

Empowering Teacher Leaders

The Impact of Graduate Programs
Connecting Mind, Brain, and Education Research
to Teacher Leadership



Prepared for



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EXECUTIVE SUMMARY

This study was implemented to document how graduate degree programs based on mind, brain, and education research provide teachers with knowledge, skills, and practices consistent with national and state standards for teacher leadership.

Study Overview

This study was implemented to document how graduate degree programs based on mind, brain, and education research develop teachers as leaders, including providing them with the knowledge, skills, and practices consistent with the Model Teacher Leader Standards, or MTLs (Teacher Leadership Exploratory Consortium, 2010) and, as a state example, the State of Georgia Teacher Leadership Standards (Georgia Professional Standards, 2011). Georgia was chosen because (1) the state has developed guidelines in this relatively new field, and (2) many Georgia teachers aspiring to both formal and informal leadership positions have chosen to learn through these programs. The study specifically measures teachers' formal and informal leadership activities as well as teachers' assessments of how well the programs prepared them to meet the national and state teacher leadership standards.

Key Questions

The study addresses the following key questions:

1. How engaged are program graduates in teacher leadership activities? In which teacher leadership activities are they most involved?
2. Beyond formally defined teacher leadership activities, in what ways are they acting as teacher leaders and helping to improve teaching and learning in their schools?
3. How is their practice consistent with teacher leadership standards?
4. How well did the program prepare them for service as teacher leaders?

More than 9 in 10 respondents indicated that they strongly credited their graduate education with their development as teacher leaders.

Key Findings

1. Completion of the graduate degree program prepared teachers to successfully assume teacher leadership roles; 91% of respondents indicated that they strongly credited their graduate education with their development as teacher leaders.
2. Program graduates are teacher leaders and take responsibility for improving teaching and learning in their schools:
 - More than 93% are involved in at least one teacher leadership activity.
 - More than 70% are involved in five or more teacher leadership activities.
3. In addition to specifically defined teacher leadership activities, they are acting as teacher leaders in many ways, including:
 - Staying current with research regarding best practices and features of effective professional learning (89%).
 - Teaching and modeling changes in teacher practices that are necessary for improvement in student learning (80%).
 - Modeling and articulating exemplary instructional strategies based on current research (80%).
 - Working with others to create an environment that encourages needed change using a research-based change model (72%).
4. Program graduates approach their work as teacher leaders in a way that is consistent with national (MTLS) and Georgia teacher leadership standards. They:
 - Design and implement ongoing systematic job-embedded professional development to improve schools based on current understandings of how learning occurs (73%). (MTLS Domain III, GA 1)
 - Develop and foster a collaborative culture of schooling based on principles of lifelong adult learning (89%). (MTLS Domain I, GA 2)
 - Collaborate with colleagues around a vision of 21st century schooling based on the aligning of curriculum, instruction,

The survey found that more than 93% of teachers earning graduate degrees in Brain-Based Teaching are involved in at least one teacher leadership activity, and more than 70% are involved in five or more teacher leadership activities.

and assessment grounded in cutting-edge research on teaching and learning (89%). (MTLS Domain IV, GA 3)

- Understand and model best pedagogical practices in education and serve as mentors and coaches for other educators (81%). (GA 4)
- Work with others to design and implement assessment practices and data analysis that results in improving learning and teaching (76%). (MTLS Domain V, GA 5)
- Synthesize and use research to improve teaching practice that results in greater student learning (71%). (MTLS Domain II, GA 6)
- Improve outreach and positive collaboration with stakeholders in the learning community—families, community members and leaders, and others—in order to improve student learning and guide necessary change (89%). (MTLS Domain VI, GA 7)

INTRODUCTION

The graduate programs with a major in Brain-Based Teaching aim to equip teacher leaders with knowledge about how breakthroughs in the domains of student learning, cognition, brain, and teacher leadership can be translated into best practices in the classroom and beyond.

About the Programs

Approximately 3,000 educators have graduated from the programs with a major in Brain-Based Teaching offered through the Abraham S. Fischler School of Education at Nova Southeastern University, which is accredited by the National Council for Accreditation of Teacher Education (NCATE) as well as regionally through the Southern Association of Colleges and Schools (SACS). Three degrees are offered:

- M.S. with a major in Brain-Based Teaching (concentration in Teaching and Learning)
- M.S. with a major in Brain-Based Teaching (concentration in Reading and Literacy)
- Ed.S. with a major in Brain-Based Teaching (concentration in Instructional Leadership)

Though each program has a different emphasis with regard to teacher leadership, all three degrees provide training for teacher leaders.

The programs focus on equipping teacher leaders with knowledge about how breakthroughs in the domains of student learning, cognition, brain, and teacher leadership can be translated into best practices in the classroom and beyond. To develop teacher leadership, the programs guide teachers through specific authentic, performance-based projects and assessments to build knowledge and skills needed to take classroom best practices to a wider audience and enhance learning across the school and district. In particular, findings suggest that graduates believe knowledge and skills learned have made them more effective in the classroom. They state that they have more knowledge and skills about how students learn and how to teach more effectively. Furthermore, they are likely to have learned how to assist other teachers through mentoring and professional development, as well as how to

This focus on teaching, learning, and teacher leadership has a deep foundation in specific projects with teachers in Florida and Oklahoma that span several decades.

conduct parent workshops so that parents are empowered to help their children learn at home (Harman & Germuth, 2012).

Background

The trans-disciplinary field of mind, brain, and education research is starting to inform educational practice, but few degree programs have used this knowledge to create an integrated conceptual framework and course of study. These particular brain-based graduate programs with a focus on teaching, learning, and teacher leadership have a deep foundation in specific projects that span several decades. For example, at the state level in 1999–2002, the team worked with teacher leaders across Florida on the Department of Education's dropout prevention initiative. The purpose of the Scholarships for Teachers in Action Research (STAR) project was for teacher leaders across the state to participate in the following: (1) a weeklong mind, brain, and education workshop, (2) four 2-day follow-up workshops, and (3) site-based, job-embedded coaching sessions at their schools. Within the same time span, this work was the focus of an Annenberg Challenge Grant for in-service teacher leaders. At the district level, Donna Wilson's early work with teacher leaders across a 22-school district in Oklahoma resulted in a paradigm change in service delivery for students aimed at prevention of learning difficulties through early intervention at all levels of schooling.

Additionally, the mind, brain, and education approach to instruction and teacher leadership has been featured at various national and state events, including the National Board for Professional Teaching Standards (NBPTS) conferences over the past 10 years. Many teacher leaders have studied with the program, teach in the programs today, and are featured in program texts. Work in the teacher leadership area is also informed by work by Mary Catherine Buday with National Board Certified Teachers (2001), when she was with the NBPTS and served as the director of teacher leadership initiatives through early 2002.

Related Studies on the Brain-Based Teaching Programs

Two other studies (Germuth, 2011; Harman & Germuth, 2012) point to the impact of these graduate programs on aspects

Crowther, Kaagen, Ferguson, and Hann (2002) describe teacher leadership as “action that transforms teaching and learning in a school, that ties school and community together on behalf of learning, and that advances social sustainability and quality of life for a community.”

related to teacher leadership, including learning with colleagues and working with others to change teachers’ knowledge, skills, and practices. In the first study, graduates reported that they had improved their teaching practice, had improved their ability to reach and teach more students more often, had improved their understanding and application of knowledge about how students learn, were becoming more metacognitive about teaching, and were learning with colleagues and working as teacher leaders. The second study, which used a case study approach (Stake, 1995; Yin, 1993) informed by Michael Quinn Patton’s (1990) work on qualitative sampling and Sarah Lawrence Lightfoot’s work on portraiture methodology (1997), included in-depth interviews with seven current or former students and one parent coordinator. An emerging theme from the analysis of interviews included how current and past students were using the information, skills, and practices they learned in their graduate programs to support other teachers’ skill development and better engage parents and the community.

Teacher Leadership Literature Review

Since the late 1990s there has been a call to action to teachers to take responsibility for improving teaching and learning by engaging in their work not just as teachers, but as teacher leaders (Danielson, 2007; Day & Harris, 2003; Harrison & Killion, 2007). While some authors have identified formal roles for teachers that increase their authority in the school, such as serving as department chairs or as elected members of educational organizations (Berry, Daughtrey, & Wieder, 2010), others have championed informal roles and processes by which teachers can exert their influence to change classroom practices, school culture, community relationships, and policy decisions (Childs-Bowen, Mollen, & Scrivner, 2000; Collinson, 2004), including engaging in professional learning communities, dialogue, and research.

Given these varying ideas about how teacher leadership is achieved, definitions of teacher leadership vary greatly. As one researcher noted, “We believe teachers are leaders when they function in professional learning communities to affect student learning; contribute to school improvement; inspire excellence in practice; and empower stakeholders to participate in educational improvement” (Childs-Bowen et al., 2000, p. 28). Crowther, Kaagen, Ferguson, and Hann (2002) describe teacher

Teachers who earn these graduate degrees report that the programs provided important research and strategies that enabled them to reach the twin targets of teacher leadership: (1) becoming a better teaching professional and (2) taking classroom expertise into the broader community of school and beyond.

leadership as "action that transforms teaching and learning in a school, that ties school and community together on behalf of learning, and that advances social sustainability and quality of life for a community" (p. 17). Furthermore, they state that "teacher leadership facilitates principled action to achieve whole school success. It applies the distinctive power of teaching to shape meaning for children, youth, and adults. And it contributes to long-term, enhanced quality of community life" (p. 10). Lambert (2002) argues that teacher leaders participate as mutual learners and leaders, participate in creating a shared vision by reflecting on their own and others' visions for school outcomes, use inquiry-based information to guide practice, consistently reflect on their practice and goals, and view student achievement above and beyond test scores to include understanding and synthesis. York-Barr and Duke (2004) define teacher leadership as the "process by which teachers, individually or collectively, influence their colleagues, principals, and other members of school communities to improve teaching and learning practices with the aim of increased student learning and achievement" (pp. 287–288).

Regardless of what definition of teacher leader or leadership most resonates with one, underlying these definitions is the sense of responsibility that teachers have to be creative change agents in their classrooms, schools, and communities—whether at the local, state, or national levels.

Connecting Graduate Programs to Current Teacher Leadership Standards

Research, knowledge, and practical theory that focus on further developing teachers' adaptive expertise form the core of these graduate programs based on mind, brain, and education research. Adaptive expertise, called the "gold standard of teaching," is what defines professional teachers who develop their expertise as teachers through ongoing study of learning and teaching (Bransford, Brown, & Cocking, 2000). Having been steeped in cutting-edge knowledge and experiences that assist them to become more confident adaptive experts, the logical next step for many program graduates is to confidently assume a formal or informal role as a teacher leader beyond their classroom. In fact, teachers who earn these graduate degrees report that the programs provided important research and strategies that enabled them to reach the twin targets of

teacher leadership: (1) becoming a better teaching professional and (2) taking classroom expertise into the broader community of school and beyond.

To reiterate, national standards in teacher leadership, as well as those emerging from states such as Georgia, for example, generally have the following foci:

1. Designing and implementing ongoing systematic job-embedded professional development to improve schools based on current understandings of how learning occurs (TLMS III, GA 1),
2. Developing and fostering a collaborative culture of schooling based upon principles of lifelong adult learning (TLMS I, GA 2),
3. Collaborating with colleagues around a vision of 21st century schooling based on the aligning of curriculum, instruction, and assessment grounded in cutting edge research on teaching and learning (TLMS IV, GA 3),
4. Understanding and modeling best pedagogical practices in education and serving as a mentor and coach for other educators (GA 4),
5. Working with others to design and implement assessment practices and data analysis that results in improving learning and teaching (TLMS V, GA 5),
6. Locating and using research to improve teaching practice that results in greater student learning (TLMS II, GA 6),
7. Improving outreach and positive collaboration with stakeholders in the learning community—families, community members and leaders, and others—in order to improve student learning and guide necessary change (TLMS VI, GA 7).

Additionally, the national Teacher Leader Model Standards call for teacher leaders who advocate for student learning and the profession through an understanding of how educational policy is made at the local, state, and national levels and through knowledge of the roles of school leaders, boards of education, legislators, and other stakeholders in formulating these policies. Although there is anecdotal evidence that some program graduates are serving as teacher leaders in this way, this study did not examine this type of teacher leadership activity.

SURVEY AND METHODOLOGY

Survey

The *Empowering Teacher Leaders Survey* is based on findings from an extensive literature search and review as well as national and state teacher leadership standards. It is designed to assess the degree to which graduates of the Master of Science degree and Educational Specialist degrees are better prepared after study to become teacher leaders where supported. One section of the survey specifically assesses teachers based on the Georgia State Teacher Leadership Standards as an example of one set of state standards that teachers who earn these degrees aspire to reach.

The survey was originally completed by 41 graduates prior to July 2011. Most original questions were maintained and additional questions added in a second version of the survey completed by 49 Ed.S. graduates prior to September 2012. Graduates were surveyed immediately upon completion of the program; plans are underway to survey graduates a year or two after completion of the program to assess the impact of the programs over time. To complete the survey, teachers responded to multiple behavior-based questions that assessed the degree to which they have engaged in teacher leadership behaviors. As of September 2012, 90 teachers have responded to the Empowering Teacher Leaders Survey. Most of the data cited in this report is based on all 90 responses, but because not all questions were asked the exact same way, in some cases data is based only on the original 41 responses. The appendix includes full analysis of responses.

Methodology

As noted previously, this survey was developed after an extensive literature search and review and bases its questions on findings from multiple studies and national and state teacher leadership standards. Section I (Leadership Roles) asks teachers what roles they have taken on along with their job as teacher. Section II (Teacher Leadership Dispositions) was designed to assess how well the graduate program gives teachers the skills, knowledge, and dispositions necessary to be teacher leaders. The final section (Teacher Leader Practices) assesses teachers' practices as they relate to being a teacher

leader; this section was developed based on Georgia's Teacher Leadership Standards.

Given the development of the survey, it can clearly be said to have high content validity, which refers to the extent to which a measure represents all facets of a given social construct—in this case, teacher leadership.

To assess the reliability of the survey, or degree to which the survey measures what it is meant to measure consistently over time, item-analyses, including Cronbach's alphas, were calculated by section. Item-analyses indicated that items were well aligned and that no questions needed to be dropped from the survey. Cronbach's alphas, which measure internal consistency, were .763, .861, and .940 for each section of the survey (Leadership Roles, Teacher Leadership, Standards, and Teacher Leader Practices). When evaluating the internal consistency of a scale, the rule of thumb to follow is: 0.9 Excellent, 0.8 Good, 0.7 Acceptable, 0.6 Questionable, 0.5 Poor, and below 0.5 Unacceptable. Thus, survey sections range from acceptable to excellent. In summary, the validity of the instrument is strong, and survey reliability ranged from moderate to excellent, suggesting that the overall instrument reliably measures the intended topic of teacher leadership.

Participants

A random sample of graduates were asked to respond to a survey designed to assess the degree to which the graduate programs support the development of teacher leaders; a total of 90 graduates responded. For the original survey, more than 60% of respondents (n=22, 63%) graduated from the Ed.S. program with the remainder graduating from the M.S. program. Subsequent versions of the survey were sent only to Ed.S. students in alignment with the focus of the Ed.S. program's concentration on teacher leadership. Respondents represented a diverse range of teaching positions, school levels, and schools, including public, private, and parochial schools; the first survey had responses from 11 states in all regions in the United States, and the second had responses from 3 states.

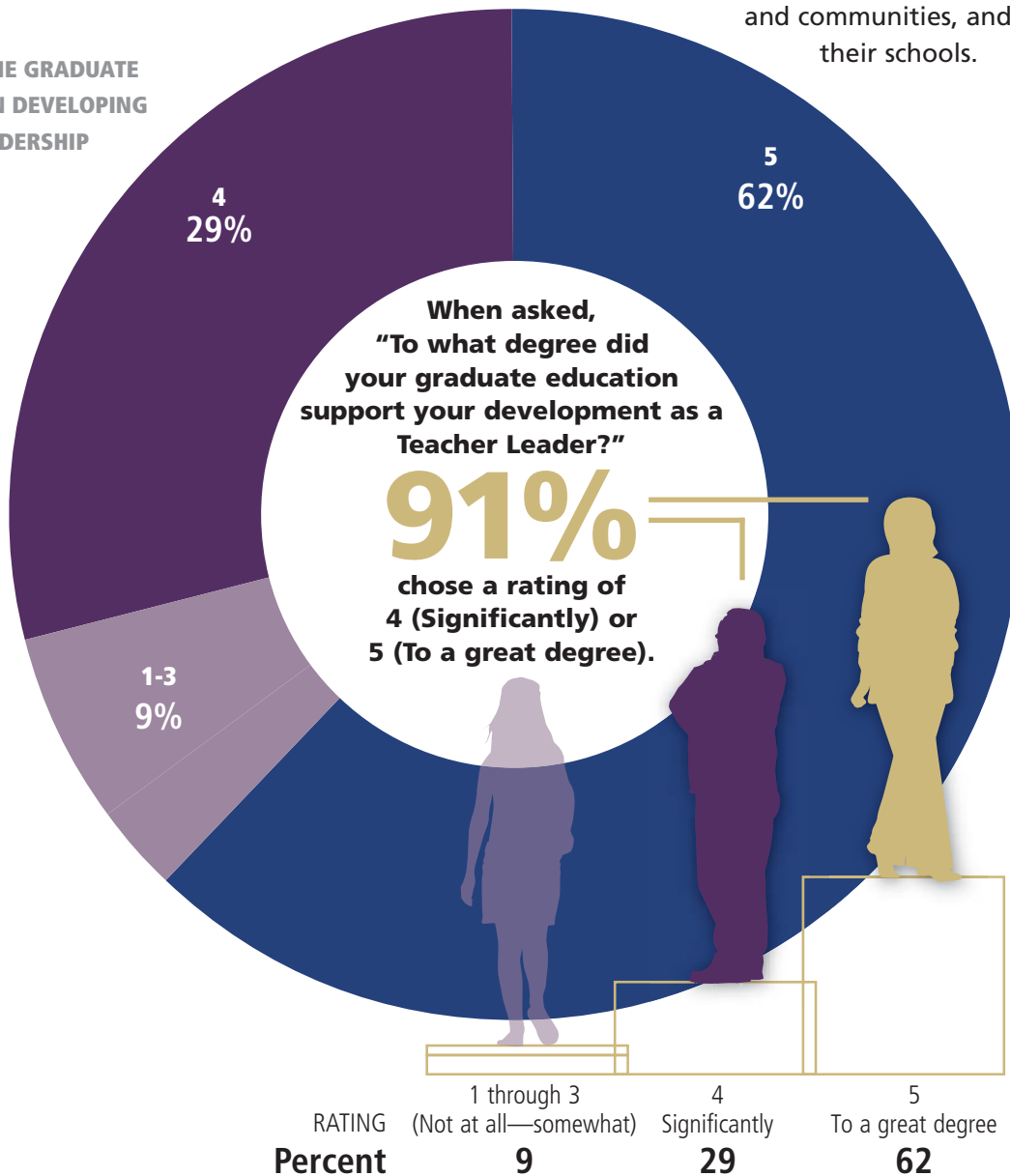
FINDINGS

Degree Programs' Development of Teacher Leaders

On a scale of 1 (Not at all) to 5 (To a great degree), when asked, "To what degree did your graduate education support your development as a Teacher Leader?" graduates' mean rating was 4.47, with 91% of respondents indicating that they strongly credited their graduate education with their development as teacher leaders (see Figure 1).

When asked to elaborate on the ways in which their graduate education supported their development as teacher leaders, comments indicated that these programs had provided teachers the knowledge, skills, and opportunities to enact changes within their classes, among colleagues and communities, and within their schools.

FIGURE 1:
IMPACT OF THE GRADUATE PROGRAM ON DEVELOPING TEACHER LEADERSHIP



Engagement in Teacher Leadership Roles

The first part of the survey asked teachers to respond yes or no as to whether they had engaged in a teacher leadership role (e.g., presented at a conference, served as a formal mentor, etc.). Findings indicate that 93% had taken on or were currently active in at least one role and that 70% had taken on or were currently active in five or more roles.

Number of Leadership Roles	1 or more	2 or more	3 or more	4 or more	5 or more
Number Responding	84	80	74	67	63
Percent	93%	89%	82%	74%	70%

FIGURE 2:
PERCENT OF TEACHERS ENGAGED BY
NUMBER OF LEADERSHIP ROLES



Involvement in Teacher Leadership Activities and Actions as Articulated by National and State Standards

Using the standards, domains and indicators identified by the Model Teacher Leader Standards, the State of Georgia Teacher Leadership Standards, as well as the literature review, a series of questions asked teachers to report on how their own specific activities, actions, and behaviors demonstrated evidence of consistency with the standards. Full statistical analysis and details for each question, by question, are included in Appendices B. The below section provides an integrated understanding of how responses to the various questions coalesce to demonstrate evidence of accomplishment within each domain/standard.



1) Program graduates are leaders in designing and implementing job-embedded professional development based on cutting-edge research on student and adult learning.

Related Standards:

Teacher Leader Model Standards Domain III: Promoting professional learning for continuous improvement. The teacher leader understands the evolving nature of teaching and learning, established and emerging technologies, and the school community. The teacher leader uses this knowledge to promote, design, and facilitate job-embedded professional learning aligned with school improvement goals.

GA Standard 1: The teacher leader facilitates the design and implementation of sustained, intensive, and job-embedded professional learning based on identified student and teacher needs.

About 74% of program graduates report general actions and experiences consistent with this domain/standard. Additionally, and more specifically,

- 53% have participated in professional development outside of the professional development provided at their school, not including college/graduate school classes.
- 89% report staying current with research regarding best practices and features of effective professional learning based on identified teacher and student needs.
- 56% say they apply knowledge and strategies or adult learning theories across teacher leadership practices.
- 81% teach and/or model changes in teacher practices that are necessary for improvement in student learning.
- Other related activities the teachers reported leading include:
 - Designing programs for intervention.
 - Implementing Response to Intervention (RTI).
 - Training teachers through online professional development.

- ▶ Developing Race to the Top projects.
- ▶ Presenting at faculty in-services.
- General comments from program graduates related to this domain/standard:
 - ▶ “This program provided me with the knowledge and skills to become a teacher leader in nontraditional leadership roles.”
 - ▶ “Collaborating with teachers and empowering them to use their time and energy wisely.”
 - ▶ “[It] gave me the tools necessary to support and encourage students, teachers and administrators to promote higher levels of thinking and learning using Mind, Brain, and Education strategies and philosophies.”
 - ▶ “As a Teacher Leader, the ... graduate studies have supported my development as a professional educator. Many of the strategies have been useful in facilitating a more informed use of best teaching practices. Another development has been my constant reflection on practices, being flexible to change teaching style to accommodate students learning modalities.”
 - ▶ “This program has given me a different outlook on what it means to be a professional educator outside of the traditional scope of education. My confidence in the tools provided makes it easier to face students in the classroom. I am better equipped to teach and learn.”



2) Program graduates are leaders in assisting with the development of an ongoing collaborative culture of schooling based on principles of lifelong adult learning.

Related Standards:

Teacher Leader Model Standards Domain I: Fostering a collaborative culture to support educator development and student learning. The teacher leader understands the principles of adult learning and knows how to develop a collaborative culture of collective responsibility in the school. The teacher leader uses this knowledge to promote an environment of collegiality, trust, and respect that focuses on continuous improvement in instruction and student learning.

GA Standard 2: The teacher leader works to promote development of a school culture that fosters excellence and equity and focuses on continuous improvement creating a sense of belonging and building a collaborative work environment.

About 89% of program graduates report general actions and experiences consistent with this domain/standard. Additionally, and more specifically,

- 78% hold an informal position in terms of decision making (ear to the principal, for example) or providing support (informal teacher mentor, for example).
- 52% have delivered professional development in education at the school, district, state, or other level, including to parents.

- 78% facilitate open dialogue of ideas and information that support student achievement goals and the change of teaching and learning practices.
- 66% facilitate colleagues' understanding of community culture and diversity and how culture and diversity enriches educational experiences of students to achieve high levels of learning for all students.
- 64% share current research with the school community.
- Other related activities the teachers reported leading include:
 - Leading book studies
 - Serving on teacher advisory committees
 - Presenting learning strategies to department meetings
- General comments from program graduates related to this domain/standard:
 - "It gave me the knowledge and confidence to further develop myself and my students, and to model to them the benefits of being a life-long learner."
 - "It gave me the tools to be a better role model as a teacher and department leader."
 - "The tools I've received from the [brain-based teaching] concept helped me to have a really positive attitude toward my students ... because I better understand emotion[al] needs [people] may have. This understanding gives me a certain kind of sensitivity with others as well."
 - "The graduate program increased my confidence in my teaching. It helped me to better understand how students learn and the best strategies that can be used to meet their needs. I am now able to support my teaching practices with research and clearly share this important information with parents, teachers, and administrators."
 - "[The program] helped me identify my strengths and weaknesses as a leader, reflect about my leadership skills, (learn) what good leaders should do and look like, and [supplied] resources to implement and improve strategies."



3) Program graduates are leaders in collaborating with colleagues around a vision of 21st century schooling based on the aligning of curriculum, instruction, and assessment grounded in cutting-edge research on teaching and learning.

Related Standards:

Teacher Leader Model Standards Domain IV: Facilitating improvements in instruction and student learning. The teacher leader demonstrates a deep understanding of the teaching and learning processes and uses this knowledge to advance the professional skills of colleagues by being a continuous learning and modeling reflective practice based on student results. The teacher leader

works collaboratively with colleagues to ensure instructional practices are aligned to a shared vision, mission, and goals.

GA Standard 3: The teacher leader demonstrates a comprehensive understanding of curriculum and applies this knowledge to the alignment of curriculum, instruction, and assessment to standards.

About 89% of program graduates report general actions and experiences consistent with this domain/standard. Additionally, and more specifically,

- 58% lead others in prioritizing, mapping, and monitoring the implementation of the curriculum.
- 64% design, facilitate, and implement professional development aligned to state and national professional learning standards.
- 29% participated in an internship related to improving skills that they can share with students.
- 23% wrote a grant or other request for funding, usually for curriculum materials to enhance instructional effectiveness.
- 83% utilize technology to enhance students' engagement in or understanding of lessons.
- Other related activities the teachers reported leading include:
 - ▶ Professional learning community participant in a math project grant through a local university to support student achievement.
 - ▶ Chairing a school faculty department.
 - ▶ Leading special student activities with a key subject-matter emphasis.
- General comments from program graduates related to this domain/standard:
 - ▶ "It gave me the tools to be a better teacher and department leader."
 - ▶ "It opened my eyes to the critical importance of understanding how the brain learns most effectively and how teachers can harness that understanding in their classrooms."
 - ▶ "I am naturally a shy person and this program really helped to improve my confidence and my ability to share what I have learned about brain-friendly teaching."
 - ▶ "(It) gave me the tools necessary to support and encourage students, teachers, and administrators to promote higher levels of thinking and learning using Mind, Brain, and Education strategies and philosophies."
 - ▶ "The program has greatly broadened my thinking and teaching methods [through an] understanding [about] how the brain learns and processes. ...one can retrain the brain. Just fascinating."



4) Program graduates are leaders in understanding and modeling best pedagogical practices and joyfully sharing what they have learned with colleagues as a mentor and coach.

Related Standard:

GA Standard 4: The teacher leader models best practices in pedagogy and serves as a mentor and coach for other educators.

About 81% of program graduates report general actions and experiences consistent with this standard. Additionally, and more specifically,

- 54% have served as a formal mentor or coach to one or more other teachers.
- 46% have served as a model teacher within their school or district.
- 81% model and articulate exemplary instructional practices based on current research.
- 61% guide teachers in the in-depth understanding of lesson planning and delivery of content in clear and meaningful ways.
- 67% model and assist teachers in the integration of technology to support classroom instruction and student learning.
- Other related activities the teachers reported leading include:
 - ▶ Integrating instructional technology school-wide.
 - ▶ Working with colleagues district-wide to develop an online six-month curriculum in the event that schools needed to be shut down for an emergency.
 - ▶ Attending a leadership summit.
 - ▶ Sharing learning with colleagues through online media (Facebook, blogs, etc.).
- General comments from program graduates related to this domain/standard:
 - ▶ “I am more confident in the brain-based strategies and believe that this way we will reach our students.”
 - ▶ “The program was the best educational experience of my life. It has completely reformed my teaching strategies and increased my level of personal and professional development tremendously.”
 - ▶ “The program has had a huge impact on my teaching practice and on my level of confidence as a teacher.”

5) Program graduates are leaders in collaborating with others to design and implement assessment practices and data analysis that results in improvements in learning and teaching.

Related Standards:

Teacher Leader Model Standards Domain V: Promoting the use of assessments and data for school and district improvement. The teacher leader is knowledgeable about current research on classroom- and school-based data and the design and selection of appropriate formative and summative assessment methods. The teacher leader shares this knowledge and collaborates with colleagues to use assessment and other data to make informed decisions that improve learning for all students and to inform school and district improvement strategies.

GA Standard 5: The teacher leader works with others to design and implement assessment practices and analyze data for monitoring and improving teaching and learning through data-informed decision making.

About 76% of program graduates report general actions and experiences consistent with this standard. Additionally, and more specifically,

- 56% facilitate teachers in the collection, analysis, use, and interpretation of varied assessment data for instruction decisions and changes.
- Other related activities the teachers reported leading include:
- Sharing and modeling the writing of Understanding by Design lesson plans.
- General comments from program graduates related to this domain/standard:
 - ▶ “It opened avenues to pursue change in the policies of the administration and make pertinent [classroom] changes to enhance student success in achievement.”
 - ▶ “[It] allowed me to evaluate my teaching practice so I could make improvements.”



6) Program graduates are leaders in using key research to improve teaching practice with the intent of increasing student learning.

Related Standards:

Teacher Leader Model Standards Domain VI: Improving outreach and collaboration with families and community. The teacher leader understands that families, cultures, and communities have a significant impact on educational processes and student learning. The teacher leader works with colleagues to promote ongoing systematic collaboration with families, community members, business and community leaders, and other stakeholder to improve the educational system and expand opportunities for student learning.

GA Standard 7: The teacher leader demonstrates the ability to collaborate with stakeholders to improve student learning and to guide positive change.

About 71% of program graduates report general actions and experiences consistent with this standard. Additionally, and more specifically,

- 72% work with others to create an environment that encourages needed change using a research-based change model.
- 58% of graduates have engaged in classroom research.
- 14% have presented at a local, state, or national professional organization (e.g., State Science Teacher Association, National Council of Teachers of Mathematics, etc.).
- 2% have published an article in a professional teaching or education journal or had their teaching and learning successes published.
- 64% share current research with the school community.
- 51% conduct and engage others in appropriate research to improve educational outcomes and help address critical educational issues.
- General comments from program graduates related to this domain/standard:
 - ▶ The program “provided a better understanding of what research shows and how that can be better applied in the classroom. With that information, (I was) provided an opportunity to open discussion with others in my school.”
 - ▶ “[The program] increased my confidence within the entire school community—with teachers, parents, and community leaders. Learned up to the minute research on teaching and learning practices.”
 - ▶ “It gave me the knowledge and, therefore, the confidence to apply and share what I learned with my students, colleagues, and community.”
 - ▶ “[It] gave me the research findings to back up my understanding of best practices.”
 - ▶ “[I now have] the knowledge, skill and various research based strategies to promote student achievement.”



7) Program graduates are leaders in improving outreach and positive collaboration with stakeholders in the learning community, including families, community members and leaders, and others in order to improve student learning and guide necessary change.

Related Standards:

Teacher Leader Model Standards Domain VI: Improving outreach and collaboration with families and community. The teacher leader understands that families, cultures, and communities have a significant impact on educational processes and student learning. The teacher leader works with

colleagues to promote ongoing systematic collaboration with families, community members, business and community leaders, and other stakeholder to improve the educational system and expand opportunities for student learning.

GA Standard 7: The teacher leader demonstrates the ability to collaborate with stakeholders to improve student learning and to guide positive change.

About 89% of program graduates report general actions and experiences consistent with this standard. Additionally, and more specifically,

- 28% are members of political education organizations and associations.
- 34% have held a formal position on a decision-making board at the district or state level (e.g., department chair, leader of PLCs, on school improvement team, staff council, state school board council, parent outreach committee, etc.).
- 72% work with others to create an environment that encourages needed change using a research-based change model.
- 50% articulate and advocate to various audiences the rationale and processes of school improvement.
- Other related activities the teachers reported leading include:
 - ▶ Participating in a SACS review.
 - ▶ Developing other teacher leaders within the school system.
 - ▶ Volunteering with the community as an ESOL instructor to parents and community members.
- General comments from program graduates related to this domain/standard:
 - ▶ “By providing me with research-based strategies and knowledge which gave me the confidence to challenge outmoded practices in the alternative education program in which I currently teach. The gains that my students experienced on standardized tests further highlighted the effective nature of the graduate program. I was asked to facilitate in-house PD and later asked to facilitate training on a district level.”
 - ▶ “It gave me the knowledge, therefore the confidence to apply and share what I learned with my students, colleagues, and community.”
 - ▶ “This program develops a highly introspective empowerment that encourages self-confidence and realistic engagement in the classroom and (with) all stakeholders related to it.”

CONCLUSION

Findings strongly indicate that the graduate degree programs in Brain-Based Teaching have helped teachers develop their teacher leadership knowledge and skills while providing them multiple opportunities to engage in authentic teacher leadership experiences. For example, more than 91% of respondents indicated that they strongly credited their graduate education with their development as teacher leaders. Additionally, 93% of teachers responding to this survey (84 of 90) had taken on or are currently active in at least one teacher leadership role—with 70% (63 of 90) having taken on or currently active in five or more roles). Such roles include holding informal positions in terms of decision making or providing support (78%), participating in professional development outside of their school (53%), and engaging as members of local, state, or national professional organizations (43%).

The teachers showed strong positive agreement with standards-based practice. In fact, 50% or more of teachers responding to this survey agree or strongly agree that they engage in all of the behaviors noted by the Georgia State Standards as indicative of being a teacher leader, with graduates most likely to indicate that they stay current with research regarding best practices and features of effective professional learning based on identified teacher and student needs; utilize technology to enhance students' engagement in or understanding of lessons; teach and/or model changes in teacher practices that are necessary for improvement in student learning; and model and articulate exemplary instructional practices and strategies based on current research.

When asked to elaborate on the ways in which their graduate education supported their development as teacher leaders, comments indicated that program graduates:

1. are leaders in designing and implementing job-embedded professional development based on cutting-edge research on student and adult learning;
2. are leaders in assisting with the development of an ongoing collaborative culture of schooling based on principles of lifelong adult learning;
3. are leaders in collaborating with colleagues around a vision of 21st century schooling based on the aligning of curriculum, instruction, and assessment grounded in cutting-edge research on teaching and learning;
4. are leaders in understanding and modeling best pedagogical practices and joyfully sharing what they have learned with colleagues as a mentor and coach;

5. are leaders in collaborating with others to design and implement assessment practices and data analysis that results in improvements in learning and teaching;
6. are leaders in using key research to improve teaching practice with the intent of increasing student learning; and
7. are leaders in improving outreach and positive collaboration with stakeholders in the learning community, including families, community members and leaders, and others in order to improve student learning and guide necessary change.

These findings support earlier studies of program graduates, including in-depth interviews of graduates who spoke of the leadership behaviors and roles in which they engage as they share information about the mind, brain, and education connection and its impact on students with other colleagues as well as their students' parents (Germuth, 2011).

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APPENDICES

**Appendix A:
Empowering Teacher Leaders Survey 1**

**Appendix B:
Empowering Teacher Leaders Survey 2**

**Appendix C:
Survey Analyses**

Appendix A: Empowering Teacher Leaders Survey 1

Original version, completed by 41 graduates

BrainSMART Survey of Teacher Leadership

This survey asks you questions about formal and informal activities and practices related to being a Teacher Leader in which you may engage. Please take a few minutes to respond to these questions so that we may better understand the roles that you play as a Teacher Leader and the ways in which your education supported your development as a Teacher Leader.

1. Please indicate whether you have engaged in any of the following activities since completing your BrainSMART graduate program?

	Yes	No
Held a leadership role at your school (Department Chair, leader of PLCs, etc.).	<input type="radio"/>	<input type="radio"/>
Held a formal position on a decision-making board at the district or state level (e.g., Department Chair, Leader of PLCs, on School Improvement Team, Staff Council, State School Board Council, Parent Outreach Committee, etc.).	<input type="radio"/>	<input type="radio"/>
Held an informal position in terms of decision-making (ear to the principal, for example) or providing support (e.g., informal teacher mentor), etc.	<input type="radio"/>	<input type="radio"/>
Delivered professional development in education at the school, district, state, or other level, including to parents.	<input type="radio"/>	<input type="radio"/>
Are a member of, or are active in a local, state, or national professional organization (e.g., State Science Teacher Association, National Council of Teachers of Mathematics, etc.).	<input type="radio"/>	<input type="radio"/>
Presented at a local, state, or national professional organization (e.g., State Science Teacher Association, National Council of Teachers of Mathematics, etc.).	<input type="radio"/>	<input type="radio"/>
Served as a formal mentor or coach to one or more other teachers.	<input type="radio"/>	<input type="radio"/>
Served as a model teacher within your school or district.	<input type="radio"/>	<input type="radio"/>
Were or are a member of, or were or are active in, a political education organization including education union.	<input type="radio"/>	<input type="radio"/>
Published an article in a professional teaching or education journal or had your story written up and published.	<input type="radio"/>	<input type="radio"/>
Wrote a grant or other request for funding.	<input type="radio"/>	<input type="radio"/>
Participated in professional development outside of the professional development provided at your school, not including college/graduate school classes.	<input type="radio"/>	<input type="radio"/>
Took a college and/or graduate school course.	<input type="radio"/>	<input type="radio"/>
Participated in an internship related to improving skills that you can share with students (e.g., science teacher participating in summer research opportunity).	<input type="radio"/>	<input type="radio"/>

2. At any point in your career, have you engaged in classroom research?

- Yes
 No

3. What other activities have you engaged in that are related to being a Teacher Leader?

Survey 1, Continued

4. On a scale of 1 (Not at all) to 5 (To a great degree), please indicate the degree to which you believe the following statements describe YOU.

	1 (Not at all)	2	3	4	5 (To a great extent)
The teacher leader facilitates the design and implementation of sustained, intensive, and job-embedded professional learning based on identified student and teacher needs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The teacher leader works to promote development of a school culture that fosters excellence and equity and focuses on continuous improvement creating a sense of belonging and building a collaborative work environment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The teacher leader demonstrates a comprehensive understanding of curriculum and applies this knowledge to the alignment of curriculum, instruction, and assessment to standards.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The teacher leader models best practices in pedagogy and serve as a mentor and coach for other educators.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The teacher leader works with others to design and implement assessment practices and analyze data for monitoring and improving teaching and learning through data-informed decision making.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The teacher leader accesses and conducts research, and applies research findings to improve teaching and learning.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The teacher leader demonstrates the ability to collaborate with stakeholders to improve student learning and to guide positive change.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Survey 1, Continued

5. On a scale of 1 (Not at all) to 5 (To a great degree), please indicate the degree to which the following statements describe practices in which you engage.

	1 (Not at all)	2	3	4	5 (To a great extent)
Utilize technology to enhance students' engagement in or understanding of lessons.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Model and assist teachers in the integration of technology to support classroom instruction and student learning.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Apply knowledge and strategies of adult learning theories across teacher leadership practices.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stay current with research regarding best practices and features of effective professional learning based on identified teacher and student needs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Share current research with the school community.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Teach and/or model changes in teacher practices that are necessary for improvement in student learning.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Design, facilitate, and implement professional development aligned to state and national professional learning standards.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Work with others to create an environment that encourages needed change using a research-based change model.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lead others in prioritizing, mapping, and monitoring the implementation of the curriculum.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Model and articulate exemplary instructional practices and strategies based on current research.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Promote and encourage teachers in developing higher order questions, thoughtful discourse, and critical thinking in the classroom.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Guide teachers in the in-depth understanding of lesson planning and delivery of content in clear and meaningful ways.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facilitate teachers in the collection, analysis, use, and interpretation of varied assessment data for instructional decisions and changes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conduct and engage others in appropriate research to improve educational outcomes ; and to help address critical educational issues.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Articulate and advocate to various audiences the rationale and processes of school improvement.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facilitate open dialogue of ideas and information that support student achievement goals and the change of teaching and learning practices.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facilitate colleagues' understanding of community culture and diversity and how culture and diversity enriches educational experiences of students to achieve high levels of learning for all students.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Survey 1, Continued

6. On a scale of 1 (Not at all) to 5 (To a great degree), to what degree did your BrainSMART graduate education support your development as a Teacher Leader?

- 1 (Not at all) 2 3 4 5 (To a great extent)

7. In what ways did your BrainSMART graduate education support your development as a Teacher Leader?

8. Is there anything else that you would like to add?

9. When did you graduate from your most recent BrainSMART degree program?

- 2011 May
 2010 December
 2010 August

10. Which program did you complete?

- M.S. program
 Ed.S. program

11. Please indicate how many years, including this past year, that you have been a teacher:

- 1 year
 2-5 years
 6-10 years
 11-15 years
 16-20 years
 21-30 years
 30+ years
 I taught previously, but am not currently a teacher.
 I am not a teacher.

Other (please specify)

Survey 1, Continued

12. Please indicate what school level you teach:

- PreK
- Elementary
- Middle
- High
- College
- Adults

Other (please specify)

13. In which state do you live:

14. In what type of school do you teach?

- Public
- Private (parochial)
- Private (non-parochial)
- Independent
- Charter
- N/A

Appendix B: Empowering Teacher Leaders Survey 2

Completed by 49 Ed. S. Program graduates through September 2012.

BrainSMART Graduates Teacher Leadership Survey

1. When did you complete the program?

2. What is your current job/role? (check all that apply)

- Teacher -- Pre-K-3rd grade
- Teacher -- 4-5th grade
- Teacher -- 6-8th grade
- Teacher -- 9-12th grade
- Teacher -- college or other adults
- Teacher other role or subject (provide detail below)
- Lead teacher
- Principal
- Staff developer
- Curriculum specialist
- Counselor/School psychologist
- Clinician
- Not currently working

Other (please specify)

3. Your state:

Other (please specify)

*4. Which BrainSMART program at NSU did you complete?

Survey 2, Continued

5. Have you engaged in any of the following activities before, during, and/or after completing your Ed.S. degree? (Check all that apply.)

	Before starting degree	During program	After completing the program	Not yet, but plan to do so
Serve in a leadership role at your school (Department Chair, leader of PLCs, etc.).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hold a formal position on a decision-making board at the district or state level (e.g., Department Chair, Lead a PLCs, on School Improvement Team, Staff Council, State School Board Council, Parent Outreach Committee, etc.).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hold an informal position in terms of decision-making (ear to the principal, for example) or providing support (e.g., informal teacher mentor), etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Deliver professional development in education at the school, district, state, or other level, including to parents.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are a member of, or are active in a local, state, or national professional organization (e.g., State Science Teacher Association, National Council of Teachers of Mathematics, etc.).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Present at a local, state, or national professional organization (e.g., State Science Teacher Association, National Council of Teachers of Mathematics, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Serve as a formal mentor or coach to one or more other teachers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Serve as a model teacher within your school or district.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are a member of or are active in a political education organization including education union.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Publish an article in a professional teaching or education journal or had your story written up and published.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Write a grant or other request for funding.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Participate in professional development outside of the professional development provided at your school, not including college/graduate school classes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Participate in an internship related to improving skills that you can share with students (e.g., science teacher participating in summer research opportunity).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conduct classroom research.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Are you engaged in any other activities that allow you to reach beyond your own classroom to improve teaching and learning?

Survey 2, Continued

6. Did your experience in the Ed.S. program support you in any or all of the following practices? (Check all that apply.)

	I feel better prepared to do this	I do this more often	I am more successful in my efforts with this
Utilize technology to enhance students' engagement in or understanding of lessons.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Model and assist teachers in the integration of technology to support classroom instruction and student learning.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Apply knowledge and strategies of adult learning theories across teacher leadership practices.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stay current with research regarding best practices and features of effective professional learning based on identified teacher and student needs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Share current research with the school community.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Teach and/or model changes in teacher practices that are necessary for improvement in student learning.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Design, facilitate, and implement professional development aligned to state and national professional learning standards.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Work with others to create an environment that encourages needed change using a research-based change model.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lead others in prioritizing, mapping, and monitoring the implementation of the curriculum.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Model and articulate exemplary instructional practices and strategies based on current research.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Promote and encourage teachers in developing higher order questions, thoughtful discourse, and critical thinking in the classroom.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Guide teachers in the in-depth understanding of lesson planning and delivery of content in clear and meaningful ways.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Facilitate teachers in the collection, analysis, use, and interpretation of varied assessment data for instructional decisions and changes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conduct and engage others in appropriate research to improve educational outcomes and to help address critical educational issues.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Articulate and advocate to various audiences the rationale and processes of school improvement.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Facilitate open dialogue of ideas and information that support student achievement goals and the change of teaching and learning practices.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Facilitate colleagues' understanding of community culture and diversity and how culture and diversity enriches educational experiences of students to achieve high levels of learning for all students.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Survey 2, Continued

7. Do you consider yourself a teacher leader?

Yes

Sometimes

No

Why or why not? How so?

8. On a scale of 1 (not at all) to 5 (to a great degree), to what degree did your BrainSMART graduate education support your development as a Teacher Leader?

1 (not at all)

2

3

4

5 (to a great degree)

In what ways did your BrainSMART graduate education support your development as a Teacher Leader?

9. Please consider each of the following statements and describe any activities you have done that are consistent with each.

The teacher leader facilitates the design and implementation of sustained, intensive, and job-embedded professional learning based on identified student and teacher needs.

The teacher leader works to promote development of a school culture that fosters excellence and equity and focuses on continuous improvement creating a sense of belonging and building a collaborative work environment.

The teacher leader demonstrates a comprehensive understanding of curriculum and applies this knowledge to the alignment of curriculum, instruction, and assessment to standards.

The teacher leader models best practices in pedagogy and serves as a mentor and coach for other educators.

The teacher leader works with others to design and implement assessment practices and analyze data for monitoring and improving teaching and learning through data-informed decision making.

The teacher leader accesses and conducts research, and applies research findings to improve teaching and learning.

The teacher leader demonstrates the ability to collaborate with stakeholders to improve student learning and to guide positive change.

Any other formal or informal teacher leadership activities.

Appendix C: Survey Analyses

Table 1: Teachers Engaged in Specific Teacher Leader Roles

(% Engaged column shows results for first and second surveys)

	% ENGAGED	
	SURVEY 1	SURVEY 2
a. Held an informal position in terms of decision-making (ear to the principal, for example) or providing support (e.g., informal teacher mentor), etc.	78.9	77.8
b. Participated in professional development outside of the professional development provided at your school, not including college/graduate school classes.	59.0	53.3
c. Are a member of, or are active in a local, state, or national professional organization (e.g., State Science Teacher Association, National Council of Teachers of Mathematics, etc.).	53.8	43.3
d. Delivered professional development in education at the school, district, state, or other level, including to parents.	43.6	52.2
e. Served as a formal mentor or coach to one or more other teachers.	38.5	54.4
f. Participated in an internship related to improving skills that you can share with students (e.g., science teacher participating in summer research opportunity).	37.8	28.9
g. Served as a model teacher within your school or district.	35.9	45.6
h. Took a college and/or graduate school course.	31.6	(n/a)
i. Were or are a member of, or were or are active in, a political education organization including education union.	30.8	27.8
j. Held a formal position on a decision-making board at the district or state level (e.g., Department Chair, Leader of PLCs, on School Improvement Team, Staff Council, State School Board Council, Parent Outreach Committee, etc.).	28.2	34.4
k. Wrote a grant or other request for funding.	21.1	23.3
l. Presented at a local, state, or national professional organization (e.g., State Science Teacher Association, National Council of Teachers of Mathematics, etc.).	10.3	14.4
m. Published an article in a professional teaching or education journal or had your story written up and published.	5.1	2.2

Table 2: Georgia Standards

	N	MIN.	MAX.	MEAN	SD	% 4 OR 5
a. The teacher leader facilitates the design and implementation of sustained, intensive, and job-embedded professional learning based on identified student and teacher needs. (STANDARD 1)	38	2	5	4.05	1.06	73.7
b. The teacher leader works to promote development of a school culture that fosters excellence and equity and focuses on continuous improvement creating a sense of belonging and building a collaborative work environment. (STANDARD 2)	38	2	5	4.53	0.76	89.5
c. The teacher leader demonstrates a comprehensive understanding of curriculum and apply this knowledge to the alignment of curriculum, instruction, and assessment to standards. (STANDARD 3)	38	2	5	4.45	0.76	89.5
d. The teacher leader models best practices in pedagogy and serves as a mentor and coach for other educators. (STANDARD 4)	38	3	5	4.37	0.79	81.6
e. The teacher leader works with others to design and implement assessment practices and analyze data for monitoring and improving teaching and learning through data-informed decision making. (STANDARD 5)	38	2	5	4.16	0.86	76.3
f. The teacher leader accesses and conducts research, and apply research findings to improve teaching and learning. (STANDARD 6)	38	1	5	4.00	1.16	71.1
g. The teacher leader demonstrates the ability to collaborate with stakeholders to improve student learning and to guide positive change. (STANDARD 7)	38	2	5	4.55	0.76	89.5

Table 3: Teachers’ Agreement That They Engage in Teacher Leadership Practices

	N	MIN.	MAX.	MEAN	SD	% 4 OR 5
a. Stay current with research regarding best practices and features of effective professional learning based on identified teacher and student needs.	36	1	5	4.36	0.93	88.9
b. Utilize technology to enhance students’ engagement in or understanding of lessons.	36	1	5	4.31	0.92	83.3
c. Teach and/or model changes in teacher practices that are necessary for improvement in student learning.	36	1	5	4.19	0.98	80.6
d. Model and articulate exemplary instructional practices and strategies based on current research.	36	1	5	4.19	0.98	80.6
e. Work with others to create an environment that encourages needed change using a research-based change model.	36	1	5	4.06	1.07	72.2
f. Promote and encourage teachers in developing higher order questions, thoughtful discourse, and critical thinking in the classroom.	36	1	5	4.03	1.21	75
g. Facilitate open dialogue of ideas and information that support student achievement goals and the change of teaching and learning practices.	36	1	5	3.94	1.22	77.8
h. Facilitate colleagues’ understanding of community culture and diversity and how culture and diversity enriches educational experiences of students to achieve high levels of learning for all students.	35	1	5	3.86	1.17	65.7
i. Share current research with the school community.	36	1	5	3.83	1.13	63.9
j. Lead others in prioritizing, mapping, and monitoring the implementation of the curriculum.	36	1	5	3.75	1.23	58.3
k. Design, facilitate, and implement professional development aligned to state and national professional learning standards.	36	1	5	3.72	1.41	63.9
l. Guide teachers in the in-depth understanding of lesson planning and delivery of content in clear and meaningful ways.	36	1	5	3.72	1.34	61.1
m. Model and assist teachers in the integration of technology to support classroom instruction and student learning.	36	1	5	3.67	1.17	66.7
n. Apply knowledge and strategies of adult learning theories across teacher leadership practices.	36	1	5	3.58	1.32	55.6
o. Facilitate teachers in the collection, analysis, use, and interpretation of varied assessment data for instructional decisions and changes.	36	1	5	3.58	1.27	55.6
p. Articulate and advocate to various audiences the rationale and processes of school improvement.	36	1	5	3.44	1.21	50.0
q. Conduct and engage others in appropriate research to improve educational outcomes and to help address critical educational issues.	35	1	5	3.43	1.42	51.4

Empowering Teacher Leaders

The Impact of Graduate Programs
Connecting Mind, Brain, and Education Research
to Teacher Leadership

