Study of The Impact of Educator Preparation Programs Through Research with Teacher

Candidates

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Abstract

Accreditation calls on educator preparation programs to determine their program impact by evaluating the teaching effectiveness of program completers and to measure these completers' impact on their P-12 students' learning and development. In an innovative twist and taking a more democratic and scholarly approach, we conducted our self-study by engaging our graduate teacher candidates in a qualitative research study of our completers. Four completers, representing each of our programs, participated in the study. Their teaching competencies and impact on their student learning were measured against the four domains of our program's candidate learning outcomes: Intentional teaching, data literacy, cultural competence, professional practice and leadership. Teacher candidates collected data on demonstration of these four domains through focused interviews and classroom observations of program completers and through surveys of their employers. Consolidated data analyses were conducted to determine key findings, and to extract implications. Findings highlighted the strengths of our program to be intentional teaching, cultural competence, and professional practice and leadership. Greater focus on data literacy emerged as an area for improvement. Conducting the study of our program impact as a research project opened another avenue for development of professional knowledge and research skills in teacher candidates. It also established the viability of such studies for determining program impact.

Keywords: program impact, accreditation, teaching effectiveness, teacher education

Study of The Impact of Educator Preparation Programs Through Research with Teacher Candidates

Most educator preparation programs (Remmik, Karm, Haamer, & Lepp, 2011), including our own teacher education programs, work on their continuous program improvements through data-based self-study efforts. Such efforts are also necessary for accreditation. CAEP, or the Council for the Accreditation of Educator Preparation which oversees the accreditation process, has identified key standards (CAEP, 2013) to both guide and measure the effectiveness of EPPs. Of the five CAEP standards, Standard 4 is related specifically to Program Impact. It reads "The provider demonstrates the impact of its completers on P-12 student learning and development, classroom instruction, and schools, and the satisfaction of its completers with the relevance and effectiveness of their preparation." The standards further call on EPPs to use "multiple measures" to measure the effectiveness of their program completers in their P-12 classrooms. The rationale for this requirement is simple and straightforward. How well the completers perform directly impacts the growth and development of their P-12 students and also stands as strong testimony of the effectiveness of the EPP's teacher preparation program. As such, this standard helps enforce accountability, guides program improvement and ultimately leads to better schools.

However, implementation of this standard by EPPs is neither simple nor straightforward, nor should it be. The simplest route, and also the most popular, is conducting surveys of completers, but such a practice can be affected by poor return rate. Surveys are also subjective by nature, and results are therefore not always dependable. More importantly, surveys of completers are a linear and closed line of inquiry with little room for digging deep or for simultaneous or

consistent triangulation of data. Other possible measures that some EPPS have tried to use include beginning teacher induction/mentoring scores and (when available) P-12 students' performance scores. These have also been rife with issues. It is difficult to attribute completers' (or P-12 students') strong (or weak) performance scores to EPP's preparation of the completers. Additionally, confidentiality and student protection laws prevent EPPs from accessing P-12 student data.

Given this dilemma, we decided to give an innovative twist to the self-study of our program impact. Using a more democratic and scholarly approach, we structured our efforts as a qualitative research project where our current teacher candidates directly observed and collected data on our program completers. Our primary research goal was to determine the impact of our EPP, and our secondary goal was also to test the viability of our approach for satisfying the accreditation requirements.

Our study rests on the intersection between three important Standards for Teacher Educators of the Association of Teacher Educators (2008): Scholarship, Program Development, and Teacher Education Profession. Specifically, it demonstrates the indicators of modifying teacher education programs (Standard 5) by engaging in research and development (Standard 3) while mentoring pre-service teachers to participate in the process of improving teacher education (Standard 8). We demonstrate the explication of these standards through the rest of the paper.

Literature Review and Conceptual Framework

Our research stems from the principal objective to consider an innovative and democratic approach to teacher education (Zeichner, Payne, & Brayko, 2015). These approaches call for shaking the boundaries that structure EPP's work and to engage in a collaborative model that

pulls in diverse voices (Bavonese, Connor, Valerie, Beard, & O'wens, 2017). We accept the complexity of this effort and follow the tripartite outlook prescribed by prior research (Diez, 2010). Our analyses and determination of trends underscore the deep connections between and within clinical practices (Heafner, McIntyre, & Spooner, 2014). Finally, by engaging teacher candidates as research assistants, we were able to address the attitudes and beliefs of pre-service teachers as they affect their own learning (Nuttall, 2016; Thomas, 2014; Yeh & Santagata, 2015).

Research Question

Our primary goal was to engage in self-study of our effectiveness through qualitative research methodologies. A secondary goal was to demonstrate a new and viable method of self-study. Involving teacher candidates in research about their teacher preparation program is not a common occurrence and we wanted to determine the feasibility and the viability of this self-study practice. Specifically, our research questions were as follows:

1. Do our completers demonstrate understanding and application of our candidate learning outcomes?

2. Is it viable to engage in self-study through research with teacher candidates?

Methodology

A learner-centered model (Frye et al., 2006) was adopted for this study, with all data collection fundamentally probing the knowledge and abilities that completers actually believe they have acquired and feel competent to actually implement.

Candidate Learning Outcomes

We measured our program's impact through our candidate learning outcomes (Clouston, 2014). These outcomes operationalize our EPP's mission in clearly outlined performance

indicators and are clustered around four major domains, namely, intentional teaching, data literacy, cultural competence, and professional practice and leadership (see Appendix). Each domain has multiple indicators that are aligned to CAEP, InTASC, and our state's teacher education standards. All the courses in our programs integrate these CLOs within the course objectives; and candidate performance is measured against these CLOs in coursework and experiences. It was therefore a strong and appropriate set of outcomes to evaluate our program impact.

Program Completers

To identify the program completers for this study, we went through an extensive review process. From our list of all program completers who had graduated from our programs at least three to five years back, we verified and then selected those who were employed and working in diverse settings. From this narrowed down list, we identified completers from each of our four programs (early childhood, elementary, secondary and physical education). Everyone in this selected pool was contacted via email to participate in the study. While initially many completers agreed to participate in the study, only 4 (one each from each of our programs) were finally able to complete all aspects of the study. Most others were either unavailable or did not respond.

The demographics of the final four participants are as follows: Two identified as male and two as female, all were employed in diverse school settings and maintained continuous employment, all were teaching in the area of their certification and had graduated within the last 3 years.

Teacher Candidates/Research Assistants

The two teacher education candidates, who served as research assistants in this study, were both graduate students in a Master's in Education program that including simultaneously working towards their teaching certification. They were both from diverse backgrounds; one was majoring in early childhood and the other was in elementary education. To prepare for this study, they first completed a course on educational assessment. They received training on interview protocol, data collection methodologies, and trends analyses. They were mentored by teacher education faculty on the rigors of research protocols, confidentiality, and ethics. As research assistants, their responsibilities included conducting the two-step interviews of completers (explained below), conducting classroom observations, transcribing and coding interviews, and identifying trends. They were also responsible for collecting completed employer surveys. Both the research assistants completed a practice interview, observation and coding, prior to the start of the study.

Data

Data for this research came from three sources: Interviews of completers, classroom observations, and employer surveys. For each, the measurement of program impact was based off our EPP's candidate learning outcomes (Clouston, 2014), as explained earlier.

Interviews. We used the modified two-step interview model (Seidman, 2006). Each participant was interviewed twice, for about 30 minutes each time. The focus of the first interview was to determine completers' knowledge about the CLOs and the second interview elicited information about their application of the CLOs. A series of questions were developed to align to the four domains of the CLOs. For example, within the domain of cultural competence,

the first interview question was *What did you learn about culturally responsive teaching and family diversity during your time at EPP?* (knowledge) while a related second interview question was *How do you promote positive cross-cultural peer relationships?* (application).

Classroom Observations. After both the interviews, the completers were observed for 45 minutes in their classroom. One research assistant captured the observations with detailed notes and the other assistant scored these notes using our student teaching evaluation instrument (available at https://www.easternct.edu/clinical/_documents/student-teaching-eval-2019.pdf). This instrument measures demonstration of our CLOs using a 4-point scale.

Employer Surveys. The employer survey had two major sections, one on knowledge and the other on application. Employers were asked to rate our completers (their employees) on the extent to which they showed awareness and application of the four domains of our CLOs.

Data Analysis

Analyses of data began with transcribing interviews followed by identifying and coding key comments that aligned to the four domains of the CLOs. Comments that aligned to more than one domain were double-coded. Each interview was coded independently, first by one of the research assistants and second by the principal investigator of this study. After establishing reliability of coding, we analyzed the codes for frequency of occurrence and jointly determined trends. Mean scores for each domain in the classroom observations and the employer surveys were also calculated.

Findings

Our research questions were as follows:

Do our completers demonstrate understanding and application of our candidate learning

outcomes?

Is it viable to engage in self-study through research with teacher candidates?

To address the first research question, we used three sources of data to determine key

trends that would help inform our program revisions. These were namely, the completer

interviews, their classroom observations and survey of their employers. To address the second

research question, we included research meeting notes including post-research reflections of the

two research assistants.

Program effectiveness

Program effectiveness was determined through the knowledge and application of the four

domains of our candidate learning outcomes by our completers. From the interviews, 373

instances of demonstrations of the four domains were coded.

The following are examples from the interviews that were coded into the four domains.

Critical phrases for intentional teaching included "really targeting towards teaching certain

content skills," and "at Eastern, we get a lot of discussion of the standards and what they mean

and what they look like, and how to put them into our lesson plans and our units of study." Data

literacy was coded for sentences such as "doing all three of those important components,

collecting baseline data for students about their skill and performance, providing instruction and

adequate practice, to improve their skill, assessing the students again at the end of the unit, and

taking that information and seeing if learning has occurred." Transcripts that were coded as evidence of cultural competence included excerpts such as this one: "how things have changed and just kind of help remember that, you know, we need to understand that we need to be inclusive of all things, because at times that we weren't as a country, and it was a great historical way to look at things and how we need to be culturally responsive, and to the people that we are teaching." Professional practice and leadership were coded for transcript excerpts such as "How can I be better to instruct and facilitate my students. Even now I've been teaching for years, I'm taught to look out for new things, constantly open to the new learning to be a better teacher, seeking professional development opportunities, conversation with colleagues through our meetings, just basic discussions, I try to observe other teachers, I join committees to do walk through other schools to see how teachers do things in their classroom, how they set things up, how they teach certain things."

Figure 1 shows the distributions of these codes across the four domains. Cultural competence was the most frequently coded domain across all the program completers, with 31% of the overall codes. Intentional teaching and professional practice and leadership was evidenced with equal frequency and each accounted for about 25% of the codes. Data literacy was evidenced in 17% of the codes.

Figure I: Frequency of candidate learning outcomes in interviews
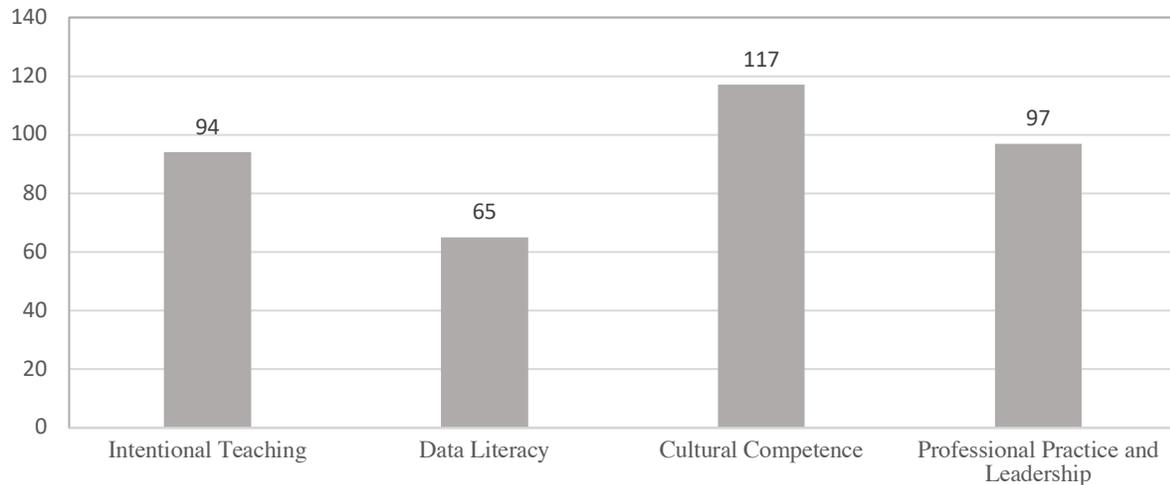
Some of the trends in our completers' demonstration of their knowledge and application of cultural competence was in their planning (*modifying classroom curriculum to fit their needs*), establishing class community (*getting to know each child, making sure there is space for shared experiences, and everyone feels safe*), communication (*believing all families care and eager for home/school connections*), and self-reflection (*identifying our own differences and biases*). Professional practice and leadership was evinced in their descriptions of reflective learning (*sharing with my co-teachers and give each other feedback*), advocacy (*joining committees*), and their excitement for continuous learning. Trends in intentional teaching related to connecting to the individual student (*you have the pedagogy and the content but it takes extra effort to create that positive relationship with a student*), applying variety of instructional strategies (*turn and shared talk, diverse learning styles*) and planning for day-to-day effectiveness (*planning my*

questioning daily, make practicing enjoyable each day). Trends in data literacy included designing assessment tasks (*designing to measure growth*), utilizing data for instructional revisions (*using evidence for growth and examples of student learning*) and strategizing differentiations (*manageable way of evaluating data and use to plan for individual children*). [Note: All italicized parenthetical statements in the previous paragraph are direct comments from the interviews.]

Interestingly, observations of classrooms (Figure 2) indicated a slightly different pattern. Cultural competence continued to rank high in classroom observations, with intentional teaching also ranking high. Completers demonstrated intentional teaching in their instructional guidance, classroom arrangements, student support and scaffolding. Cultural competence was seen in their differentiations of instructional methods. Professional practice and leadership ranked second in classroom observations and was seen most often in modeling of reflection and feedback. What was most surprising was the lack of explicit evidence of data literacy. It could be a function of the time of observations or the fact that classroom observations focused on what the completers said or did, and not their planning. While completers did share applications of data literacy in the interviews, it is to be noted that this domain was also the least noted in the interviews.

Figure 2: Mean score of candidate learning outcomes in classroom observations
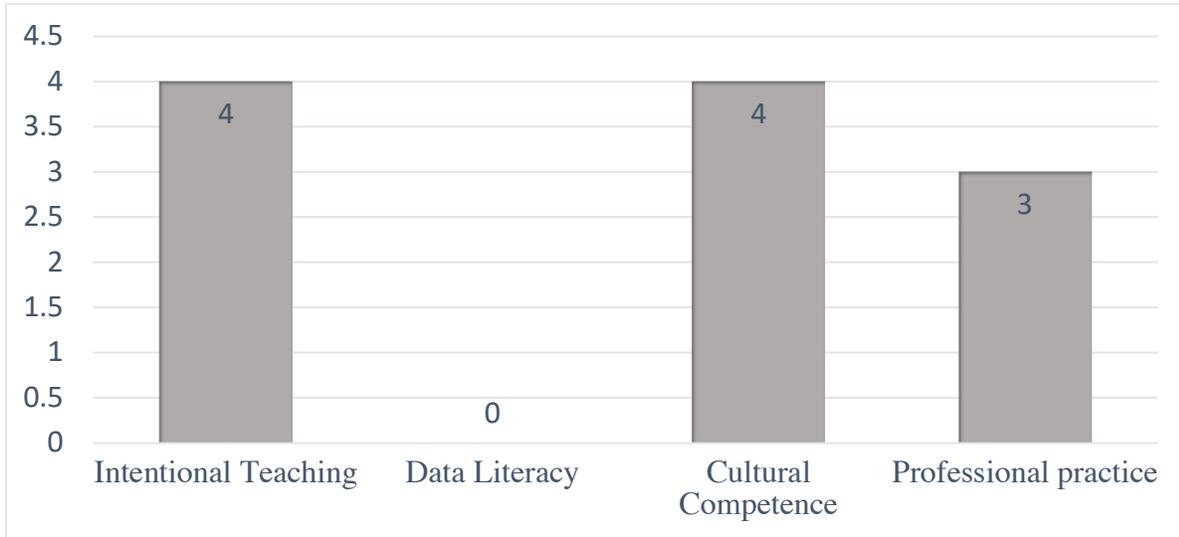
Examining the employer data (Figure 3) supports the previous findings on intentional teaching, and professional practice and leadership. However, employers ranked our completers high in data literacy also. The employers stated our completers needed more support connecting to diverse families.

Figure 3: Mean scores of candidate learning outcomes in employer surveys
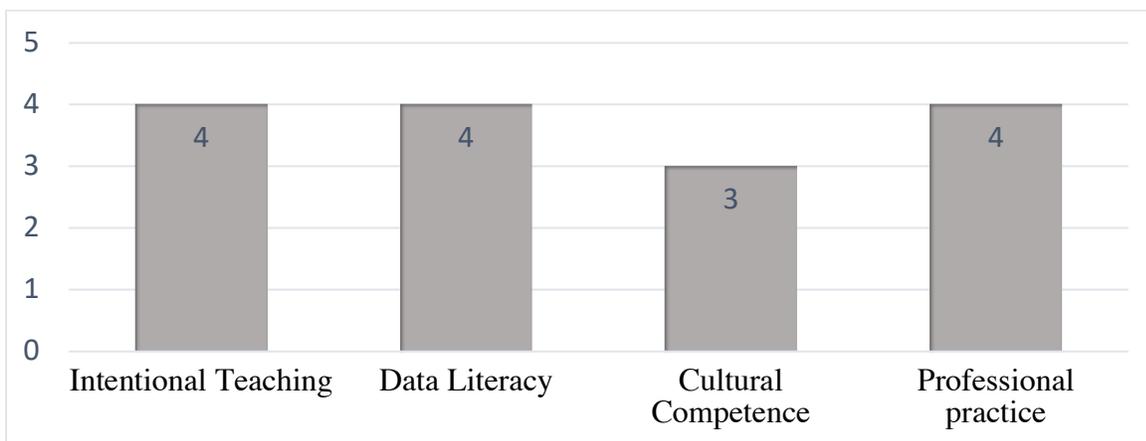
Overall findings across all data sources affirms that our candidates demonstrate knowledge and application of all four domains, with intentional teaching, and professional

practice and leadership being their consistent strengths. They are strong in their self-awareness of cultural competence and could use some support to demonstrate and utilize data literacy more explicitly.

Self-study with teacher candidates

Given that we were able to successfully complete the study and thereby demonstrate validity, we believe that self-study can be conducted through research with teacher candidates. A limitation of our study was the small number of completers. This was partly due to scheduling conflicts. Our completers, themselves busy in-service teachers, could not always find the time at the end of a long working day to devote to our research. Our research assistants, who were busy as full-time teacher candidates, needed to fit in the research commitments within their own course and clinical schedules. This limitation does give us pause to confirm the feasibility of research with teacher candidates as an on-going method for evaluating our program's impact on completers.

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Discussion

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Educator preparation programs are continually seeking innovative ways to conduct their self-study. Our research method was valid as a measure of program effectiveness. It allowed for direct input from our completers and enabled us to determine the extent to which our candidate learning outcomes were implemented in the P-12 classrooms. The methodology demonstrated a method for diverse voices to be heard and acknowledged (Bavonese et al., 2017) which also resonates with the call for democratizing teacher education (Zeichner et al., 2015). First and foremost, it included the perspectives of the two teacher candidates who worked as the research assistants. These candidates are of diverse backgrounds and by engaging in the study as both

interviewers and as participant observers in the classroom, they brought their unique perspectives into the discussion. Second, the completers had the opportunity through the two-step interview process to direct the conversation on their own effectiveness. They were able to demonstrate what helped formulate their thinking but also provide directions for program revisions (Frye et al., 2006). Finally, for the teacher educators who served as principal investigators in the study and for the entire EPP, this research project transformed existing practices by democratizing program development. However, without a large-scale implementation, we cannot confirm the feasibility of this method as an ongoing option for EPPs.

Engaging in the research study opened an avenue of growth for the two teacher candidates who worked as our research assistants. It enhanced their scholarship by helping them realize the value of active research, particularly the need for triangulation of conclusions and maintaining rigor during qualitative data analysis (Diez, 2010). During the post-study debriefing sessions, they commented readily and extensively on the value of seeing the implementation of their theoretical (coursework) learning (Heafner, 2014). Both candidates commented feeling overwhelmed by the layers of consideration that went into lesson planning and implementation (Yeh & Santagata, 2015), and also the pressures of teaching while being watched. Still, they both felt more prepared for their clinical and student teaching experiences (Thomas, 2014).

The study surfaced for us key areas for improvement, including the need for explicit emphasis on data literacy. Interestingly, professional practice and leadership (a domain that is not explicitly taught in our coursework) was acknowledged by the completers, the employers and even by the research assistant teacher candidates as areas of strengths. Our subtle infusion of this domain across the courses and clinical experiences has clearly been effective. It also underscored

the value of research in teacher preparation. Engaging in the research study significantly

enhanced the two teacher candidates' abilities to view the classroom holistically, to reflect on

their own teaching and to understand the value of continual improvement. Having all teacher

candidates engage in active research is a worthy pursuit.

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Appendix

E̲astern Connecticut State University

Eastern's Educator Preparation Programs' (EPP) Candidate Learning Outcomes (CLO)

Domain I: Intentional Teaching

We believe that intentional teaching and its important corollary intentional learning necessitate

viewing learning as the pre-determined and actively sought after goal of education.

1. Candidates demonstrate a positive and reflective disposition towards intentional planning

    and teaching practices that are appropriate for diverse learners. *CAEP 1, 2,*

    Diversity; InTASC 1, 2, 8; CCCT 1, 4

2. Candidates demonstrate the ability to identify discipline-specific content knowledge and

    skills, develop and implement evidence-based, inclusive instructional practices that

    engage all students and improve student achievement. *CAEP 1, 4, Diversity; InTASC 2, 4,*

    5, 8; CCCT 1, 2

3. Candidates develop effective classroom environments that nurture collaborative

    learning and self-efficacy. *CAEP 1, 4; InTASC 3, 5; CCCT 1*

4. Candidates identify and utilize educational technology and other digital resources to

    enhance the learning experience of all students and to transform their own instructional

    practices. *CAEP 4, 3, 5, Technology; InTASC 2, 3, 9; CCCT 1*

5. Candidates develop and integrate learning experiences that require students' use

    of critical thinking skills, problem solving, and diverse forms of communication. *CAEP*

    1; InTASC 4, 5; CCCT 1

Domain II: Data Literacy

We believe that data literacy offers a dedicated pathway towards understanding the abilities and

needs of all students and offers a means to improve students' growth and development

across all curricular areas.

1.   Candidates use and/or adapt/design qualitative and quantitative assessments that directly

align with the learning goals of content in the discipline. *CAEP 1, 4; InTASC 6, 7;*

CCCT 3

2.   Candidates organize, analyze, interpret and graphically display data on

student growth. *CAEP 1, Technology; InTASC 1, 5; CCCT 3*

3.   Candidates triangulate data from multiple sources to determine student learning and

guide planning and teaching. *CAEP 4, InTASC 6, 7, 8; CCCT 1, 3*

4.   Candidates use both classroom-wide, and individual student data to understand learning

and development and to inform and adjust instruction. *CAEP 4; InTASC 7, 8; CCCT 1, 2,*

3

5.   Candidates analyze student data—including pre- and post-instruction assessments—

to determine the impact of their own teaching. *CAEP 4; InTASC 9, 1; CCCT 3*

6.   Candidates demonstrate reflective and interpersonal abilities to become an active member

of a data team. *CAEP 2; InTASC 9, 10; CCCT 4*

7.   Candidates demonstrate a positive disposition toward data collection and articulate its

importance in teaching and learning. *CAEP 1, 2; INTAC 9; CCCT 3, 4*

Domain III: Cultural Competence

We believe that cultural competence includes both understanding and appreciating cultural,
learner, and linguistic diversity but also practicing a pedagogy that views school-family
relationships as partnerships in learning.

1.	Candidates demonstrate deep caring, commitment, and empathy for children and families
of diverse cultural and socioeconomic backgrounds. *CAEP 2, 3, Diversity; InTASC 1, 2, 9; CCCT 1, 4*

2.	Candidates articulate the positive influences of culture on students' learning and
development. *CAEP 1, 2, Diversity; InTASC 1, 2; CCCT 2*

3.	Candidates demonstrate culturally responsive teaching, by incorporating the strengths,
interests, histories, and needs of families of diverse cultures in their planning, teaching,
and assessment. *CAEP 1, 2, Diversity; InTASC 2, 7, 8; CCCT 2, 3*

4.	Candidates adapt teaching and learning experiences to the linguistic, social, and learning
styles and needs of children of diverse backgrounds. *CAEP 1, 2, 4, Diversity; InTASC 1, 2, 8; CCCT 2, 3*

5.	Candidates honor all family languages and understand the importance of preserving
language as a fundamental part of culture. *CAEP 1, 2, Diversity; InTASC 9, 10; CCCT 4*

6.	Candidates proactively promote positive cross-cultural peer relationships and openly and
directly address instances of bias as they arise in the classroom. *CAEP 1, 2, Diversity; InTASC 9, 3, 5; CCCT 1, 4*

7.	Candidates apply their knowledge of culture in their communication with and
involvement of families in school. *CAEP 2, Diversity; InTASC 9, 10 CCCT 1, 4*

8.   Candidates monitor and address their own cultural biases and recognize and articulate the influences of their own families and cultures on their beliefs and professional practices. *CAEP 5, 3, Diversity; InTASC 9; CCCT 4*

Domain IV: Professional Practice and Leadership

We believe that across all coursework and clinical practices, our candidates must demonstrate compassion and dedication to all students that is earnest, professional and mindful.

1.   Candidates demonstrate an ongoing commitment to their professional growth by engaging in continuous meaningful learning. *CAEP 5; InTASC 9, 10; CCCT 4*

2.   Candidates continually examine their ability to design and deliver effective instruction by using feedback and evidence from students, peers and mentors to revise instructional practices and to improve effectiveness. *CAEP 5; InTASC 9; CCCT 2, 3*

3.   Candidates collaborate with their peers, school personnel, families and community members to contribute to effective school changes. *CAEP 2, 5; InTASC 10; CCCT 4*

4.   Candidates seek leadership roles to advocate for the well being of all learners and to advance the profession. *CAEP 5, 1; InTASC 1; CCCT*