale 1.* No DIF was found for sex. Six items evidenced DIF for the variable of regular involvement with the teacher education program, with seven differences found. Fulltime faculty perceived items concerned with academic language development, knowledge of the research about human development, and community collaboration as more difficult to agree that preparation was good than mentors/lead teachers, and perceived items about effective use of instructional time and the variety of instructional activities easier to agree with than part-time faculty or lead teachers. Five items evidenced DIF by respondent group, with nine differences. Differences were most pronounced in item position between program faculty and teacher candidates, with program faculty overall tending to view items as easier to agree with than other groups.

*Scale 2.* No DIF was found for sex. One item evidenced DIF for certification route, with those from a traditional program responding most positively to the item regarding their preparation to set up routines and rules for the classroom. The same item also evidenced DIF for program involvement, with full-time faculty perceiving preparation to set up routines and rules for the classroom as easier to agree with. Finally, two items evidenced DIF by respondent group, with candidates finding setting language objectives for use of the English language as more difficult to agree the program prepared them for than either graduates of program faculty. Candidates agreed more than program faculty that they were prepared to promote student numeracy development.

**Research Question 5.** Is any potential bias seen for subscale scores; are respondents answering differently based on groupings. Specifically, are there differences in subscale scores by sex, certification route, involvement with the program, or respondent group?

Relationships with Background Variables. Table 6 provides descriptive information about the distribution of logit person scores for Scale 1 and Scale 2; both were relatively normally distributed. One- and two-way analyses of variance were conducted to assess effects of variables on scale 1 and 2 logit person scores. Statistically significant differences were found between respondent groups for scale 1, F(2,1442) = 27.94, p < .001,  $\eta^2 = .04$ . Using the Games-Howell *post hoc* test, differences were found at p < .01 between candidates (mean = 1.53) and graduates (mean = .75) and between graduates and program faculty (mean = 1.41). Statistically significant differences were found for Scale 2 as well, F(2,1442) = 25.82, p < .001,  $\eta^2 = .04$ . Using the Games-Howell *post hoc* test, differences were again found at p < .01 between candidates (mean = .80) and graduates (mean = .06) and between graduates and program personnel (mean = .87).

Index	Scale 1	Scale 2
Mean	1.14	.60
Median	.77	.27
Standard Deviation	1.83	1.49
Skewness	.69	.62
Kurtosis	2.49	2.11

 Table 6. Description of the distribution of Scales 1 and 2

No significant main effect was found for sex or the interaction of sex with certification route in a 2x2 ANOVA for either Scale 1 or Scale 2. However, a significant main effect of certification route was found for Scale 1, F(1, 656) = 6.61,  $\eta 2 = .01$ , with a higher mean logit position for alternative (mean = 1.65, sd = 2.23) than for traditional (mean = 1.16, sd = 1.98).

No statistically significant effect on person logit position mean was found for level of program involvement for scale 1, F(3, 472) = 1.41, p = .24, or for scale 2, F(3, 472) = .92, p = .43.

# DISCUSSION

The survey was created from an extensive literature review and content expert reviews of documents pertaining to teacher standards that guide teacher preparation programs. This yielded eight themes which we named "core competencies" (CC) that are essential for effective teaching; a ninth CC was added regarding numeracy. The survey was created based on these nine CC's with 4-5 questions for each CC. The purpose of this study was to explore the construct of the survey and verify consistency in its use across three groups: teachers, teacher candidates, and university program personnel. The survey demonstrates multidimensionality; two factors were found named Skills and Resource Use. The final survey was fairly consistent across groups, but some important differences and variances were found across the three groups.

This sample found the items on both scales easy to agree with, with most giving a rating of 3 or 4. Both scales had good person coverage, which shows variation in how persons fell along the item scale, meaning these are good scales that cover a large range of person responses. On the other hand, item coverage was not well spread and had several redundancies, especially for the Skills scale. Items falling at the same position could be revised in order to spread the items apart. Items that extend the scale in a positive direction would be very beneficial as the scale is not covering this part of the sample as well as hoped.

Invariance was tested for sex, certification route, and involvement with the program. Both scales showed no differential item functioning (DIF) for sex or certification route; all groups within these variables responded to items in a generally similar manner. This finding was somewhat surprising and adds to the mixed literature around certification routes (Sass, 2011). DIF was found for program involvement of faculty. Full-time faculty members of the program had a harder time agreeing that preparation was good than mentor/lead teachers in the field. This is interesting as both groups are preparing teachers within the program, but with very different roles and insights. Several studies refer to a disconnect between classroom learning and field experiences, which appears to be present here with faculty not just the teacher candidates (Darling-Hammond, 2009; Zeichner, 2013). This could be explored further considering coursework experiences versus student teaching experiences.

There were also differences in item position by respondent group. This analysis was the focal point of this study. Candidates found 'setting language objectives for use of the English language' harder to agree with than graduates or program personnel. Graduates and program faculty have more experiences with setting these objectives than candidates who have not taught their first year yet, so this is potentially an experience issue. Additionally, candidates found 'promote student numeracy development' easier to agree with than program faculty. This may also be an issue of experience level, but it is interesting that candidates across the state agreed more about feeling prepared for math goals than language goals. This is particularly interesting for current educational leadership as it can help them aid their teachers in professional development opportunities. In general, items showed relatively little DIF across respondent groups, with some exceptions as noted.

Differences for demographic variables on subscale scores were found for both scales. Graduates of the program were more negative towards their program preparation on both scales than both the candidates (had not yet graduated) and program faculty. Graduates are teachers who were in their 1<sup>st</sup>-5<sup>th</sup> year of teaching, so this is possibly due to the influences of real-life teaching. Teacher candidates may feel that their program preparation was sufficient, but it is hard to actually know until they are in a full-time teaching setting. No differences were found for sex or for program involvement. There was a statistically significant difference found for certification route (traditional versus alternative), with teachers who went through an alternative program rating their preparation higher on the Skills scale but not the Resource Use scale. This is interesting as teachers in alternative programs are put right into the classroom and learn along the way, while traditional programs focus on learning first and then classroom experiences.

It was not surprising that the final scale was multidimensional, but somewhat interesting in that there were only two factors, not the nine expected CC's. Each of the nine CC's were validated separately through factor analysis (Briggs et.al, 2013) and extensive expert and document reviews in the creation process. These CC's create a useful framework for understanding what teacher candidates should know and be able to do. This study combined all the survey items for all CC's and found two overarching factors. When considering the items that fell into each dimension, the two factors were named Skills and Resource Use. This shows that while there were nine overarching ideas for effective teaching to occur, demonstrated by this sample, it really comes down to whether or not the teacher has the skills needed and can use resources appropriately and creatively.

Based on these analyses, teacher preparation programs and even professional development personnel need to evaluate their current programming to consider what aspects are Skills-related and what are Resource Use-related. This in no way means that we ignore the nine core competencies (Appendix A), but this adds a new way to evaluate teacher development programs. Asking which skills a teacher needs and what aspects of their program teaches students how to use resources creatively and effectively could improve the program and may lead to more effective teachers.

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# APPENDIX A Core Competencies (CC) with Descriptors

# CC 1. Demonstrating mastery of and pedagogical expertise in content taught:

- a) The teacher deeply understands the content that s/he teaches. This include knowledge of central concepts, tools of inquiry, and specialized character of the discipline being taught.
- b) The teacher understands typical ways that students' progress in learning content, as well as common misunderstandings and how to uncover and address these in teaching, and instructional practices important to the discipline being taught.
- c) The teacher's understanding for both content and learners enables him/her to draw on students' real world interests and experiences to makes learning relevant for all students, and to connect students' background and contextual knowledge with new materials being taught.
- d) The teaching is able to help students understand the interconnectedness of content areas.
- e) The teacher works with library, media, and other resource specialists to integrate information/technology literacy skills into curriculum and instruction.

# CC 2: Managing the classroom environment:

- a) The teacher sets up routines and rules for the classroom that helps students work together and focus on learning. S/he is proactive in managing behavior, using appropriate interventions when needed.
- b) The teacher uses time effectively, plans for learning experiences so that time is not lost in transitions and gives targeted support to students who need extra help.
- c) The teacher organizes the classroom learning environment so that students can easily work in groups of varying size, see display boards and other fullgroup materials, and access learning materials when needed.
- d) The teacher regularly gives learners appropriate options in learning tasks.
- e) The teacher integrates and uses technology to maximize student learning, and appropriately supplements textbooks and other standard curriculum materials to add to the classroom learning experience.

# CC 3: Developing a safe, inclusive, respectful environment for a diverse population of students:

- a) The teacher maintains a classroom build on mutually respectful relationships with students and among students. This includes strategies to help students from different cultures interact positively with each other.
- b) The teacher is skilled in organizing and facilitating students' work in groups.
- c) The teacher maintains a classroom environment that promotes social development and group responsibility.
- d) Cultural inclusiveness is supported through structured classroom talk, curricula, and instructional experiences which connect learning to students' lives and interests within and outside of school.
- e) The teacher works collaboratively with families and significant adults in the lives of their students to foster healthy relationships among students, parents, and the larger community.

# CC 4. Planning and providing instruction:

- a) The teacher draws from a number of sources of information, including largescale standardized assessments and formal and informal classroom assessments, to guide decisions about instruction.
- b) The teacher has knowledge of current research about how students' social, emotional, physical, and cognitive developments influence learning, and current research on effective practices.
- c) The teacher uses a variety of instructional activities that guide students to not only summarize or recall information, but to also apply, synthesize, interpret, and/or evaluate materials in order to deepen understanding.
- d) The teacher effectively incorporates homework and projects; their completion, grades and feedback provide students with increased learning time and the teacher with a tool for monitoring students' progress over time.
- CC 5: Designing and adapting assessments, curriculum and instruction:
  - a) The teacher is able to adapt assessments; curriculum and instruction to best accommodate individual differences among students.
  - b) The teacher is able to adapt assessments; curriculum and instruction to best accommodate students with disabilities.
  - c) The teacher provides appropriate social/emotional, academic, and other supports to reach challenging and/or seemingly unmotivated students. S/he

acknowledges and builds on any emotional responses to the content as opportunities to support learning.

- d) The teacher is able to adapt assessments, curriculum, and instruction to best accommodate students with disabilities who are from culturally and/or linguistically diverse backgrounds.
- e) The teacher provides proactive, clear and constructive feedback to families about student progress and work.

### CC 6: Engaging student in higher order thinking and expectation:

- a) The teacher sets appropriately challenging learning expectations and communicates these effectively to all students.
- b) The teacher models and encourages students to reflect on and assess their own learning, asking them to explain, "how they know what they know" or "how they solved a problem of task."
- c) The teacher encourages students to engage with challenging material. The teacher works with students to help them understand the importance of the work and to assess their own ability to be successful.
- d) The teacher pays careful attention to all students' learning so that s/he can give feedback to students to guide their learning. The feedback given has important properties: it is descriptive, specific, relevant, timely, and constructive. It enables students to guide their own work and thereby increase their active involvement.

# CC 7: Supporting academic language development and English language acquisition:

- a) The teacher helps all students develop academic language by appropriately modeling language and conventions typical for the content area/discipline, providing explicit instruction in language and ways of expression that are used in the discipline.
- b) The teacher provides opportunities for students to practice academic language of content areas in listening, speaking, reading, and writing.
- c) The teacher's feedback for students includes a focus on improving their appropriate use of academic and other language in learning tasks and assessments.
- d) The teacher sets specific language objectives for instruction, and provides opportunities for use of English language in the context of learning new content.

e) The teacher uses students' first language to help clarify key concepts as needed.

# CC 8: Reflection and professional growth:

- a) The teacher uses multiple formal and informal sources of evidence about what students know and can do in order to evaluate and critically reflect on the impact of his/her teaching.
- b) The teacher is aware of the strengths and weaknesses of his/her assessment tasks.
- c) The teacher critically reflects on his/her own identity as a teacher and cultural identity as an individual.
- d) The teacher works to reflect on and improve his/her interactions and relationships with students, other educators, and families and community.

# CC9: Supporting literacy and numeracy across the curriculum

- a) Teachers understand how to support student literacy development in reading, writing, speaking and listening, including teaching phonics when appropriate, and teaching spelling and writing conventions.
- b) Teachers use instructional strategies to develop students reading comprehension of different genres and texts, including teaching students to write in a variety of genres, and help foster students oral (speaking and listening) and written responses to literature.
- c) Teachers demonstrate knowledge of mathematics and understand how to promote student development in numbers and operations, algebra, geometry and measurement, and data analysis and probability, including teaching mathematical problem-solving processes.
- d) The teacher helps students make connections among mathematics/numeracy and other subjects, as well as teaching connections among mathematical ideas within math subjects (e.g., connections among geometry, algebra, and trigonometry).

# Advancing Accounting Research of Teaching Efficacy: Developing a Scale to Measure Student Attitudes toward Active Learning Experiences

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#### Abstract

Literature consistently documents a positive, direct effect of students' attitudes on learning (Lizzio, Wilson, & Simons, 2002). Hence, accounting studies describing active learning activities often report student attitudes as evidence of efficacy (e.g., Matherly & Burney, 2013), but rely on single-item instead of multi-item scales. This practice in accounting impedes evaluation of active learning activities or testing of empirical models. Thus, we (1) develop scales capturing students' attitudes, (2) use qualitative inquiry to validate our scales, and (3) empirically test our scales using Biggs' (1989) 3P Model. These scales will enable this stream to mature through more consistent constructs and sophisticated modeling.

*Keywords:* authentic learning, active learning, students' attitudes, scale development, assessment, explanatory mixed methodology

Education literature within an accounting context continues to rely on single item questions in evaluating pedagogical innovations. However, this practice is contrary to good principles of survey methodology. For example, Fuchs and Diamantopoulos (2009) designate criteria for situations where single-item versus scale measures are appropriate. Specifically, they contend that measures intended to capture attitudinal responses mandate the use of multi-item scales. Drawing from their research, we assert that the literature investigating the efficacy of active learning would benefit from the development of scales to capture student perceptions and attitudes.

One area of accounting education research immersed in the reliance on single items is active, authentic learning. Actively engaging students in their learning "is increasingly recognized as a vital ingredient in the university context" (Hawtrey, 2007, p. 143). Prince (2004) identifies three broad categories of benefits related to active learning: increased content knowledge (i.e., cognitive domain), enhanced students' attitudes (i.e., affective domain), and improved results regarding "pragmatic items [such] as student retention in academic programs" (p. 224). This trend toward more active learning has impacted accounting academics at the university level through various calls to shift from a passive teaching approach to one that encourages students' active participation in the learning process (Fowler, 2006).

Prior education research demonstrates that learning environments have direct effects on students' content mastery (Lizzio, Wilson, & Simons, 2002). Thus, the accounting education literature frequently relies on positive student attitudes as a desirable outcome associated with active learning activities (Apostolou et al., 2013). For example, in 2011, our review showed that 63% of the 41 active learning articles published in the four leading accounting education journals reported students' attitude toward (perception of) an activity as evidence of the activity's efficacy. The questions asked on the evaluations generally fell into two categories: general questions about the active learning experience and specific questions about the activity's learning objectives. In these studies, attitudinal student responses are captured and evaluated using single-item measures.

In this article, we build on prior literature to develop four scales to measure students' attitudes about the general active learning experience. Our hope is that use of these scales by accounting education researchers will increase the rigor of research in this stream. It is in this spirit that we have added a qualitative component to our determination of validity and reliability.

# LITERATURE REVIEW Principles of Survey Methodology

This paper focuses on the construct measurement of single versus multiple survey items. Pedhazur and Schmelkin (1991), when discussing construct validation, state, "The use of a single indicator for the measurement of a construct...almost always poses insurmountable problems, because it is not possible to identify and separate the different sources of variability of the indicator in question" (p. 56). While this statement justifies the reliance on multiple items for construct measurement, the topic was revisited by Bergkvist and Rossiter (2007), who contend that single-items are appropriate in many instances. They examined the application of both single and multiple item scales and documented that predictive validity is not compromised by relying on single-item measures for attributes that are "concrete and singular." Bergkvist and Rossiter summarize the arguments from the extant literature for using multiple items. The item in their list most relevant to this study is that multiple items are "necessary if [the] object is abstract or [the] attribute is abstract" (p.178). Ultimately, Bergkvist and Rossiter assert that their study supports the use of single-item measures for constructs such as attitude, which they consider "doubly concrete." In their terms, "doubly concrete" occurs with a simple object (i.e., an advertisement) and simple attribute (i.e., "liking the advertisement").

In contrast, Diamantopoulos (2005, p. 2) contends that "this line of argument...goes against the fact that constructs, by their *very* nature, are abstract entities." Fuchs and Diamantopoulos (2009) specify eight criteria to determine when single items can yield reliable results. When attempting to capture an abstract construct, Fuchs and Diamantopoulos repeat a general guideline that "the use of multiple-item measures is required, because most constructs, by definition, are too complex to be measured effectively with a single item" (p. 202). Furthermore, single-item measures may be too vague for respondents to incorporate all facets of the construct into their evaluation. Diamantopoulos, Sarstedt, Fuchs, Wilczynski, and Kaiser (2012) summarize their review of the marketing literature as demonstrating "that the predictive validity of single items varies considerably across different [concrete] constructs and stimuli objects" (p. 434). Ultimately, the results of their simulations suggest that in regards to predictive validity, multi-item scales are clearly superior to single items.

#### Active, Authentic Learning Experiences

Active learning is a component of the authentic learning educational movement that seeks to increase students' motivation and learning (Ma & Lee, 2012, p. 272). The

structural ideas of authentic learning in education are often credited to Piaget and other Constructivists (Schreiber & Valle, 2013) who believed that learning is an active, not passive, process, which connects new knowledge to existing knowledge through interaction and analyses, within a context that will be applicable in a work setting (Barr & Tagg, 1995; Brown, Collins, & Duguid, 1989; Lave, 1988; Piaget, 1954, 1974). Prince (2004) further defines active learning "as any instructional method that engages students in the learning process...While this definition could include traditional activities such as homework, in practice active learning refers to activities that are introduced into the classroom" (p. 223). With active learning, students are involved in the learning process through an activity that requires them to "think about what they are doing" (Smith & Cardaciotto, 2011, p. 57). Thus, active learning goes beyond simply participating in an activity in that students must engage in deeper intellectual thought, such as evaluation, synthesis, and reflection (Bonwell & Eison, 1991; Fink, 2003; Smith & Cardaciotto, 2011).

Rule (2006) evaluated 45 articles in the fields of education, as well as arts and sciences, to establish parameters to determine authentic learning. The four focus areas for an authentic learning experience are:

- 1. engages students in problems that simulate the "work of professionals,"
- 2. employs critical thinking skills using open-ended inquiry,
- 3. involves a "community of learners," and
- 4. incorporates activities that are learner-centered and commonly self-directed.

Authentic learning positions students to apply the concepts throughout the learning process (Ma & Lee, 2012). Research in the fields of finance and accounting report increased undergraduate student satisfaction and experiences of deep learning resulting from authentic learning activities (Brimble, Cameron, Freudenberg, Fraser, & MacDonald, 2012; Hui & Koplin, 2011; Killian, Huber, & Brandon, 2012; Turner & Baskerville, 2011).

#### Relevance of Student Attitudes and Perceptions

Learning environment research receives considerable attention in the broader education literature (Fraser, 1998; Opdenakker & Minnaert, 2011; Senocak, 2009; Walker & Fraser, 2005). Lizzio et al. (2002) rely on Biggs' (1989) 3P Model, which describes the learning process as an interaction among presage (learning environment and student characteristics), process (students' learning style), and product (learning outcomes). Within this model, learning environment encompasses situational characteristics, such as teaching method and course structure. Lizzio et al. (2002) indicate a general proposition that it is students' perceptions toward "their learning environment, in light of their motivations and expectations, which determine how situational factors influence approaches to learning and learning outcomes" (p. 28).

# SURVEY DEVELOPMENT Selection of Articles

To construct multi-item scales measuring student perceptions of active learning within an accounting setting, we developed a survey that students completed at the end of the semester, which included four active learning activities. We wanted to include a broad set of items that accounting educators have recognized as important student attitudes. Consequently, we searched ABI Inform (a database of business periodicals) for studies evaluating students' attitudes toward active learning, with a specific emphasis on selecting articles across sub-disciplines within accounting. When evaluating the individual survey items for inclusion in our survey, we intentionally selected ones that reflected the active learning experience and ones that could be generalized across different activities. Thus, our survey consists of a compilation of items selected from the articles discussed in the following section.

#### Selection of Specific Survey Items

We used Montano, Cardoso, and Joyce (2004) as a starting point since this article provides the most comprehensive list of survey items concerning students' attitudes toward active learning within an accounting setting. Their article includes 40 items, assessing the following sub-categories: content learning, skill development, motivation, general assessment, and specific questions about the activities. Since our desire was to create scales with broad applicability, we removed items that were not generic in nature. In all, we selected 20 of the Montano et al. survey items.

We then expanded our survey instrument by including items from four other accounting-related active learning articles: Chu and Libby (2010); Murphy (2005); Morse, Ruggieri, and Whelan-Berry (2010); and Scofield and Dye (2009). We selected an additional 21 survey items from these articles with two purposes: 1) to select items of a generic nature that address the active learning experience and 2) to provide an incremental contribution to the Montano et al. items. Thus, our survey included 41 items regarding students' attitudes toward the active learning experience, which were rated on a seven-point scale, where 1=strongly disagree and 7=strongly agree.

#### METHOD

#### Sample Description

The survey was administered at the conclusion of Managerial Accounting Principles courses where four hands-on, in-class active learning activities were implemented. The survey's first page provided students with a brief description of the active learning activities to anchor their answers to the general active learning experience associated with these four activities.

Students were in three classes at one private university and two classes at a different private university. We received 120 usable responses, which represented a 90% response rate for the students enrolled as of the semester's end. To avoid introducing bias into students' responses, the survey was administered by a colleague at each university. The students were informed through a pre-prepared script that their professor would not be given access to information about their participation or survey responses until after the semester ended.

Analysis of the demographic information indicates that 42.5% of our respondents were female and were 20.6 years old on average. The students were mostly full-time (97.5%) with cumulative GPAs averaging 3.2. A major in business was reported by 95.8%, with 23.9% of the respondents indicating accounting or accounting combined with another business major. As expected, 56.3% of the students were sophomores with juniors constituting another 31.9%.

#### Scale Development

The purpose of factor analysis is to determine the fundamental dimensions that underlie a group of survey items (Hair, Black, Babin, Anderson, & Tatham, 2006). Thus, we undertook an exploratory factor analysis (EFA) with all 41 of the survey items assessing students' attitudes toward the active learning experience. Per Tabachnick and Fidell (2001), we used maximum likelihood as the factor extraction method (to increase the possibility of yielding the population correlation matrix) and promax as the rotation technique (an oblique method as the resulting factors are expected to be subscales of an overall student attitude, and thus, correlated). Also, we used minimum factor loadings of 0.50 to determine acceptable loadings, as Hair et al. (2006) indicate that level as "practically significant." In determining the number of factors, we relied on the common eigenvalue minimum of 1.0. In addition, according to Hair et al.'s (2006) guidelines, our sample size is sufficient for identifying significant factors. We commenced a procedure for interpreting the factor matrix. For this evaluation, we relied on five steps in the process described by Hair et al. (2006). First, we examined the factor loadings generated in the factor matrix. Not surprisingly, this EFA produced unclear results. During this initial evaluation, 14 of the 41 items either had significant cross-loadings or failed to load (given our minimum of 0.50). In other words, this initial EFA failed to produce a simple structure for the survey items (i.e., where an item has one significant loading on one factor) that resulted in distinct constructs. Second, we reviewed each item and identified the significant loadings of each, across the factors. Third, we examined the communalities for each of the 41 items. These values indicate the amount of variance for each item that is accounted for by the factor solution (Hair et al., 2006). We identified four items that were not sufficiently explained through the factor analysis using the 0.50 guideline.

The fourth step is to determine if the factor model should be re-specified. Thus, the goal is to make a decision regarding how problematic items are treated. For instance, Hair et al. (2006) list these problematic items as ones that (a) have no significant loadings, (b) have too low of a communality, or (c) have a significant cross-loading. One goal of factor analysis is data reduction that enables the replacement of the original data variables with a set of representative variables that facilitate subsequent statistical analysis. Thus, the objective of factor analysis is to minimize cross-loadings and "make each variable associate with only one factor" (Hair et al., 2006). Therefore, we eliminated items that failed to significantly load on a factor, resulted in a low communality, or provided significant crossloadings. At this stage, the remaining set included 26 items. To keep as many items in the analysis as possible, we re-estimated the EFA by re-considering each of the 15 eliminated items, as we wanted to determine if the elimination of an item might correct a cross-loading issue for another item. After completion of this process, the factor analysis produced a four-factor solution with 27 items that each significantly loaded on only one factor. Before proceeding to the fifth step, which involves labeling the factors, we first provide information regarding the empirical examination of the factors.

#### ANALYSES

After we finalized the factor solution, we followed the guidelines from Nunnally and Bernstein (1994) to examine the factors, which included undertaking confirmatory factor analyses (CFA), computing Cronbach's alphas, and reviewing the range of responses. Once again, we used maximum likelihood extraction along with promax rotation. These factor loadings are provided in Table 1. A CFA for each of the four factors yields a single factor. All loadings exceed the 0.50 guideline proposed by Tabachnick and Fidell (2001). Thus, evidence is provided for the uni-dimensionality of the scales.

			Cronbach's alpha
Impa	ct on Studying for Current Class (variance explained of 74.8	3%)	0.951
Item No		Factor Loading	
1	l used what I learned from the activities to study for the exams. <sup>a</sup>	.866	
The I	hands-on activities		
2	helped me to clarify the most difficult contents of the subject by making them easier to understand. <sup>b</sup>	.821	
3	made me study better. <sup>b</sup>	.849	
4	motivated me to work harder in the class. <sup>b</sup>	.765	
5	helped me in preparing for examinations. $^\circ$	.901	
6	changed my attitude in the way I approach my studying. $^{ m b}$	.787	
7	provided additional help (beyond merely doing the		
	homework) in terms of learning managerial accounting. <sup>a</sup>	.819	
8	helped me better prepare for the exams. °	.927	
Perce	eption of Authentic Value (variance explained of 78.2%)		0.953
1	l think that the time devoted to the activities was worthwhile. <sup>b</sup>	.885	
2	I believe including the active learning activities in this course was useful. <sup>b</sup>	.836	
3	I wish these types of activities were used in all my classes. <sup>d</sup>	.842	
4	I would like to see more active learning activities in my		
	future classes. °	.892	
5	All things considered, I believe that the active learning activities were worthwhile. <sup>b</sup>	.928	
6	l like this type of hands-on activity more than the traditional class lecture. °	.793	
7	l would like it if this type of hands-on activity was used in other courses. <sup>c</sup>	.864	

Table 1. Rotated factor matrix - confirmatory factor analysis final solution

Atti	cude toward Current Class (variance explained of 73.5%)		0.927
The	hands-on activities		
1	helped me feel positive towards the accounting class. $^{ m e}$	.868	
2	made it more comfortable for me to participate in class discussion. <sup>d</sup>	.802	
3	helped me to understand, widening and relating my ideas. $^{ m b}$	.791	
4	improved my opinion on the contents of the class. $^{ m b}$	.833	
5	helped me feel positive towards accounting. $^{\circ}$	.842	
6	made me feel more actively involved in the learning process		
	for managerial accounting. <sup>a</sup>	.817	
Inter	rest in Current Class (variance explained of 68.2%)		0.903
1	The active participation during the activities made the class		
	more interesting. <sup>b</sup>	.835	
2	I found that the activities made the topic of managerial		
	accounting more interesting. <sup>a</sup>	.856	
3	In general, I think these activities reveal the teacher's		
	concern for quality teaching. <sup>b</sup>	.601	
4	The hands-on activities have been interesting. $^{ m b}$	.787	
5	The hands-on activities allow sharing of ideas, responses		
	and points of view with my peers and teachers. $^{ m b}$	.734	
6	The hands-on activities made the class more interesting. <sup>a</sup>	.883	

Only the factor loadings exceeding 0.50 are included in the table.

Extraction Method: Maximum Likelihood. Rotation Method: Promax with Kaiser Normalization. Items were modified from: <sup>a</sup> Murphy (2005); <sup>b</sup> Montano et al. (2004); <sup>c</sup> Chu and Libby (2010); <sup>d</sup> Morse et al. (2010); <sup>e</sup> Scofield and Dye (2009).

The correlation matrix in Table 2 reports in the diagonal the Cronbach's alpha for each scale. All of the values exceed the generally accepted cutoff of 0.70 advocated by Nunnally and Bernstein (1994), as well as the less stringent cutoff of 0.60 for exploratory research such as what was done in this paper (Hair et al., 2006). Therefore, each factor demonstrates reliability. Also in Table 2 are the correlation coefficients between the pairs of constructs. A comparison of the Cronbach's alpha and each of the correlations shows that the correlation within each construct is higher than the correlation across constructs. Thus, evidence of discriminant validity is obtained.

	Studying	Authentic	Attitude	Interest
Studying	0.951			
Authentic	0.791**	0.953		
Attitude	0.720**	0.707**	0.927	
Interest	0.642**	0.737**	0.729**	0.903

Table 2. *Reliability and correlation matrix: The Cronbach's alpha values are reported in the diagonal, while the other values represent the correlation coefficients.* 

\*\* significant at p < 0.01 (2-tailed)

Where: Studying=Impact on Studying for Current Class;

*Authentic=Perception of Authentic Value;* 

Attitude=Attitude toward Current Class; Interest = Interest in Current Class

Most items use the full range of potential responses. A review of the kurtosis and skewness showed that all the variables demonstrate accepted levels according to general guidelines noted by Kline (2005) of < 3 for skewness and < 10 for kurtosis.

#### Interpretation of Scales

As the final step in the factor interpretation, we asked other accounting faculty to review the factor groupings to provide independent labels describing each one. Based on this feedback and our own review, we labeled the four factors: Impact on Studying for Current Class, Perception of Authentic Value, Attitude toward Current Class, and Interest in Current Class.

The first factor, Impact on Studying for Current Class, consists of eight items that capture whether the active learning activities aided them when studying. Scale items include "The hands-on activities helped me better prepare for the exams." The second factor, Perception of Authentic Value, measures students' opinions about the extent to which the active learning activities were worth the time invested and whether they should be used in future classes. The seven items in this factor include, "I think the time devoted to these activities was worthwhile."

The third factor, Attitude toward Current Class, includes six items that assess the impact that the activities have on the students' overall opinion toward the current class. The items evaluate whether, for example, "The hands-on activities improved my opinion on the contents of the class." The fourth factor, Interest in Current Class, captured students' attitudes regarding whether the active learning activities made the current class more interesting. The six items in this scale include "The active participation during the activities made the class more interesting."

The empirical data collected result in these four distinct factors that now can be used to measure students' attitudes and perceptions regarding active learning. In the next section, we supplement this empirical data with a qualitative review of student feedback.

# EXPLANATORY MIXED METHODOLOGY

In explanatory mixed method design, triangulation consists of first collecting quantitative data and then collecting qualitative data to "help explain or elaborate on quantitative results" (Creswell, 2008, p. 560). In this study, factor analysis refined and reduced items on a survey instrument to form scales. These scales focused on the students' perception of value added from the incorporation of active, authentic learning. Using qualitative inquiry, we followed this factor analysis with the thematic evaluation of open-ended questions designed to evaluate the course's strong and weak points; questions whose analysis served as a secondary source to "increase scope, depth and consistency" (Flick, 2002, p. 227) of the scales and provide an enriched student voice to the value of active, authentic learning experiences as quantified in the scales (Creswell & Plano Clark, 2007).

We based the qualitative analysis on data gathered from the end-of-course student evaluation form for Researcher A. The university distributes this student evaluation of teaching (SET) instrument throughout the campus to collect student perceptions. Consequently, the SET did not prompt students to recall the active learning activities. Data from the SET were collected approximately one month after the last in-class activity was completed. We analyzed students' responses to two open-ended questions before and after the introduction of active, authentic learning activities. These questions reveal students' attitudes toward the overall course by asking them to comment on the 1) strong points of the course, and 2) weak points of the course.

SET respondents consisted of 101 students, 38 before activities (BA) and 63 after activities (AA), who were enrolled in Researcher A's course. We eliminated 79 of the 202 potential student comments as the student did not provide a comment (n = 75) or the comment did not address the question asked (n = 4). Thus, we relied on 123 comments (44 BA, 79 AA).

Multiple, intensive readings combined with constant comparison of survey responses by the researchers established the parameters for analytical groupings. Inter-rater agreement was negotiated on the summative and salient attributes of each theme, subtheme, and category.

# QUALITATIVE ANALYSIS

Three themes on student attitudes toward strengths and weakness in the introductory managerial accounting course emerged: 1) Class Experience, 2) Relevance, and 3) Course Materials. Each theme divided into four subthemes reflecting a two-by-two matrix of 1) columns titled Self-Directed versus Teacher-Directed Learning and 2) rows titled Recognition versus Lack of Recognition of the Value and Application of Knowledge. Comments classified as self-directed learning often were written in first person or related to the student's personal experience, while teacher-directed comments emphasized decisions made by the instructor.

As seen in Table 3, two of the themes, Class Experience and Relevance, further subdivided into several categories as discussed below. Table 3 presents the relative frequency of comments for each theme, subtheme, and category stated as a percentage of the total BA comments and AA comments, respectively.

The Class Experience Theme and the Relevance Theme include many comments that are similar to and congruent with the four factors presented in Table 1. The Relevance Theme also addresses the authenticity of the learning environment. Combined, these two themes constitute over 85% of both the BA and AA student comments; consequently, they are the focus of the following discussion.

#### **Class Experience Theme**

The Class Experience Theme relates to students' comments regarding different aspects of their experience in the introductory managerial accounting class. This theme comprised the majority of student comments both before and after the activities were introduced (BA = 55%, AA = 60%). Overall, students made more positive comments after the activities were introduced (BA = 25%, AA = 30%). Within each subtheme, four categories emerged: Testing, Presentation of Classroom Content, Difficulty, and Value/Interest/Attitude (see Table 3).

The category Value/Interest/Attitude dominated the BA comments (30%), with comments like "Good stuff to know" and "Important and seems practical and useful." In contrast, the most frequent AA comments relate to the category Presentation of Classroom Content (22%) with statements such as "The activities we did in class were helpful and explained the work very clearly." The noticeable increase in positive comments for this category (BA = 5%, AA = 17%) highlights the lasting impression of the active learning activities.

The Class Experience Theme includes all comments that specifically mention the active, authentic learning activities. Hence, the comments provided by the AA students give voice to the four-factor solution presented in Table 1. Table 4 contains selected student comments that convey similar sentiments as each factor and allow for a richer factor interpretation. The selected student comments appeared on the end-of-course evaluation form after implementation of the authentic active learning activities and are in response to the open-ended prompt: "Strong Points–The Course." The comments convey similar sentiments as the four-factor solution presented in Table 1.

Table 3. Qualitative Summary of Themes in Student Comments: relative frequency of student comments on the end-of-semester course evaluation forms before and after the introduction of the authentic active learning activities

	Before Activities (n=24/44=55% overall)		After Activities (n=48/79=61% overall)		
		Teacher-	Self-	Teacher-	
	Self-Directed	Directed	Directed	Directed	
SUBTHEMES	Learning	Learning	Learning	Learning	
Recognition of the Value and Application of					
Knowledge	16%	9%	15%	15%	
Testing		4%	1%	1%	
Presentation of					
Classroom Content		5%	4%	13%	
Difficulty			3%		
Value/Interest/Attitude	16%		7%	1%	
Lack of Recognition of the Value and Application of					
Knowledge	9%	21%	5%	25%	
Testing	2%	2%	1%	8%	
Presentation of					
Classroom Content		3%		5%	
Difficulty	2%	7%	1%	7%	
Value/Interest/Attitude	5%	9%	3%	5%	

Panel A: Class Experience Theme

	Before Activities (n=16/44=36% overall)		After Activities (n=21/79=26% overall)	
SUBTHEMES	Self- Directed Learning	Teacher- Directed Learning	Self- Directed Learning	Teacher- Directed Learning
Recognition of the Value and Application of Knowledge	18%	18%	15%	8%
Work-Related Authenticity	13%		10%	3%
Course-Specific Authenticity	5%	18%	5%	5%
Lack of Recognition of the Value and Application of Knowledge				4%
Work-Related Authenticity				1%
Course-Specific Authenticity				3%

# Panel B: Relevance Theme

Panel C: Course Materials Theme

	Before Activities		After Activities	
	(n=4/44=9% overall)		(n=10/79=13% overall)	
SUBTHEMES	Self- Directed Learning	Teacher- Directed Learning	Self- Directed Learning	Teacher- Directed Learning
Recognition of the Value and Application of Knowledge	2%		5%	1%
Lack of Recognition of the Value and Application of				
Knowledge		7%	3%	4%

The frequencies are reported as a percentage of the total comments made either before the activities (n=44) or after the activities (n=79), respectively.

 Table 4. Selected student comments related to the Four-Factor Solution

#### Factor 1: Impact on Studying for Current Class

In class activities. Explains process thoroughly.

Material that we go over in class is relevant to what is covered on the exam.

Liked the different exercises we performed so that we could better understand the material.

#### Factor 2: Perception of Authentic Value

Material is very important for real life work.

A lot of useful information that will be used in everyday business life.

In class activities, examples done in class.

#### Factor 3: Attitude toward Current Class

I have learned a lot about managerial accounting which will help me in the future. Interactive.

Very informative, equips us with relevant skills and knowledge.

#### Factor 4: Interest in Current Class

I liked that we did the in-class exercises/activities because it helped mix up the class.

She did the hand on exercises that really help as well as makes the class fun.

It was very interesting material.

#### Relevance Theme

The Relevance Theme includes student comments about how the introductory managerial accounting course prepared students for real life work and provided appropriate content. Within each subtheme, two categories emerged: Work-Related Authenticity and Course-Specific Authenticity. Both the BA and AA students commented with similar frequency on Work-Related Authenticity (13% and 14%, respectively). For example, one student wrote: "This course is great in that it will help in the future with making important decisions for a firm!"

Comments made by students under the Relevance Theme predominantly speak to their valuing of authentic learning in the classroom. Student comments in the Relevance Theme also correspond to the four-factor solution presented in Table 1.

Ultimately, this qualitative analysis documents students' perceptions and attitudes toward the course and its content and served as a secondary explanation to the quantitative results. Themes and student comments that supported these themes resulting from factor analysis expanded quantitative results and gave voice to the underlying construct within the factors revealed (Creswell & Plano Clark, 2007).

# ADDITIONAL ANALYSES

Our next step is to empirically examine the difference between the reliance on a single question versus a multiple-item scale. We apply two approaches to studying this issue: 1) determine the reliability of the single-item measure and 2) testing a structural equation model of expected outcomes for the measures.

Loo (2002) computed the reliability of single-item scales in comparison to estimated minimum reliability benchmarks. His calculations applied Spearman's "classical formula for the correction for attenuation" as follows (2002, p. 68):

$$\overline{r_{xy}} = \sqrt{r_{xx}} \sqrt{r_{yy}}$$

Where:  $r_{xy}$  = the correlation between variables  $r_{xx}$  = the reliability of the single item x  $r_{yy}$  = the reliability of the multi-item scale y

Wanous, Reichers, & Hudy (1997) state a reasonable minimum estimated reliability of a single item of approximately 0.70. We calculated the correlation between the scale and the item that resulted in the highest load on that factor. By substituting this number, along with the scale's Cronbach's alpha, we computed the following estimates of reliability for the single item: Impact on Studying Scale, Item 8 – 0.947; Perception of Authentic Value, Item 5 – 0.948; Attitude toward Current Class, Item 1 – 0.900; and Interest in Current Course, Item 6 – 0.919. Therefore, this analysis suggests that use of a single item to measure these constructs may be appropriate.

To apply a more rigorous analysis of the issue, we constructed a structural equation model testing our scales as antecedents to students' approaches to learning. This model is based on the research by Lizzio et al. (2002) who depict the learning environment as an antecedent to the same approaches to learning scales. We then estimated the model using SPSS AMOS version 20. The model applying the single item fails to generate a model with acceptable fit indices. In contrast, the model that includes the multiple item scales provided acceptable fit indices.

Our goal with this analysis is not to test hypotheses. Therefore, we will not delve into an analysis of each relationship. Our purpose is to determine if single items are acceptable in estimating models relating our scales to expected outcomes. Examining the results from this perspective indicates that the single item did not result in a useable model. The Hoelter's Critical N supports our contention that sample size is not a restriction in this case, as our sample exceeds the minimum level specified by that measure.

# CONCLUSION

Fuchs and Diamantopoulos (2009) demonstrate that the variation in attitude and perceptions necessitates multi-item scales to fully capture the constructs of interest. This occurrence is especially prevalent in studying the efficacy of active learning. These scales provide researchers with the building blocks to investigate and model the role that student attitudes (i.e., affective domain) have on specific learning outcomes (i.e., cognitive domain).

To improve the scales' generalizability, we relied on existing survey items that have already been used to measure students' attitudes regarding active learning experiences. We specifically selected items from articles across accounting sub-disciplines with different activity characteristics. We undertook explanatory mixed methodology using the end-ofcourse commentaries to conduct a follow-up explanation model to expand quantitative results (Creswell & Plano Clark, 2007). In both the scales and the deconstruction of dialogue, students related to issues of class experience, relevance of the course, and course materials.

We recognize that the development of these scales was done within the context of a single course with a limited set of activities. In addition, we worded the survey items to focus students' responses on our learning activities. Thus, we anticipate that some wording may require modification for future studies. However, minor variations that retain the primary stem of the items would not be expected to change the applicability of the scales across settings. Nonetheless, these issues related to generalizability highlight the need for future researchers to assess the stability of these scales across different samples and activities. Ultimately, we envision these scales as being a necessary first step toward the ability of future researchers to efficiently and effectively test a more comprehensive model of the benefits of active learning.
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## Dyslexia and the Need for Teacher Training: A Collaborative Three-Pronged Approach Between a University and a Community Partner

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### Abstract

An absent element in many education preparation programs is sufficient training on dyslexia and how to effectively remediate the disorder. Defining characteristics and remedial strategies for dyslexia have been established for decades but have not sufficiently become a part of teacher preparation programs, thus creating a gap in professional knowledge and skill. This article explores how one university and a community partner agency collaboratively developed a three-pronged approach to address the gap by developing a graduate-level certification program, a professional development series for in-service training, and a potential regional tutoring center to support students with dyslexia.

*Keywords:* program development, pre-service, in-service, dyslexia, teacher preparation, professional development

## UNDERSTANDING DYSLEXIA AND LACK OF TRAINING

The number of students receiving special-education services in the public classroom has steadily increased since the 1970s. Currently the number of students receiving specialeducation services is nearing 14% (6.6 million) of the public-school population in the United States (U.S.) (National Center for Education Statistics, 2017). Since the 1970s, the level of knowledge of specific disabilities prolifically become more explicit. However, there still remains much to learn about identifying key features of specific high-incident disabilities and how to effectively support learners with such deficits. Dyslexia is one of the specific disabilities about which educational professionals are beginning to sense an urgency to gain further knowledge and skills (Flink, 2014; Mills, 2017; Shaywitz, 2005).

It is suggested that an estimated 15% to 20% of the population in the U.S. have dyslexia but have not been formally diagnosed (Flink, 2014; Kang, Lee, Park, & Leem, 2016; Shaywitz et al., 2007). Based on such statistics it is safe to assume that all classrooms at every educational level have students who have dyslexia. Likewise, such statistics suggest that it is necessary for teachers of all grade levels to be properly prepared to support the academic needs of students with the disability. Yet, many educational professionals remain uncertain in their understanding of key features of dyslexia and how to support dyslexic students in the classroom (Shaywitz, 2005; Shaywitz et al., 2007).

Dr. Sally Shaywitz (2005), a leading researcher at the Yale Research Institute, states that empirically based research on the defining characteristics of dyslexia, specified assessment criteria, and remediation strategies for the deficits are well established and have been for more than twenty years. She emphasizes that this information has unfortunately not made its way into the curriculum of teacher-preparation programs and in-service training for K-12 educators. Mills (2017) suggests education professionals frequently misunderstand the characteristics of dyslexia, which leads to a belief that it is a disability that causes a person to see letters, words, and numbers backwards. Dyslexia does not cause a person to see stimuli backwards but affects the neurological processing of the stimulus by transmitting the elements of text out of sequence or connecting the stimulus to an inaccurate visual cognitive code created by that person (Norton, Beach, & Gabrieli, 2015; Redford, 2017).

Dyslexia is a disorder that is neurobiological and impacts an individual's phonological processing and phonological memory (Lyon, Shaywitz, & Shaywitz, 2003; Wajuihian, 2012). Simply stated, it is a brain-based disorder that causes deficits, in varying degrees of severity, in both an individual's reading comprehension and fluency. These deficits affect an individual's ability to properly hear distinctive letter sounds as well as blended letter sounds that make up words. Additionally, it is a disability that impairs an individual's ability

to effectively use rapid-memory recall, fluently organize thoughts for storing and retrieving, as well as the ability to fluently expressing thoughts (Gooch, Snowling, & Hulme, 2011).

Dyslexia is a specific reading disorder that is significantly different than just having poor reading skills. A student with poor reading skills may not have a reading disability. Poor reading can relate to such ecological factors as economic disadvantage, an environment that is weak with learning opportunities, low motivation or interest, or low intellectual ability (Ohmstede-Beckman, Messersmith, Shepard, & Cates, 2012). As a reading disorder, dyslexia does not correlate with a low Intellectual Quotient (IQ), the lack of ambition to learn to read, poor instruction, or an impoverished environment (Judge, 2013; Ohmstede-Beckman et al., 2012). Individuals with dyslexia frequently have an average-toabove-average IQ and are very creative visual-spatial thinkers who can problem solve by seeing the big picture rather than specific details (Kang et al., 2016; Norton, Beach, & Gabrieli, 2015; Redford, 2017). This processing skill becomes a deficit when required to read, which requires verbal-linguistic processing of the brain for success (Kang et al., 2016; Mills, 2017).

Many students with dyslexia (identified and not identified) are not receiving the necessary intensive evidence-based instruction along with compensatory strategies to remediate the effects of the disorder (Lyon & Weiser, 2009; Mills, 2017; Moats, 2004). The deficiency of proper instruction for students with dyslexia is a result of insufficient training for teachers or improper implementation of interventions. Research suggests that "most teachers receive little formal instruction in reading development and disorders during their undergraduate studies" (Lyon & Weiser, 2009, p. 476).

Too often teachers intervene with the struggling reader based on the ecological causes of poor reading and continue to use the same intervention for an extended period of time. This long lapse of time spent waiting for the student to respond to an intervention allows the inherent outcomes of the disorder to become more problematic before the teacher begins exploring other possible causes of the reading deficit (Shaywitz et al., 2007). In such an occurrence, the symptoms are commonly misidentified and attributed to poor reading skills, leading the student to fall further behind academically, and often socially as well, from his or her peers. Research validates that the gap between reading skill and grade level continues to increase as time elapses when ineffective intervention or pedagogical methods are used, thus requiring more and more time-intensive intervention for the individual to make just minimal gains in their reading skills later on (Bacon & Handley, 2014; Bogon, Finke, Schulte-Korne, Muller, Schneider, & Stenneken, 2014; Lallier,

Donnadieu, & Valdois, 2013; Moats, 2004; Zoubrinetzky, Collet, Serniclaes, Nguyen-Morel, & Valdois, 2016).

## A GAP IN TRAINING FOR EDUCATION PROFESSIONALS

In 2013, the Ohio Department of Higher Education (ODHE) (known at the times as the Ohio Board of Regents) recognized there was an increased need to provide improved training for pre-service teacher candidates in the area of dyslexia. ODHE commissioned a task force to develop a plan to ensure that institutes of higher education provided the necessary training for pre-service teachers to gain knowledge and skills to properly teach students with dyslexia and students who were performing below expectations in the area of reading. The task force compared Ohio Standards for the Teaching Profession with the International Dyslexia Association (IDA) Knowledge and Practice Standards. The results of the task force's work caused teacher preparation programs to begin aligning knowledge, skills, and disposition standards in courses and programs that teach reading instruction to IDA standards, and for pre-service candidates in such programs, to pass a competency exam on reading (Ohio Board of Regents Dyslexia Task Force on Pre-service Teacher Education, 2013).

The directive by ODHE to increase knowledge and skills of pre-service teachers in higher education on dyslexia was a significant step in the process of improving the support for students with dyslexia as well as students who are identified as struggling readers. However, many school professionals remain unclear how to properly differentiate between individuals who are identified as struggling readers because of poor reading skills and students who have dyslexia (Kang et al., 2016; Mills, 2017; Shaywitz et al., 2007). This lack of clarity suggests that institutes of higher education are producing teachers that are aware of dyslexia but still not properly equipped with the skills to support students with dyslexia. Therefore, a gap still remains in the training provided for pre-service teacher candidates, as well as in the professional development for in-service teachers, about what dyslexia is and how to support the deficits that are presented with the disability.

Teacher preparation programs require candidates to enroll in courses that examine the foundational skills of reading instruction and reading skills for all readers. Yet, this focus is often a broad, generalized approach that is not concentrated on a specified reading disorder, such as dyslexia, and on remediation strategies for poor readers. Lyons and Weiser (2009) suggest, "A disappointing fact is that so little has been done in traditional universitybased teacher preparation programs to ensure that teachers have been provided the essential knowledge, skills, and abilities to help students become proficient in reading" (p. 478). Therefore, teachers are not formally trained in identifying the common symptoms of dyslexia or evidence-based practices that incorporate both instructional strategies and sensory integration strategies. The generalized approach to reading instruction that is taught to preservice teacher candidates is an effective approach to remediate poor reading skills but is ineffective for individuals with dyslexia. If a teacher's intervention for a struggling reader is designed to target variables that correlate with poor reading but the problem is a result of dyslexia, the student is at an increased risk of encountering consistent struggles with academic learning throughout life.

Because dyslexia is a brain-based disorder, it requires interventions that target both biological elements and ecological components (Kraus, 2012; Moats, 2004; Ramus, 2014). Interventions that remediate dyslexia incorporate sensory integration techniques paired with a systematic approach in phonemic awareness and phonological processing (Nicolson, Fawcett, Brookes, & Needle, 2010). If teachers are provided training on the early warning signs of dyslexia along with evidence-based interventions to implement in the classroom, schools will become properly equipped to remediate many deficits that accompany the disorder as well as potentially eliminate the number of individuals who require supports through an Individualized Education Plan (IEP). Similarly, such an approach may align with a school's Response to Intervention (RtI) plan, where screening for dyslexia is a necessary component.

Indeed, there is a sense of urgency in the education system for teachers to have more in-depth knowledge on how to identify students who have dyslexia and how to intervene as early in their educational process as possible. Researchers express that a program that intensely focuses on phonemic awareness, taught in a systematic manner, and in conjunction with brain-based curriculum developed for individuals who rely more on right-brain processing (i.e., visualization strategies and physical movement paired with learning), is fundamental in the remediation process (Bacon & Handley, 2014; Kraus, 2012; Nicolson, Fawcett, Brookes, & Needle, 2010; Ramus, 2014; Shaywitz et al., 2007). Therefore, additional pre-service and in-service training for educators is essential in order for the proper personnel to gain the aforementioned level of knowledge to fully support the academic needs of students in all levels of education.

The following sections demonstrate how two entities came together to form a collaborative partnership to address the pressing need of enhanced support to both students with dyslexia and teachers. Both entities agree that there is a gap in teacher knowledge and skill sets when it comes to working with students with dyslexia. Additionally, the two parties concur that a strong community partner that provides supplemental assistance for

individuals with dyslexia is necessary in conjunction with the support provided in local school teachers.

## A THREE-PRONGED APPROACH TO IMPROVE PROFESSIONAL TRAINING ON DYSLEXIA

Wright State University's (WSU) Intervention Specialist (IS) program and CodeBreakers, LLC, collaboratively created a three-pronged system to fill the gap in the knowledge and skill level of pre-service and in-service teachers regarding dyslexia, as well as to meet the community need for enhanced support. The first two prongs of the system are a graduate certification program in the area of dyslexia and a professional development (PD) series offered to schools for in-service training. The third prong of the system is a potential dyslexia center that will provide WSU students and local community residents support not just in dyslexia but also in the area of literacy development.

During the 2014-2015 academic year, the director of the IS program at WSU began receiving phone calls from numerous families seeking support for their children who were diagnosed with dyslexia. Each family was trying to identify services that provided tutoring for dyslexia and were seeking advice on what they could do for their child to help, because the schools were equally unsure on how to help. The university at that time did not have any support systems in place and discovered that regional Educational Resource Centers (ERCs) did not have professionals that were trained to specifically support students with dyslexia. It was discovered during this time that there was one organization in the area of the university that provided tutoring for dyslexia, but each time a new client was registered they would have approximately a two-year wait before they could begin tutoring.

A colleague of the IS program director, who works for one of the state's regional assessment teams, identified an independently owned business that provides tutoring specifically for dyslexia that had been advocating on behalf of individuals diagnosed with dyslexia for over a decade, but consistently encountered resistance from schools and other educational professionals. The colleague set up an introductory meeting between the director of the dyslexia tutoring firm and the director of the IS program at WSU. During the initial meeting, both discussed their experiences with dyslexia and discovered they shared similar professional philosophies and objectives that centered on the field of dyslexia. Similarly, both agreed that there is a growing urgency to enhance training for educators that work with students with dyslexia. During the spring of 2016 the director of the IS program at WSU, in collaboration with CodeBreakers, LLC, a dyslexia screening and tutoring firm, began examining how to address the lack of preparation for educators on dyslexia. Over the course of a year, the collaborative team developed a Dyslexia Specialist Certification program and a series of PD seminars to offer to local educational agencies. The team developed a partnership with a regional grade K-5 school to implement the PD.

### Dyslexia Specialist Certification Program

In March 2016, the WSU IS program and CodeBreakers additionally partnered with the directors of the university's reading endorsement program. The three entities began meeting monthly to identify the local and state need for a certification program. The investigation revealed that there was only one agency in the local area that provided tutoring for individuals with dyslexia. However, the identified agency had a two-year waiting list of clients looking to receive services. Likewise, at the conclusion of the investigation, the results suggested that only two additional higher education institutes in the state provided a program that trained education professionals on features of dyslexia. One of the two program explored embedded the information into the core reading courses required by teacher candidates.

The development team continued to meet at WSU from April 2016 to June of 2016. During this time the team spoke with three local Educational Service Centers (ESC) in the region to inquire about the communicative need from schools for dyslexia services. All three regional ESCs identified that they frequently received inquiries by school districts for assistance with students diagnosed with dyslexia but their agency does not have a professional staff member qualified to provide the services, and staff are not sure where to direct the schools for assistance.

Teacher preparation programs have begun to embed dyslexia standards into required reading instruction courses for pre-service teacher candidates. However, the content taught to meet the now-embedded standards on dyslexia is frequently limited in the depth necessary to train teacher candidates to proficiently support students with dyslexia (Lyon & Weiser, 2009). This limited depth of instruction on dyslexia is not because of either a lack of knowledge or awareness for the importance of training on dyslexia by higher education, but because teacher preparation programs experience a dilemma of how to add further required content to classes that are already packed with a plethora of mandated academic standards. Because of the already heavy load of obligatory standards, it is unreasonable to suggest higher education add further criteria that expands the level of training for teacher candidates on dyslexia. Therefore, our solution was to create a program that would offer supplementary training to professionals that would equip candidates to serve as activists and consultants to local educational agencies, in their current professional field, or both.

The program we developed is a graduate level certification program offered to professionals from various fields that work with individuals of all ages and is not restricted to only education professionals. The courses in the program were created in order that undergraduate teacher-candidates could begin the program with senior permission and continue as graduate students. The course sequence for the certificate is completed in three to four semesters and includes courses that provide an overview of what dyslexia is and how it impacts a student academically and socially, the importance of multisensory teaching and phonemic awareness instruction as it relates to dyslexia, and assessment and intervention plan development for students with dyslexia.

#### Dyslexia Professional Development Seminars

In conjunction of the development of the Dyslexia Specialist program, the WSU team created a PD series to offer to educational agencies. The goal of the PD is to equip general education teachers, intervention specialists, school counselors, and school psychologists with explicit, applied literacy techniques for dyslexia that are evidence-based interventions for one-on-one approaches, small group sessions, and whole-classroom methodologies. The series is based on 5 strands that identify core areas of dyslexia. Collaborative discussion of each of the strands during the seminars broadens professional practitioners' awareness of the range of skills, knowledge, and attributes required for successful teaching practice for students with dyslexia. The 5 strands include: (1) foundational skills for reading, writing, and speaking; (2) characteristics of the struggling reader, those with dyslexia, and the social/emotional implications; (3) the neuroscience behind the struggling reader and those with dyslexia; (4) classroom approach training; and (5) bringing it all together through professional debriefing of successes and struggles in the classroom. The PD series is based on four key outcomes: (1) improved student achievement in reading; (2) increased teacher knowledge in dyslexia; (3) improved teacher ability to anticipate, react to, and reflect on students' reading skills; and (4) improved school culture inclusive of struggling readers.

The content of the PD sessions provides participants with research-based knowledge about truths versus myths of dyslexia, common warning signs to watch out for in the classroom setting, how to interpret standardized test scores to identify students who may have dyslexia, and evidence-based multi-sensory interventions that are applicable for wholeclass settings and small-group settings. After each session, PD trainers conducted classroom observations with the participants. The observations afforded trainers the opportunity to offer additional support for the implementation of the classroom interventions. The participants also had the opportunity to work with the PD trainers to identify potentially dyslexic individuals and receive immediate feedback on the accuracy of their observation.

During the initial PD session, and again during the final session, participants completed a self-reporting evaluation of their understanding of the defining characteristics of dyslexia, how to assess for dyslexia, and how to intervene in the classroom for students with dyslexia. Each time the evaluations were administered, participants were given the opportunity to express details surrounding dyslexia that they believed they still needed further training on. The opportunity to express areas of uncertainty around dyslexia afforded feedback to the PD trainers and school's administration on further support necessary for the participants. Once both evaluations were completed and analyzed by the PD trainers, the participants were given the two evaluations back in order to personally compare their knowledge growth from the beginning of the sessions.

### WSU Dyslexia and Literacy Center

The collaborative effort between WSU and CodeBreakers, LLC address the overcrowding of content standards and the often limited depth of training on dyslexia for pre-service and in-service educators. However, it doesn't fully address the need for services for individuals with dyslexia outside of the local educational setting. The third prong in our collaborative effort to support individuals with dyslexia is to establish additional community partners that will assist in the development of a WSU Dyslexia and Literacy Center. The vision is of a center that will provide academic support and social-emotional care to WSU students, local community members, and educational agencies across the region. The center will provide evidence-based remediation strategies to individuals who have dyslexia as well as remediation to individuals who are poor readers using such strategies as Reading Recovery (http://www.readingrecoveryworks.org/).

The development of the Dyslexia and Literacy Center will add support for local educational agencies in the remediation process for individuals with dyslexia. Because classroom teachers are frequently overextended in trying to meet the individual needs of many students at one time, students with dyslexia do not always receive the one-on-one support of two to four hours of multisensory intervention per week that research suggests is required for effective remediation (Shaywitz, 2005; Shaywitz et al., 2007). In addition

to literacy tutoring, the center would provide mental-health counseling for the social and emotional implications that often negatively impact life for individuals with literacy deficits.

The WSU Dyslexia and Literacy Center's main purpose is to provide the necessary support for individuals with dyslexia and poor reading skills. However, it will equally serve as an on-campus laboratory for WSU teacher candidates, administrative candidates, counseling candidates, and continuing education teachers who are working on reading certifications or endorsements to obtain hands-on practice with evidence-based strategies while being supervised by trained professionals. The hope is that the center will become a central location in the region where community partners who provide tutoring for literacy deficits can offer their services to meet the needs of many individuals in the region.

## CONCLUSION

The dyslexia certification program and PD series created by WSU and CodeBreakers, LLC is a model developed to meet the immediate need for effective academic support and social-emotional support for students with dyslexia and literacy deficits. The need for deeper training for educators specifically focused on dyslexia is growing and is increasingly being recognized by governing agencies (Ohio Board of Regents Dyslexia Task Force on Pre-service Teacher Education, 2013; Shaywitz, 2005). The hope is that the expression of what WSU and CodeBreakers, LLC have implemented, along with the vision for the future of a university-based tutoring center, will inspire other institutions to begin investigating how they too can meet the needs of individuals with dyslexia.

The authors acknowledge that a limitation to this collaborative endeavor is the lack of evidence-based data to support the possibility that the WSU Dyslexia Certification Program and the in-service PD have statistical significance. This narrative of the collaborative three-pronged model has been presented prior to the completion of data collection because the authors believe there is a pressing need to promote advocacy for individuals with dyslexia. Data are currently being collected to support the effort, and it is anticipated that a follow-up manuscript will provide a description of the outcomes. However, based on already established evidence-based research (Flink, 2014; Judge, 2013; Lallier et al., 2013; Nicolson et al., 2010; Redford, 2017; Shaywitz, 2005; Zoubrinetzky et al., 2016), it is hypothesized that the implementation of the dyslexia certification program will have a positive impact on the academic skills and social skills of students with dyslexia and, similarly, that the PD series will have a similar impact.

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## Equity and Adequacy in Ohio School Funding

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### Abstract

This article explores state school funding in Ohio and examines the concepts of equity and adequacy. This is accomplished not by conducting an empirical study but through a thorough review of the current environment of school funding in the state. For Ohio, the concepts of equity and adequacy are especially pertinent when considering that Ohio's funding methods for public education have been found unconstitutional more than once. Recent trends in policy as well as current research are used in determining if Ohio is funding education at necessary levels to provide an adequate and equitable education for all students. Because current education reforms provide a more relevant context for equity and adequacy concerns to policy makers, a review of these reforms, their implications, and how the state ensures that education funding is both equitable and adequate is addressed.

Keywords: adequacy, vertical equity, horizontal equity, Ohio school funding, school finance

Ohio's public school funding has been found unconstitutional by the Ohio Supreme Court as early as 1997 (*DeRolph v. State of Ohio*, 1997). Subsequent State Supreme Court rulings have affirmed previous rulings (*DeRolph v. State of Ohio*, 2000) (*DeRolph v. State of Ohio*, 2002). What, if anything, has the Ohio legislature done to remedy this issue with public education funding? Prior to recent increases, the state's share of funding for Ohio schools had declined over several years due to economic conditions. In 2013, U.S. Census data ranked Ohio 19<sup>th</sup> compared to the rest of the United States, with \$11,197 in per-pupil funding (U.S. Census Bureau, 2015). Although Ohio is in the top half of states in per-pupil funding, has Ohio addressed the issues litigated in the *DeRolph* cases and as such created a public education system that is funded adequately and equitably?

This paper is not an empirical study; its purpose is to examine the current environment and recent changes in Ohio school funding and efforts to ensure that public education funding is both equitable and adequate; nor do we assert that Ohio is, in fact, funding public schools adequately and equitably, but focus instead on examining the state's efforts to do so. Ohio's ability to fund public education adequately and equitably has been challenged in the landmark case of *DeRolph v. State* (*DeRolph v. State of Ohio*, 1997). In Ohio however, Article VI, section two of the state constitution requires funding for a "thorough and efficient" system of common schools (Ohio Constitution). The *DeRolph* series of cases were initiated by the Ohio Coalition for Equity & Adequacy of School Funding (OCEASF), and this group first made the connection between "thorough and efficient" and adequacy and equity (Neff, 2007). Even though this paper looks at Ohio's funding practices in regards to adequacy and equity, this analysis may be applicable to an examination of the thorough and efficient provision. A first step for Ohio may be to determine the minimum standards that Ohio is trying to achieve.

This article will begin by examining the definitions of equity and adequacy found in the research. Both are found often in research over the past 30 years although the definitions vary throughout this time. Because today's education reforms provide a more relevant context for adequacy and equity concerns to policy makers, a review of the current and past environments of school funding in Ohio and its ability to fund schools adequately and equitably will be addressed, in addition to implications for the future and conclusions.

### **EQUITY DEFINED**

According to Crampton and Whitney, a sound state school finance system provides equity for both students and taxpayers and in operating and capital expenditures (1996). However, the concept of equity is difficult to define and even harder to operationalize. Crampton suggests that, for students, equity may be defined as "equality of educational opportunity or equality of access to educational opportunities" (1996, p. 6). This equality of access and opportunity may be subdivided into vertical and horizontal equity. Vertical equity is commonly referred to as "the unequal treatment of unequals," and horizontal equity as "the equal treatment of equals," both typically operationalized in the form of per pupil expenditures (Vesely & Crampton, 2004, p. 113).

Historically, most state education finance systems created a foundation amount attempting to guarantee sufficient funding to provide each student with equal access and opportunity to adequate education (Cubberley, 1905). From the start, this amount developed into a flat state grant for each school child. Unfortunately, as students in both poor and wealthy districts require varying degrees of financial support, a standard amount for each child has resulted in a system of inequity. In response, many states began adopting foundation programs requiring local school districts to levy taxes (Thompson, Crampton, & Wood, 2012). The addition of a tax levy was intended to provide districts with enough revenue to fund a basic education, with the state supplementing the remainder needed to bring poorer districts to a foundation level.

Equity in education finance has been the subject of myriad research in the last decade. In terms of education finance it is important to know the differences between equity and equality. Equality is an ethical value that influences school finance policy and can be defined as the state, ideal, or quality of being equal in areas such as social, political, and economic rights (King, Swanson, & Sweetland, 2005). These opportunities are created by providing funding to a state's districts based on need and doing so equally regardless of student population. Every district receives the same amount of per-pupil funding because it is assumed that all students are the same. This equal funding is most often tied to the concept of horizontal equity (Crampton & Whitney, 1996). This assumes that states fund schools and their students equally because they are all seen as equal (Vesely & Crampton, 2004). Horizontal equity is often regarded as the fairest and aligns with the traditional meaning of equality (King, Swanson, & Sweetland, 2005). It is important to note that equity and equality are not always the same. The pursuit of equitable treatment of students often results in the unequal distribution of resources.

The more complex but more useful concept of vertical equity assumes that districts and their students are not all the same and as such may need more or fewer resources to provide an adequate education (Vesely & Crampton, 2004). Vertical equity allows states to provide varying levels of funding to different districts based on their unique needs and is not always seen as "fair and just" for students (King, Swanson, & Sweetland, 2005). These unique needs for funding could be a result of differences in local funding structures or differences in the student demographics of the local districts.

The concept of vertical equity intends for school programs serving at-risk students to receive additional funds to provide more support and increase those students' likelihood for academic success. At-risk students may be labeled as such because they belong to a student group that is traditionally at risk of low academic achievement through no fault of their own because it has one or more factors commonly associated with low achievement or high dropout rates (Vesely & Crampton, 2004). Because of these factors, more funding may be needed to ensure student success. Berne and Stiefel note, "differences among children may be categorized as those due to characteristics of the individual child, those due to characteristics of the districts where the children reside, or those due to school programs in which the children are enrolled" (Berne & Stiefel, 1984, p. 13). In addition, vertical equity also involves outside factors that affect a child's ability to learn, such as nutrition, health, and family environment (Berne & Stiefel, 1984). This consideration would add the cost of social services to educational services when determining levels of funding allocation. Often school districts are left to provide these ancillary services regardless of the availability of additional state funding.

Vertical equity measures can also be applied to examine decisions of resource allocation within a single district. Within-district resource allocation has been the subject of several recent studies. The aim of one such study was to determine how larger school districts allocated their funds to their individual schools (Baker, 2009). The question was whether or not these large districts with very diverse populations practice equitable distribution of funds based on the differing needs of the students at each of the district's schools. Using New York State as an example, it may be expected that the state would provide higher levels of funding for New York City schools because of greater need. However, within the city's school system would one not also expect New York City to distribute a larger portion of those funds to the schools with the highest need students? (Baker, 2009). This unequal distribution within the district is an example of vertical equity and how it affects decisions not only at the state level but also within the district.

While states are concerned with student equity in state funding, states are also concerned with equitable treatment of taxpayers, as ultimately taxpayers bear the burden of financing education. Because of this, states seek to provide equity among taxpayers in terms of tax capacity and tax effort (Crampton & Whitney, 1996). Just as vertical equity is meant to address fairness in education resources for students, equity for taxpayers also speaks to fairness. Disparities in the amount of taxes collected in different school districts within a state may lead to discontentment or resentment by taxpayers in those districts. States and local school districts need to provide equity to taxpayers if they are to continue current revenue streams and ultimately build new ones (Crampton & Whitney, 1996, p. 6).

## ADEQUACY DEFINED

The term *adequacy* was not prevalent in early state constitutions when describing and establishing what should be the minimum standard. In fact, the term adequacy does not appear in education finance until 1972 with the Report of the (Illinois) Task Force of the Governor's Commission on Schools (Crampton, 1990). The term adequacy appeared again in the court case of *San Antonio v. Rodriguez* in 1973. This particular case focused on local property taxes and the resulting disparity in revenue generated through these taxes. The San Antonio Independent School District and the State of Texas were accused of discriminating against students in poor areas of the district and state based on their funding formula that resulted in lower funds for students who lived in poor areas. The school district was eventually dropped from the suit, and the ruling was in favor of the State of Texas stating that the funding system was neither unconstitutional nor discriminatory (*San Antonio v. Rodriguez*, 1973). In these two instances, the term *adequacy* was used to describe a level of education quality and its necessary funding to be deemed fair and what some would consider a minimum standard.

Although the term *adequacy* did not appear in education finance until the early 1970s, the issue of fair funding for schools dates back to 1905, with the work of Ellwood Cubberley (Banicki & Murphy, 2014). Cubberley's work focused on tax systems that led to unequal funding and as such resulted in inequity; however, this inequity sparked debate as to what type of education was being provided at the lowest end of the spectrum (Cubberley, 1905). Making this determination has proven difficult because of the lack of consensus in American society as to what constitutes Cubberley's idea of a generous education or what schools should be achieving (Cubberley, 1905). As such, Cubberley's concept of a generous and free level of education might be considered the starting point in defining adequacy (Ward, 1987). However, the 1989 Kentucky Supreme Court decision Rose v. Council for Better Education marked the transition to a focus on adequacy in school finance reform litigation (Sweetland, 2014). Rose v. Council for Better Education resulted from a lawsuit brought by 66 rural school districts with relatively low property values in Kentucky. In the ruling, the Kentucky Supreme Court ordered the state to provide funding "sufficient to provide each child in Kentucky an adequate education" (Rose v. Council for Better Education, 1989). Although these events caused Kentucky to create a specific

definition for an adequate education, most states allow for local control of schools to individual counties or districts and as a result there could be numerous definitions of adequacy.

In 1996, Faith E. Crampton provided a unifying definition of adequacy in *Principles* of a Sound State School Finance System, where Crampton states, "A sound state school finance system provides adequate resources to local school districts so that they may achieve state and local educational goals and standards" (Crampton & Whitney, 1996, p. 5). Furthermore, Crampton defines *adequacy* as "adjustments in the overall funding system due to unique characteristics of the state and school districts" (Crampton & Whitney, 1996, p. 10). In other words, adequacy "bases funding on the expenses for facilities, staffing, materials, equipment, and strategies necessary to meet specific academic goals" (Norman, 2002, p. 4). Determining adequate levels of funding requires the establishment of "standards of sufficiency," which may be "quite unrelated to the standard of equity" (Swanson & King, 1997, p. 296). As the opportunity to education may be made equitable for all students, the adequacy of the programming may vary from district to district. This variation suggests a level of inefficiency that should be addressed through funding policy that seeks to maximize educational services as opposed to providing minimum programming.

In 1997, the Ohio Supreme Court in *DeRolph I* declared the school funding system unconstitutional based on their assessment of adequacy (*DeRolph v. State of Ohio*, 1997). This declaration, which came nine years after *Rose*, highlighted the evolving concept of adequacy and its affirmation as a legal strategy (Sweetland, 2014). Within the ruling the Ohio Supreme Court referenced Section 2, Article VI of the Ohio Constitution. It states, "The general assembly shall make such provisions, by taxation, or otherwise, as, with the income arising from the school trust fund, will secure a thorough and efficient system of common schools" (*DeRolph v. State of Ohio*, 1997). This ruling highlights Crampton's definition of adequacy by implying that for Ohio's funding system to be considered adequate it should provide resources to local school districts so that they may achieve state and local educational goals and standards.

While adequate levels of funding needed to achieve the intended goals and standards of a school system are a major component in determining adequate levels of support, the manner in which school funding is generated at the state and local levels should also be examined. This includes adequate funding available for not only operating expenditures but also for capital structures.

The condition of Ohio's school facilities keynoted major deficiencies in the state's school funding program. State funding was extremely limited with respect to new

construction and replacement of school facilities. To make matters worse, inadequate operating funds made continuous maintenance and renovation of facilities nearly impossible for many school districts (Sweetland, 2015, p. 126).

Most districts rely on local property wealth for the cost of new schools and maintenance (Crampton & Whitney, 1996). The issue of unmet infrastructure and the need for capital improvements also requires examination. A comprehensive national study from 2008 found that Ohio had an estimated infrastructure need of \$9.32 billion (Thompson, Crampton, & Wood, 2012). This is well above the national average of \$5.1 billion per state (Thompson, Crampton, & Wood, 2012). The federal government recognized the need for capital improvement funds and acted by passing the American Recovery and Reinvestment Act of 2009 (Ingle, Bowers, & Davis, 2014). Adequate funding for facilities for school districts is an area with little research and is ripe for study (Glenn, Picus, Odden, & Aportela, 2009). After considering these aspects of adequacy and how they impact funding for public schools, focus in Ohio can now be directed to the concept of equity.

## EQUITY AND ADEQUACY IN OHIO EDUCATION FINANCE

Ohio has had its fair share of equity and adequacy debate when discussing public education finance. Of course, many concerned parties within Ohio reference the *DeRolph v. State of Ohio* litigation and its subsequent rulings. The central theme of the Ohio Supreme Court was that Ohio's funding model was unconstitutional, and the court added that it was concerned for finance equity and the educational opportunities for students in poor school districts (Sweetland, 2014). The *DeRolph* litigation led to three subsequent rulings, and each time Ohio's funding structure for public education was found unconstitutional. The unconstitutionality of Ohio's school funding was identified even earlier in the case of *Board of Education of City School District of City of Cincinnati v. Walter* (1979). In this case the plaintiffs argued that Ohio's funding structure at the time violated the state's constitution that called for a system of common schools that had the qualities of being thorough and efficient. The plaintiffs argued that the system was not thorough and efficient with the funding disparities caused by the funding system of the time (*Board of Education of the City School District of Cincinnati v. Walter*, 1979).

The *DeRolph* case has been revisited several times in Ohio because of the perceived lack of action on the part of the state. The latest ruling stated that Ohio's funding system remains unconstitutional even with attempts to correct its issues (*DeRolph v. State of Ohio*, 2002). Former Ohio Governor Ted Strickland put into place an evidence-based

model of school funding in 2009 that was highly touted at the time, even earning the Frank Newman Award for State Innovation (Education Commission of the States, 2010). The plan was part of Ohio's HB1 and designed to meet at least three policy objectives that resulted from the court orders in the *DeRolph* case (Edlefson, 2010). The three objectives were: (1) develop a school funding system that was based on the educational need of students; (2) eliminate problems caused by the interaction of Ohio's school finance laws and property tax laws, and; (3) reduce the reliance on property taxes (Edlefson, 2010). The first objective to base funding on educational need was difficult to achieve because of Ohio's foundation program of funding schools. The new program did not base state funds solely on a foundational amount but rather on funding organizational units (Edlefson, 2010). The sum to fund all of the components of an organizational unit that included a set number of students and costs for teachers and support staff was labeled the adequacy amount (Edlefson, 2010).

The second policy objective in HB1 was to correct the issue with property tax revenues or, what was referred to in the *DeRolph* case as "phantom revenue." The system in place at the time used a tax reduction factor to adjust for inflation when property values rose. This essentially lowered the effective tax rate and the old school funding formula used updated property tax amounts to calculate the local district's share of the foundation cost (Edlefson, 2010). This combination resulted in local districts not receiving the updated or current property tax revenue they were allocated, and their state subsidy was partially reduced as property values rose (Edlefson, 2010).

The third objective was to create a funding system that was less reliant on local property and income taxes. Differences in local property tax laws still result in varying levels of funds made available to local districts. The state's funding formula does not adequately account for these differences as further disparities may occur. Also, since the 1980s, Ohio has allowed school districts to authorize local income taxes although they must be approved by a majority of voters (Nguyen-Hoang, 2014). However, not every school district was able to get these taxes approved, leading to further disparity among district revenues.

Another failure of the plan was the time frame required for its full implementation. Strickland failed to win reelection and see his plan come to fruition. One study by P.T. Hill suggests that Strickland's plan simply perpetuated the old model of school funding by increasing spending for additional programs and teachers (Hill, 2009). Hill argues that Strickland's plan did not focus on creating adequacy in education for students but aimed to protect jobs in K-12 education (Hill, 2009). If adequacy is the goal, students should be the focus. Ohio's foundation formula was intended to compensate for the differing abilities of local school districts to pay for education, given their respective district's property tax base capacity. As there is a wide variation in per pupil expenditures among Ohio's districts, horizontal equity will not be achieved until the allocation of state aid to school districts is truly equalized for all children and property taxpayers.

A study by Baker in 2009 looked at at-risk groups in Ohio's three largest districts and compared their within-district expenditures by school to the at-risk population within those schools (Baker, 2009). One might assume that it would be logical to see a direct correlation between spending per school and that school's at-risk population. Findings indicate that predicted expenditures based on at-risk population did not always match actual expenditures (Baker, 2009). In this study the urban-core elementary schools are compared to other elementary schools sharing the same labor market by the predicted at-risk measure and trend data are calculated based on predicted costs of providing equal opportunity to achieve average state outcomes from low to high at-risk shares (Baker, 2009). The interesting aspect when looking at the data is why there is not a stronger correlation between predicted spending for desired outcomes and actual spending for all three districts. Cincinnati, for example, had the strongest correlation (CV .09), while Cleveland and Columbus were weaker (CV of .16 and .17 respectively) (Baker, 2009). The same can be said for the data from an Ohio study in 2008 (Public Impact, 2008). One reason for this weaker correlation in Cleveland and Columbus may be the difficulty of implementing funding formulas designed to provide equitable funding within districts. Baker notes that although several states have adopted such funding models, some early adopters are now abandoning the effort because of the complexity of the formulas and the effort required by school-level administrators to administer them (Baker, 2009).

The Baker study also revealed that per-pupil funding in elementary schools within the Columbus Public Schools District compared to the percent of economically disadvantaged students attending each school was not always parallel. These data show that the correlation between the numbers of economically disadvantaged students, which is often a measure used to justify additional need, was not a good indicator for per-pupil funding. Why is the allocation of the funds not distributed in the way one would expect? If equity is the aim for funding districts state wide, should it not also be the aim for funding individual schools within those districts? As mentioned earlier, the reasons for this discrepancy in funding allocation may be the result of overly complex funding formulas within the district or difficulty on the part of district-level or even school-level personnel to implement such formulas. If funding equity within a district is of value to the district, then more simplified formulas or additional training of relevant district employees may be needed.

Under current governor John Kasich the topics of funding and the funding formula have again come to the forefront, with former Governor Strickland's evidence-based model of school funding having fallen by the wayside. One of Governor Kasich's first actions in relation to school funding was to move away from the evidence-based funding model and replace it with a temporary bridge formula for his first biennium (Thomas B. Fordham This modification to the funding formula improved Ohio's rank in Institute, 2011). predicted per-pupil funding from 19 in 2012 to 17 in 2013 (Baker, Farrie, Luhm, & Sciarra, 2016; Baker, Sciarra, & Farrie, 2015). However, Ohio per-pupil funding actually declined slightly from 2012 to 2013 (Baker et al., 2016). This ranking may suggest that Ohio is adequately funding public education or is at least competitive when compared to other states. In 2016, the Education Law Center published the 5th edition of "Is School Funding Fair? A National Report Card," which included an Effort Index (Baker et al, 2016). The index measures each state's local and state funding in relation to its economic productivity or gross state product. The resulting ratio is used as an indicator of the priority a state places on education in created state and local budgets. States with a higher index ratio are deemed to place a greater priority of funding public education. Vermont ranked highest with a ratio of 5.3%. Ohio's index score of 3.8% ranked it eighteenth on the list, with other Rust Belt states of Pennsylvania, Michigan, Wisconsin, Illinois, and Indiana ranking 11th, 17th, 22nd, 29th, and 37th respectively. The question still remains as whether or not Ohio is capable of allocating funds for education equitably.

## IMPLICATIONS FOR THE FUTURE

As Ohio moves forward with funding its schools, one would hope that attention is paid to not only creating a plan that fits in a balanced budget but also one that will provide the equity and adequacy its students deserve. Governor Kasich's latest budget proposal appears to provide for a more equitable distribution of school funds with a new funding formula (Kasich, 2015). The plan provides \$1.2 billion dollars in additional funds over the biennium (Kasich, 2015). Spending for primary and secondary education comprise the second largest expense paid from the general revenue fund in terms of state-only funding (Kasich, 2015). The new funding formula is designed to address disparities in per-pupil funding by creating what Kasich calls Core Opportunity Aid. This aid ensures that every district will have the same amount of resources as if it had \$250,000 in per-pupil valuation. The per-pupil valuation equates to districts receiving a level of aid equal to a district that had a calculated wealth of \$250,000 per student enrolled. Currently only four percent of Ohio's districts have more than a \$250,000 per-pupil property tax base (Kasich, 2015). Although Kasich has chosen to move away from an Evidence-Based Model (EBM) of funding, one important aspect should not be ignored if adequacy in educational funding is truly a priority. An important step in the EBM is to determine the educational components that result in academic success and thus define what constitutes an adequate education (Sullivan & Sobul, 2010). The adequacy amount for each district is determined after assigning an Educational Challenge Factor (ECF). The ECF is calculated using student poverty, community wealth, and the college attainment rate for the district's population (Sullivan & Sobul, 2010). If Kasich wishes to maintain an adequate level of funding to achieve an adequate education these components of the EBM or something similar should continue to be implemented.

What cannot be overlooked is that it will take more than one budget or one change to the funding formula to ensure that Ohio's schools are funded adequately and equitably. This has more to do with reaching an agreed definition of what those two terms mean for Ohio than the net effect of any fiscal changes. More attention may need to be paid to recent legislative changes to both funding and education policy in general. There have been myriad changes made to teacher evaluations, state testing, and overall accountability measures since Kasich took office. The governor also increased funds available for charter schools in an effort to expand school choice (Thomas B. Fordham Institute, 2011). More research is necessary to see how these dollars are used by charter schools and if they provide a better return on the taxpayers' investment. There is an opportunity for more research of the possible implications and expected results of the new budget proposal.

## CONCLUSION

The purpose of this paper is to examine the current environment and recent changes in Ohio school funding and how the state ensures that education funding is both equitable and adequate. This examination reveals that issues of equity and adequacy in Ohio education finance seem to be enduring ones. Ohio has had its fair share of litigation addressing the subjects. Furthermore, given the amount of discussion and litigation involving these issues, Ohio still has not arrived at an amicable solution. This is partly because there are no clear common definitions for either adequacy or equity. In addition, the judicial focus continues to be guided by the belief that equalizing per pupil expenditures promotes equalization of learning opportunities.

Although many definitions have been provided throughout the research and in political commentary, none has been accepted or agreed upon by Ohio's politicians, school districts, or citizens before working towards agreeable solutions. One initial objective for Ohio's decision-makers may be to clearly establish what adequacy and equity mean for Ohio and its taxpayers. Recent data have shown that Ohio's education per-pupil funding is increasing, but the benefits of this increase are still undetermined. Currently, it is difficult to determine what constitutes progress as a result of this increased spending because no benchmark or measure has been set to gauge this progress.

Equitable and adequate funding should remain at the forefront of budgetary planning and education finance in Ohio. The most recent *DeRolph* ruling still holds the state's funding model as unconstitutional (*State v. Lewis*, 2003). The current governor's office may intend to fix this problem, yet without effort on all sides this goal will be difficult to achieve. All parties involved—such as politicians, districts, teachers, and parents—should find an acceptable definition for what an adequate education is and what constitutes equitable treatment in terms of funding by the state. Clear definitions of both adequacy and equity will allow focus to turn toward a solution. However, Ohio's current focus seems to be on accountability and testing. Both may be necessary to gauge school effectiveness, yet the relationship between accountability and testing and establishing appropriate school funding is difficult to determine. Testing and accountability measures for schools and teachers only address the issues at the end of the system or its outputs. These outputs may do little in diagnosing the problems with the inputs.

A new focus, a shift in thinking, and a long-term vision that centers on fixing the ailments of the system and not just treating its symptoms, are needed to create and operationalize any plans to provide an adequate and equitable education for Ohio's young people. Although change is inevitable in politics and policy, some continuity in a plan to address the unconstitutionality of Ohio's funding system may be effective in ensuring adequate and equitable funding for Ohio's children. It appears that recent endeavors to improve the funding model are still too new to satisfactorily measure their effectiveness. As Ohio moves toward its future, more research and examination is necessary to see if recent changes bear the desired results.

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# Leadership and Storytelling: Promoting a Culture of Learning, Positive Change, and Community

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### Abstract

Educational leaders work in increasingly complex, high pressure environments with people who have diverse backgrounds, interests, and goals. To be effective, these leaders must understand the dynamic process of creating and managing culture and change. Stories have the potential to influence culture and to help people connect, develop genuine understanding, and unite around common purposes (Fisher, 1984; Guber, 2011a). This action research study explores the concept of intentionally using storytelling as a leadership strategy and examines the impact and effectiveness of assigning, creating, and sharing stories in graduate classes focused on educational leadership and school improvement.

Keywords: Educational leadership, storytelling, leadership preparation

There is widespread agreement that educational leaders make a difference (Leithwood, Seashore Louis, Anderson, & Wahlstrom, 2004; Waters & Marzano, 2006). However, regardless of title or position, educational leaders cannot merely impose their beliefs and goals on followers. They must navigate complex environments and uncertain conditions over which they often have little control, working amid multiple stakeholders who frequently have different and competing priorities (Duke, 2010). In order to exercise influence, effective educational leaders must strengthen organizational culture, working through and with others to set direction, create a sense of shared purpose, and develop people and the organization (Leithwood & Riehl, 2003). One essential tool for leaders who seek organizational change and improvement is storytelling. (Denning, 2004; Hackman & Johnson, 2013; Smith, 2012).

In the words of famed author Madeline L'Engle (1993), "Stories make us more alive, more human, more courageous, more loving." Stories are part of the fabric of the world, and are a portion of the inescapable human narratives that define and sustain us. With the telling of a story, a "person performs the self" (Goffman, 1959), evoking a sense of personal passion and sharing that links one person to another, inspiring self-reflection and a deeper consideration for the world and the systems that surround us. We share part of ourselves when we tell a story (Denning, 2011), "making others feel the ways in which we are similar to them" (Rancière, 1991, p. 71). Stories can create community and encourage an understanding of each individual within that community (Rappaport, 1993). Barthes and Duisit (1975) state that narrative is simply there "like life itself . . . international, transhistorical, and transcultural" (p. 237) and it "constantly substitutes meaning for the pure and simple facsimile of narrated events" (p. 267). Stories become metaphors for life. Stories have the potential to help people connect, develop genuine understanding, and unite around common purposes (Fisher, 1984; Guber, 2011a). According to Boje (1991), storytelling in organizations is "the preferred sense-making currency of human relationships among internal and external stakeholders. . . . part of an organization-wide information processing network" (p. 106).

Although storytelling is a powerful communication tool for leaders, and is a topic of popular interest, there are not a large number of empirical studies on storytelling and leadership (Auvinen, Lämsä, Sintonen, & Takala, 2013). Within the scholarly literature, much of the academic work related to storytelling has focused on the field of business and management, with less research aimed towards educational leadership. Moreover, although reflective storytelling is sometimes employed to help students and faculty foster a deeper sense of self-understanding (Brill, 2008; Guajardo et. al., 2011; Guerra & Pazey, 2016),
little attention has been given to incorporating storytelling in educational leadership preparation programs explicitly as a leadership tool (Scott & Solyom, 2011). In fact, aspiring educational leaders may be discouraged from using storytelling because a more dialogic communication style is often associated with effective leadership (Gergen & Hersted, 2016; Gigliotti & Dwyer, 2016).

This action research study explores the concept of intentionally using storytelling as an educational leadership strategy and examines the effects of assigning students the task of crafting and sharing stories purposefully designed to clarify an important expectation, build trust, or positively impact an organization's culture. The impetus for this study emerged because of the instructor's personal experience and curiosity. As a classroom teacher, educational administrator, and non-profit leader, the important influence of narrative kept surfacing. As a result, the instructor began researching organizational storytelling and developed a lesson and assignment around the idea of students telling a story with a purpose. The students were members of four graduate classes in educational leadership and school improvement at a university in Texas. One student, because of her own background in the arts, knowledge and regard for pedagogy, and experience with the assignment, took a particular interest in the topic and became a co-author of the study with the instructor. The authors were interested in discovering if, more than six months after the class, students reported: 1) increased awareness of others using storytelling as a leadership strategy; 2) the assignment had increased their storytelling skills and confidence; 3) they had used or planned to use storytelling as a strategy in the future; and 4) they thought the stories they told had the intended effect.

## ORGANIZATIONAL CULTURE, LEADERSHIP, AND STORIES

Educational leaders work in complex environments with people who have diverse backgrounds, interests, and goals. To be effective, these leaders must understand the dynamic process of creating and managing culture, which, according to Schein (2010), is the essence of leadership. The concept of culture has different meanings and definitions in various contexts. According to Schneider, Ehrhart, and Macey (2013), "organizational culture may be defined as the shared basic assumptions, values and beliefs that characterize a setting and are . . . communicated by the myths and stories people tell" (p. 362). Giroux (2004) suggests, "Rather than being viewed as a static force, the substance of culture and everyday life—knowledge, goods, social practices, and contexts—repeatedly mutates and is subject to ongoing changes and interpretations" (p. 60). As the contributing members of that culture alter the collective knowledge, individuals can reach a better understanding of the community and their own unique selves (Stets & Burke, 2003; Stryker, 2002). The dynamic flux associated with any culture or community can often best be understood through stories that become the form of discourse we use to create culture, and can be used as tools to promote change within that culture (Rappaport, 1993).

Educational leaders are often asked to quickly initiate and implement changes that will result in improved organizational performance. Sometimes embedded within the directive and desire for improved results is the expectation to change an organization's culture. Schein (2010) argues that leadership and culture are two sides of the same coin. Understanding an organization's culture is critical for leaders because of its significant impact on individual and organizational performance and to make sure their efforts are effective and helpful.

Educational leaders, as a result of their roles, often function as cultural gatekeepers, acting as mediators of cultural norms and helping to codify language that surrounds change initiatives and organizational expectations. Fullan, Cuttress and Kilcher (2009) describe developing cultures for learning and evaluation as two of eight drivers critical for bringing about effective and lasting educational system change. According to Bolman and Deal (2013), in order for leaders to have the best chance of success, they must view organizations through multiple frames, including the symbolic and cultural elements that are inherent in any organization. In addition, Schein (2010) describes various methods leaders use to embed and transmit culture. Communicating stories about important ideas, events and people is one of these mechanisms.

In a study focusing on wellness education in American Indian communities in California, Hodge, Pasqua, Marquez, and Geishirt-Cantrell (2002) highlight how important it is that leaders understand how to use culturally responsive stories as tools for educational improvement and organizational transformation. In her book on organizational storytelling for librarians, Marek (2011) describes how stories can be used for effective leadership. Educational leaders can use storytelling to humanize their position of authority and to connect to others in a genuine way (Guber, 2011a; Kuran, 2013; Mládková, 2013). These ideas encapsulate some of the discourse surrounding current trends in organizational leadership. In order for leaders to transform, they must be willing and able to facilitate rather than dictate (Fullan, 2011; Harris, 2002). According to Boal and Schultz (2007), strategic leaders working in complex organizations can foster organizational learning and adaptation through dialogue and storytelling by constructing shared meaning. Similarly, McCarthy (2008) notes that storytelling can reinforce an organization's evolving value system as employees "make their way through their organizational challenges" (p. 185).

Other researchers and writers have also explored the use of storytelling as a managerial technique to bring about change initiatives (Baker & Boyle, 2009; Hsu, 2008; Marshall & Adamic, 2010). Interestingly, the majority of the literature surrounding the topic of using purposeful storytelling in leadership comes out of the business paradigm (Marshall & Adamic, 2010). Denning (2004), a prolific author on the topic, posits, "the age-old practice of storytelling is one of the most effective tools leaders can use" (p. 122). Similarly, Guber (2011b) states, "Magic happens when you narrate otherwise soulless data into emotional nodes that render an experience to an audience . . . that makes the information inside the story memorable, resonant and actionable" (p. 4).

Leadership is, according to Denning (2004), "above all, about getting people to change. To achieve that goal, you need to communicate the sometimes complex nature of the changes required and inspire an often skeptical organization to enthusiastically carry them out" (p. 126). According to Denning, stories do just this. He proposes that by using stories to frame the discourse around change initiatives in organizations, a leader can inspire those within the organization to change, especially if the leader is sensitive to the purposeful and timely use of these stories. Denning (2004) catalogs a variety of narrative patterns that leaders may use to achieve different objectives in different contexts. He describes seven different storytelling aims: sparking action, communicating who you are, transmitting values, fostering collaboration, taming the grapevine, sharing knowledge, and leading people into the future. For example, a story for the purpose of leading people into the future might include a historical allegory of perseverance or a metaphor in order to create an emotional appeal (Simmons, 2016). A story focused on communicating about the leader might include an engaging personal anecdote that reveals something meaningful about the leader, hopefully creating a positive connection between the leader and the listener (Denning, 2004). The "ability to tell the right story at the right time is emerging as an essential leadership skill" (Denning, 2014, p. 129).

Similarly, Ganz (2010) describes storytelling, or what he calls public narrative, as one of four key leadership practices for leading change. He argues that we analyze the world cognitively, looking for patterns and trends, and that we also map the world affectively, "coding experience, objects, and symbols as good for us or bad for us" (p. 8). Ganz (2010) identifies three types of public narratives: a story of self, which communicates the personal values that call one to action; a story of us, which communicates shared values; and a story of now, which communicates an urgent challenge that demands immediate action. Goodman (2010) also writes about the importance of storytelling in organizations, with a special emphasis on the non-profit sector. Goodman argues that individual stories are often more convincing than sets of data and are underutilized as tools for creating a cohesive culture internally as well as obtaining external support.

In addition to the perspectives provided by Denning and Ganz, there are researchers who examine narrative through an ethical lens and point out that the current managerial focus on culture and storytelling can serve as a form of manipulation and control used to gain power and influence (Auvinen et al., 2013). Auvinen et al. (2013) describe four types of manipulation in storytelling leadership: humorous, pseudo-participative, seductive, and pseudo-empathetic. They reject the distinction between power and influence, attempting to integrate the concepts. They also point out that since leadership is a socially constructed relationship, manipulation can occur in either direction. Takala and Auvinen (2014) state, "stories are information-rich entities for organizational values and beliefs, and contain moral positions" (p. 4). They argue that since the narrator has the power to shape discourse and our shared social reality, we need to examine the ethical dimensions of leadership stories. Similarly, Michel Foucault (1971) argues that "every educational system is a political means of maintaining or of modifying the appropriation of discourse, with the knowledge and the powers it carries with it" (p. 19).

# THEORETICAL FRAMEWORK: COMMUNICATIVE ACTION, UNCERTAINTY REDUCTION AND NARRATIVE PARADIGM

Three theoretical frameworks of human communication provide the foundation for this study. The brief descriptions of these complex theories provided below are necessarily simplified and narrowed due to the purpose and scope of the study. In his theory of communicative action, Habermas (1987) proposes that language plays the role of coordinating goal-directed activities and transmitting culturally stored knowledge, as well as a medium of socialization. Communication is itself a form action, not just a channel for conveying facts. The genuine communication associated with what he characterized as the life-world of human beings creates a dialogue of communicative action where members of any given society work in coordination to derive mutual understanding and meaning. Groups maintain their identities to the extent that their members' share narratives that overlap sufficiently, securing continuity of tradition and coherence of knowledge. In addition, according to Habermas (1987), narrative not only serves as a way to reach mutual understanding when trying to coordinate action, but also plays a role in developing personal identities and has an important function "in the self-understanding of persons" (p. 136). Uncertainty Reduction Theory (Berger & Calabrese, 1975) embodies the notion that in order for people to develop a relationship with another person they must gain information about the other person, develop trust, and thereby reduce both cognitive and behavioral uncertainty between the two parties. According to the axioms and associated theorems of Uncertainty Reduction Theory, appropriate self-disclosure can decrease uncertainty and increase communication and liking. Thus, sharing relevant and appropriate personal and professional stories may result in improved positive communication between and among leaders, staff, and stakeholders.

This paper is also framed by Fisher's (1984) narrative paradigm. Fisher suggests that we shift from a rational world paradigm, which assumes people are logical and make decisions based on evidence, to a narrative paradigm, which maintains that all humans are essentially storytellers and story listeners. Because we are narrative beings, the world is a set of stories from which we choose, and all communication is a form of storytelling. Each individual may interpret a narrative's meaning and assess its value differently. The basis for determining the meaning, validity, reason, rationality, and truth of communication is based on people's inherent awareness of a narrative's coherence and fidelity in the context of history, culture, biography, and character (Fisher, 1984). Thus, from a narrative paradigm perspective, people can be more persuaded by a good story than a logical argument. These three interrelated frames taken together highlight the essential role that narrative plays in understanding self and others, as well as in developing and maintaining relationships, and thus its importance to leadership.

#### **METHODS**

Kurt Lewin (1946) originated the idea of action research as a way to systematically work in the field to "solve a problem or answer an important question about professional practice" (Willis & Edwards, 2014, p. 10). According to Ferrance (2000), action research "is a process in which participants examine their own educational practice systematically and carefully, using the techniques of research" (p. 1). Depending on the particular circumstance, action research usually involves problem identification, data collection and analysis, data interpretation, action, and reflection (Creswell, 2012; Ferrance, 2000). For this project, the authors were interested in examining the impact of a classroom assignment related to leadership and storytelling.

Seventy-nine graduate students in four educational leadership courses were given an assignment to craft and present a three- to five-minute story designed to reinforce a change effort, support an educational value, clarify an important expectation, or positively shape an

organization's culture. In preparation for the assignment, students read the article "Telling Tales" by Stephen Denning (2004), discussing how different story types can be used for different purposes. Students were asked to think about and select a realistic objective (e.g., sharing knowledge, sparking action, or communicating who you are) and context (e.g., a faculty meeting, a PTA gathering, or a one-on-one conference with a colleague) for their story. Students wrote their stories, recorded them, and orally presented them in person in front of the class. They also wrote a brief reflection describing the process used to develop the story, what they learned about themselves and their organizations, and how they might use the stories, their insights, and the process as educational leaders.

As an introduction to the storytelling assignment, students engaged in a sixty-minute lesson about storytelling that included a short lecture by the instructor focused on the power and importance of effective storytelling, a model narrative, and a small group activity. During the small group activity, students were asked to spend three minutes thinking about a time when they really wanted something and prepare to tell the story of what happened. Each student then had two minutes to tell their small group their story. After the small group activity, the whole class discussed what the stories had in common, what stood out, and other reflections about the activity. Expectations regarding the storytelling assignment were clarified and questions were answered. Students were instructed to thoughtfully choose the kind of story they wanted to tell based on the amount of time available (threeto five-minutes), context, audience, and purpose. Students were given wide latitude in terms of the type and form of the stories they could tell. For example, students were free to share a personal narrative, a parable, or a metaphorical tale. The stories students created could be fictional or based on actual events, as long as they were not deceptive in nature. The following week, students were given approximately 20 minutes in class to work in pairs or small groups to share ideas with each other about the storytelling assignment. As a whole class, students then discussed common themes that emerged from their small group conversations. Students were given several weeks to develop their stories at home before presenting them to the class.

Although assessing the students' intended outcomes of the stories was not a major component of this study, after each story was delivered, the class provided feedback to the teller, including perceived effectiveness and suggestions for how the story might be used or modified for various situations. Because each class member interpreted the stories differently, these conversations provided fascinating insights into the unique perspectives of individual students. Approximately six months after the assignment, a questionnaire was distributed to the seventy-nine students who were in the four graduate classes. Prior to distribution, the survey was field tested with two students and revised slightly based upon their comments and suggestions. The questionnaire was administered online for two of the classes and in person for two of the classes. Participation in the survey was completely voluntary and confidential. Students were informed that the survey was part of an action research study examining the effects of an assignment they had engaged in during a previous class. The questionnaire consisted of five general demographic questions, nine structured questions using a Likert scale, and two open-ended questions. The Likert questions were aligned closely with the research questions. They centered on students' perceptions of the assignment and if it had influenced their awareness and use of storytelling.

Demographic and Likert scale questions were analyzed using descriptive statistics in order to describe the participant population and report average responses to structured questions. Frequency of responses were calculated for demographic questions and the means for responses were calculated for structured Likert scale questions. Because of the relatively small sample size and purpose of the study, a more advanced, inferential analysis of the quantitative data was not conducted. Responses to open-ended questions were analyzed for patterns and common themes using open coding (Glesne, 2010), as well as for identifying connections in the context of the research questions, theoretical frameworks, leadership, and school improvement (Maxwell, 2013).

### RESULTS

Forty-eight of seventy-nine students (61%) in four graduate classes completed the questionnaire. Respondent characteristics are shown in Table 1. Fifty-six percent of the respondents were female and 44% were male. Fifty-four percent of those completing the questionnaire identified as Caucasian/White, 29% Hispanic, 6% Black, 6% Multiracial or other, and 4% preferred not to answer. Respondents varied in age from under 30 to over 50, with 75% being between the ages of 30-59. More than two-thirds of the respondents (71%) worked in a K-12 setting. Forty percent of the respondents were educational administrators, 33% were teachers or counselors, 15% were graduate research assistants, and 13% served in various other roles in education. The characteristics of the respondents generally reflected those of all the students in the four classes.

		Frequency	
Student Characteristics		n=48	Percentage
SEX			
	Male	21	44%
	Female	27	56%
RACE/ETHNICITY			
	White	26	54%
	Hispanic	14	29%
	Black	3	6%
	Multiracial/Other	3	6%
	Prefer not to answer	2	4%
AGE			
	Under 30	5	10%
	30-39	22	46%
	40-49	14	29%
	50 or over	6	13%
	Prefer not to answer	1	2%
WORK SETTING			
	Elementary School	13	27%
	Secondary School	10	21%
	Central Office	11	23%
	College/University	7	15%
	State Agency	3	6%
	Non-profit/Other	4	8%
ROLE			
	Administrator		
	Counselor	10	1001
	Graduate Research	19	40%
	Assistant	2	4%
	Teacher/Instructional	7	15%
	Support	14	29%
	Other	6	13%

Table 1. Characteristics of Questionnaire Respondents

Note: Total percentage may not equal 100 due to rounding.

Responses to the structured questions regarding the storytelling assignment are shown in Table 2. Overall, results indicated the assignment was remembered, liked, thought about, and had increased students' awareness, skills, and confidence. In addition, most students reported that they planned to purposefully use storytelling as a leadership strategy in the future.

On a scale from 1 to 4, with 1 being "not at all" and 4 being "a great deal," more than eighty percent of respondents reported that they remembered the assignment a great deal, with an average response of 3.8. Sixty-six percent of the respondents reported that they liked the storytelling assignment a great deal, with an average response of 3.7. Fiftyone percent of those responding to the questionnaire reported being a great deal more aware of educational leaders using storytelling as a leadership strategy, with an average response of 3.3. Students completing the questionnaire reported both increased skills, with an average response of 3.2, and increased confidence, with an average response of 3.0, in telling stories.

Question	Mean
Do you remember the assignment in which you wrote and shared a 3-5	
minute story with the class?	3.8
Did you like the storytelling assignment?	3.7
Since completing the storytelling assignment, are you more aware of educational leaders using storytelling as a leadership strategy?	3.3
Did the storytelling assignment increase your skills in telling stories with a purpose?	3.2
Did the storytelling assignment increase your confidence in telling stories with a purpose?	3.0
If you have used storytelling as a leadership strategy, do you think it had the effect you intended?	3.0
Do you plan to intentionally incorporate storytelling as a leadership strategy in the future?	3.4

Table 2. Student Responses to Structured Questions About Storytelling Assignment

Note: The response scale ranged from 1 "Not at all" to 4 "A great deal."

The results of two additional questions are reported in Table 3. When asked if they had thought about the storytelling assignment since completing the course, a majority reported having thought about the assignment more than three times. Twenty-nine percent reported thinking about the assignment more than five times. Slightly less than half of the

respondents reported having intentionally used storytelling as a leadership strategy more than three times since the completion of the class, although almost all respondents planned to do so in the future. Most students who had told stories as a leadership strategy believed it had the intended effect, with an average response of 3.0.

	Response Options and Frequencies (n=48)			
Question	Not at all	1-2 times	3-5 times	More than 5 times
Have you thought about the storytelling assignment since completing the course?	2	17	15	13
Since completing the course, have you intentionally used storytelling as a leadership strategy?	4	22	15	7

Table 3. Student Responses to Additional Questions About Storytelling Assignment

Note: The frequencies may not add up to the total "n" because every question was not always answered.

Although average responses were calculated by sex, age, ethnicity, job role, and job setting, the number of cases in each category were relatively small and few clear patterns emerged from the data. It did appear that females were more likely than males to report remembering the assignment, being aware of leaders telling stories, and that the assignment increased their confidence and skills in telling stories with a purpose. It also appeared that respondents who worked in elementary schools had higher average responses on every question than those who worked in secondary schools. In addition to the structured responses, students were asked to reflect on the assignment and describe what difference it made in their thinking or practice, and what else they would like to share about the activity.

#### Student Stories, Reflections, and Open-Ended Responses

The narratives students shared ranged from being highly personal and autobiographical to the recounting of stories heard previously that had significant meaning. Students chose different audiences, settings, and purposes for their stories. Most students intended for their stories to communicate important things that they cared about deeply. Several students shared information about themselves they had never shared outside of their families. For example, one student described being placed in special education classes at an early age and isolated from his peers until a caring teacher correctly identified his learning difference and helped him to recognize and reach his full potential. Another student recounted her own background—poor, hungry, English language learner, parents with only a 4<sup>th</sup> grade education—and how she was made fun of in school because "she couldn't speak English the right way." Now she is "proud to work alongside the third grade teacher who gave me a needed boost of confidence, reassurance, and an extra handful of goldfish during snack time." A third student shared a story about a young child she worked with during her first year of teaching. In the story, she disclosed how her expectations of the child were negatively altered as a result of her preconceived notions and stereotypes. Her subsequent experiences with the child and his family "opened my eyes and changed my beliefs." She now shares this story with young teachers she mentors, revealing her own humanity, and emphasizing that potential is not distributed according to zip code or income. A doctoral student wrote an inspiring story about the humorous and touching interactions he had with a fifth grader with special needs when he was a teacher. He submitted the story to a journal and it was accepted and published.

The ideas of "increased awareness" and "personal connection" frequently appeared in students' reflections and open-ended responses. These concepts extended across students' descriptions of their own experience of the lesson as well as their developing view of leadership and storytelling. "The assignment helped to focus my thoughts," shared one participant. "It helped me frame situations differently than I usually do," explained another. Similarly, a third student reflected, "I used a different thought process to produce the story than I would have writing a research paper. It gave me a chance to connect the desired outcome with my intent of telling the story." "After the assignment," a fourth student noted, "I started to notice and appreciate how powerful storytelling can be as a school and community leader. I now identify a lot of storytelling in the articles I read and am much more conscious of my own storytelling."

In their comments, several participants also discussed the personal nature of the assignment and its effect. For example, one student explained, "I always thought I was a pretty natural storyteller so this assignment was great practice and encouraged me to think more deeply about storytelling strategies and to consider new audiences and venues." Another remarked, "Storytelling is much more than cold hard facts and figures. I now understand the significance of connecting with my intended audience." A third student observed that storytelling helped her to build relationships, "providing an opportunity for others to connect to me in various ways because people from all walks of life share experiences."

## DISCUSSION

Several themes emerged from students' responses to the structured questions, openended responses, and reflections. First, most of the students who participated in the study indicated that the storytelling assignment constituted new and worthwhile learning that had increased their awareness, skills, and confidence. Although most students "really liked the assignment and actually think about it often," some expressed that it was difficult for them to come up with and deliver a story. However, when provided with "more specific prompts, as well as permission to be creative," students were able to hone in on narratives that were meaningful. "Prior to this assignment," reflected one participant, "I had never been guided about how to craft a story. Now I am able organize my thoughts and align my ideas with real world examples and occurrences." As is true in most classrooms, students appreciated "having the opportunity and freedom to choose the story we wanted to tell." As one student said, "Most of the information we present is in APA format, this was an opportunity to share in a more creative manner." "Presenting the story in front of others was challenging and took me out of my comfort zone," divulged one student. "I was nervous and lacked confidence, but I got over it."

Second, almost all of the students indicated that they planned to apply what they had learned about storytelling in the future, and many revealed that they had already repeated their stories at work, with what they perceived as positive outcomes. One student wrote, "Even though I was nervous during my storytelling, I thought it went well and it gave me the confidence to try it at work." Another student commented, "I have purposely planned and used it in at least three meetings. I can tell a difference in how teachers respond when I use storytelling." A third student remarked that she shared the assignment with her grade level team, explaining to her teammates how she used storytelling as part of a math lesson. She said her team members began to use the strategy in their classrooms with favorable results. Now, the use of stories is integrated into their team lesson planning.

Third, the results of this study affirm that the theoretical frameworks of communicative action (Habermas, 1987), Uncertainty Reduction Theory (Berger & Calabrese, 1975), and narrative paradigm (Fisher, 1984) provide useful conceptual models for understanding how and why narratives are so powerful as a leadership tool. For example, Habermas (1987) contends that narratives serve to help groups and individuals develop and maintain their identities. These ideas are supported by the many students who commented that "the experience brought our cohort closer together" and "connected us as a

community," as well as the participant who shared that telling stories "enables me to create a greater class community with my kids." Several students also noted that the "reflection portion of the lesson was important. Sharing stories is part of the historical and labeled self we bring into discourse . . . allowing us to evaluate and make meaning with greater understanding and insight."

A number of students reflected on the assignment in relation to uncertainty reduction theory (Berger & Calabrese, 1975). "Stories change how leaders are viewed and make them more accessible," explained one student. "They give people an idea of who you are, where you are from, and where you intend to go. You can see past their title and their physical appearance into something much deeper," shared another. Student comments also connected leadership and storytelling to narrative paradigm (Fisher, 1984). "Each story that was told I found myself able to relate to in one way or another," declared one participant. "Storytelling can evoke emotions. Emotions have the capacity to endure and are not lost over time," another student observed. Several students mentioned that individual students interpreted each story they heard from their classmates in different ways, creating their own unique meaning from the experience. Interestingly, with no knowledge of the theoretical frameworks of this study, participants nevertheless described how communicating through stories had increased understanding, built relationships and community, and sparked action.

Finally, the results of the study provided useful information about the assignment itself. Students overwhelmingly liked the assignment, thought it was effective, and recommended the instructor "keep using it." Two students suggested the instructor "provide more examples of stories" and that the activity be "incorporated into difference phases of the course." Two other students shared that recording the story was particularly challenging. Many students expressed appreciation for the opportunity to discuss the assignment with their peers. Although some students described a "renewed value placed on planning and practice", a few commented that "rehearsing stories in advance created anxiety and made the process feel inauthentic." As a result of the feedback, the assignment will be continued, as will opportunities for discussion and practice. More examples of stories will be provided, possibly aligned to different course topics. In addition, the instructor will consider developing a portfolio of stories that he can share with students as a model. Additional feedback from students will be collected in future semesters in order to improve the lesson over time.

## CONCLUSION

There is general agreement that leadership, capacity building, and communication at multiple levels are essential to securing sustainable school improvement over time (Harris, 2002). One key strategy for building capacity and transmitting culture is storytelling. During faculty meetings, professional development workshops, community gatherings, and individual conferences, teachers, principals, superintendents, and other educational leaders can purposefully integrate stories in order to set a desired tone, clarify expectations, and communicate important ideas. The results of this study suggest that graduate students of educational leadership, in order to use stories effectively, may benefit from explicit instruction that would increase their knowledge, skills, and confidence. In addition, educational leadership preparation programs and individual instructors might consider incorporating intentional storytelling as part of their curriculum and instruction. Over time, each student could identify, develop, and practice a repertoire of stories that they may eventually adjust and use to achieve different goals in a variety of situations.

This study also raises several questions and ideas for additional research. For example, how often and under what circumstances do current educational leaders develop and use narratives to promote a culture of learning and positive change? What strategies do they use? Several students noted with irony the stark contrast between telling purposeful stories and the current focus in their districts on analyzing numerical test scores. As one student shared, this activity would be an "excellent professional development session for principals and faculty."

According to McCarthy (2008), "the role that stories play in the change process is a particularly compelling and timely line of research" (p. 166). Another fascinating question for researchers to investigate is whether intentional storytelling by educational leaders is associated with particular organizational factors or outcomes, such as student achievement, school climate, or employee turnover? Given its importance in learning, building relationships, and organizational development, storytelling in educational leadership deserves additional attention in both preparation programs and research. As Bolman and Deal (2013) note, "Effective organizations are full of good stories" (p. 254). This study highlights the positive impact that teaching purposeful storytelling can have on emerging educational leaders and potentially upon the people and organizations they serve.

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