

The mathematics teacher educator's reflection on edTPA:
The basics and the complexity of Georgia's implementation

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Beginning in fall 2015, Georgia will require that all teacher candidates pass the edTPA, a performance-based assessment, as a requirement for initial certification. With the potential to impact teacher preparation programs in a profound way, the questions and issues related to the implementation of edTPA merit some critical reflection. In this article, we introduce the brief history of the instrument and review the basics of edTPA with a particular interest in middle grades mathematics. Furthermore, drawing upon our experience with edTPA during a pilot program and the extensive knowledge base of edTPA rubrics and scoring process, we present issues related to the implementation by examining a list of focus questions relevant to different stakeholders in teacher preparation programs. It is hoped that teacher educators have a meaningful opportunity to examine the new teacher performance assessment and inform their teaching policy and practice.

The Basics

The edTPA portfolio comprises three tasks focused on planning, instruction, and assessment. Each task is centered on five essential questions. The following table shows each task for middle grades mathematics teacher candidates and accompanying essential questions in our own words.

Task	Essential Questions*
Planning	<ul style="list-style-type: none"> • How do the lessons build on each other and demonstrate a clear connection to mathematical procedures, key concepts, reasoning and problem-solving? • How do candidates differentiate their instruction to facilitate learning for all including English language learners and special education students while considering adolescent behaviors? • How do candidates demonstrate culturally responsive pedagogy while addressing students' prior knowledge and various student backgrounds? • How do candidates implement academic language (i.e., vocabulary/symbols, discourse, syntax, mathematical precision) in achieving appropriate language functions (e.g., explain, describe, analyze)? • How do candidates use various methods to assess student learning, and how the assessments evaluate students' procedural fluency, conceptual understanding, mathematical reasoning and problem-solving?
Instruction	<ul style="list-style-type: none"> • How do candidates demonstrate a positive learning environment when they interact with middle grades learners in the classroom? • How do candidates make use of content and pedagogy so that students can remain engaged in the learning of procedures, concepts, mathematical reasoning, and problem-solving? • How do candidates demonstrate student-centered learning approaches, especially with effective teacher questioning to elicit meaningful and deep student responses and performance? • How do candidates use and connect a variety of mathematical representations (graphs, manipulatives, tables, equations, etc.) to enhance students' understanding? • How do candidates propose research-based changes to improve instruction as demonstrated in the video clips while addressing the needs of the class as a whole and the individual students in the class?

Assessment	<ul style="list-style-type: none"> • How do candidates analyze assessment data and identify the patterns of (mis)understandings? • How do candidates provide quality feedback (related to the learning objectives) on student work? • How do candidates instruct students on using feedback to improve their work? • How do candidates explain the ways they plan for academic language materialize in implementation? • How do candidates propose ways to better support student learning after they analyze assessment data?
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* The essential questions are paraphrased from the edTPA handbook. The edTPA trademarks are owned by The Board of Trustees of the Leland Stanford Junior University.

Overall, the planning task examines how candidates write lesson plans and articulate their planning. A special focus is on the effective alignment of learning objectives, use of academic language, and teaching the students to learn procedures, concepts, mathematical reasoning, and problem-solving. The instruction task gives candidates an opportunity to videotape some segments of their lessons in order to demonstrate effective teacher questioning, student-centered instruction, and a positive learning environment. The task also includes analyzing teaching effectiveness. Lastly, the assessment task asks candidates to demonstrate their ability to analyze student assessment data, reflect on their instruction, and present ideas to improve their teaching, which is not limited to re-teaching, pacing, or classroom management. The candidate submits written documents, video clips, and written commentaries to external reviewers for assessment.

Brief History

Formerly known as Teacher Performance Assessment (TPA), edTPA was developed by researchers and teacher educators of the Stanford Center for Assessment, Learning, and Equity (SCALE) at Stanford University in collaboration with hundreds of teachers and teacher educators. SCALE is responsible for the content of the assessment and designs the scoring training. As edTPA rolled out nationally, SCALE partnered with Pearson for operational service, including technology and logistics. Since 2009, American Association for Colleges of Teacher Education (AACTE) has recently teamed with edTPA to share information and support implementation by its member institutions of higher education. So far, teacher preparation programs in 29 states and the District of Columbia have tried edTPA in evaluating teacher candidates' classroom teaching. Eight states have policy or pending policy for its consequential use.

Some veteran teacher educators in Georgia have compared the edTPA to Georgia's Teacher Performance Assessment Instruments (TPAI), a performance-based assessment for new teachers that was discontinued in 1990. Others point out similarities between the edTPA and the National Board Certification process; both are multiple-measure, externally reviewed performance-based assessments of teaching skills. Although the edTPA may well be another initiative without staying power, it has been carefully designed based on 25 years of experience with performance-based assessments such as the National Board for Professional Teaching Standards (NBPTS), the Interstate Teacher Assessment and Support Consortium (InTASC) Standards portfolio, and the Performance Assessment for California Teachers (PACT).

Most states licensure assessments are primarily multiple-choice tests of basic pedagogical and content knowledge, which have not been successful in predicting effectiveness in the classroom teaching (Ferguson & Brown, 2000). Over time, policy makers have acknowledged the need for using multiple data sources to assess teachers' teaching knowledge and skills, and edTPA seems to fit nicely as an instrument to provide evaluative quantitative data (i.e., edTPA scores) on essential teaching tasks. To extend the discussion further, Darling-Hammond (2010) has called for a systematic way to achieve a continuum of teacher performance assessment so that there exists a valid and reliable instrument to (1) evaluate beginning teachers' readiness, (2) make a systematic collection of evidence about teachers following induction, prior to tenure, and (3) assess those after tenure on the accomplishment as an experienced teacher possibly with leadership roles. In this way, the edTPA has the potential to be one of the first steps toward the systematic way to evaluate and recognize excellent teaching.

There is agreement in the field that performance-based assessment tools can be instrumental in teacher quality initiatives since assessment data can be useful in the following ways (Darling-Hammond, 2010), to list a few:

- Tracking progress of individual teacher candidates or teacher preparation programs
- Informing data-driven decisions on the accreditation process or recognizing effective teacher preparation providers
- Facilitating teacher mobility across states with access to the national data of teacher competency scores
- Linking teacher preparation programs, teacher quality, and student academic achievement

The validity evidence for performance-based teaching assessment tools – such as statistical model of teachers' average effects on their students' academic achievement – supports the use of performance scores to measure teaching effectiveness. This view has necessitated research on the validity, reliability, and the relationship between the teacher candidates' assessment scores and students' achievement. Based on two years of data and three years of implementation experiences,

Pecheone and Chung (2006) reported that the Performance Assessment for California Teachers (PACT) could be used as a valid measure of individual teacher competence to earn teacher licensure. To delve deeper, Darling-Hammond, Newton, and Wei (2013) examined scores of teacher candidates ($n = 1870$) on the PACT in 2006-2008. Their study found that teacher candidates' PACT scores were significant predictors of their later teaching effectiveness as demonstrated by their students' academic achievement gains in both English language arts and mathematics. The study also used surveys ($n = 305$) completed by teacher candidates in 2005 to find that the candidates thought they gained knowledge and skills for teaching while completing the PACT process.

Few studies exist on edTPA perhaps because edTPA is a revised version of the PACT instrument, and it will take several years for researchers to study the revised assessment. Table 1 helps illustrate how edTPA evolved from PACT. Nonetheless, before edTPA becomes fully accepted nationally for evaluating beginning teachers' teaching skills, it is necessary that further research on edTPA be conducted with more data gathered from teacher preparation providers.

Table 1. Comparison of Tasks for PACT and edTPA

PACT	edTPA
1. Context for learning	1. Planning (PACT 1 and PACT 2)
2. Planning instruction and assessment	
3. Instructing students and supporting learning	2. Instruction (PACT 3 and PACT 5)
4. Assessing student learning	3. Assessment (PACT 4 and PACT 5)
5. Reflecting on teaching	

Related issues

Piloting the edTPA with our teacher candidates has raised a plethora of questions regarding the implementation of the new assessment system. Each of the participants and stakeholders in the process will have issues to consider.

Stake-holder	Questions
Policy-makers and administrators of teacher preparation programs	<ul style="list-style-type: none"> • Who is participating in edTPA? • How are the scores reported? • How are the criterion discrepancy (cut-off) scores decided, if any? • Who pays edTPA cost and how much? • How are edTPA data used for accreditation? • Who is responsible for supporting long-term sustainability of edTPA? • Which programs are leading in producing candidates with high scores? • How can teacher preparation programs ensure confidentiality of key edTPA documents is maintained?
Teacher educators	<ul style="list-style-type: none"> • How do teacher educators help candidates prepare for the assessment? • Will edTPA data be used to link teacher candidates' performance to teacher educators?
Teacher candidates	<ul style="list-style-type: none"> • Who scores edTPA? • Which content areas are available for edTPA? • Will re-taking be allowed? • What happens when candidates fail? • Can edTPA score be used in applying for jobs?
Practicing teachers	<ul style="list-style-type: none"> • Will edTPA eventually be used to assess practicing teachers' teaching? • How can mentor teachers help coach teacher candidates on the skills needed for success on edTPA? How do we ensure that the appropriate amount of coaching is provided to the candidate? (The candidate must present his or her own work.)

Clinical supervisors	<ul style="list-style-type: none"> • What is the supervisor's role in the implementation of edTPA? • Does edTPA replace supervisors' observations in the field? • Will edTPA data be used to evaluate supervisor's effectiveness? • How do we ensure that the appropriate amount of coaching is provided to the candidate? (The candidate must present his or her own work.)
Researchers	<ul style="list-style-type: none"> • Is the edTPA instrument valid and reliable? • How the scores relate to student achievement? • Do scores improve with intervention or meaningful support? • How do teacher preparation programs respond to edTPA data? • To what extent does the instrument address (or marginalize) the knowledge and skills to conduct a complex task of teaching? • How does the edTPA address beginning teachers' ability to manage the classroom? • How does the edTPA measure candidates' ability to conduct modification and accommodation for special education students? • Is the instrument fair? <ul style="list-style-type: none"> ○ How does the edTPA prevent scorers' bias? ○ How does the edTPA ensure that candidates are evaluated without bias regardless of the levels of academic ability? • How informative is edTPA data concerning beginning teachers' ability to teach?

Next Steps for Teacher Educator Programs

Although teacher education programs and the school systems served by each are distinctive, several steps will be needed for effective edTPA implementation at each institution. The learning outcomes of the edTPA are not unfamiliar to those of most initial certification programs, but effective implementation will require an understanding of the similarities and integration into each program's assessment system. Effective implementation will depend on professional development for faculty and administration, curriculum review and alignment, and provision of resources.

To effectively implement edTPA, the initial step is to ensure faculty and key administrators thoroughly understand what is needed for their teacher candidates to be successful. This professional development may include encouraging some to become edTPA scorers (see <http://edtpa.aacte.org/get-involved>); making faculty aware of online resources, such as AACTE's Online Community; encouraging participation at edTPA conferences (<http://edtpa.aacte.org/events>); and providing professional development at the campus level. A number of teacher education faculty will want to become more familiar with the concept of academic language. Faculty will also find useful the process of reviewing sample work in small groups so that they deepen their understanding of the rubrics and build a shared understanding within programs. Those who supervise teacher candidates in the field and P-12 mentor teachers should also be included, especially if on-campus professional development is provided. The implementation of edTPA may motivate programs to strengthen school partnerships and develop a cadre of mentor teachers who can support teacher candidates through the edTPA process.

Once faculty and administrators have developed an understanding of edTPA, a review of each initial certification program's curriculum is necessary to ensure teacher candidates are prepared for success on the edTPA starting with the first course in the program. Program faculty should review each program and current assessments for potential ways to increase the emphasis on academic language and reflective commentary, for example. Each program's current assessment system can also be reviewed for assessments that may be very similar to edTPA tasks so that redundancies can be removed. Discussions between coordinators of different initial certification programs will strengthen the implementation as coordinators share ideas and collaborate on program and assessment review.

The need for institutional support and resources should be considered. Each teacher candidate will need access to video cameras and may need technical support to ensure they capture good quality video and audio clips and are able to upload those clips successfully. Some of the major online portfolio systems (e.g., Chalk & Wire) provide support for the use of edTPA. Institutions will want to review their current assessment system technologies or explore changing to one that does support edTPA.

The Uncharted Path of edTPA

The variety of questions raised above demonstrates excitement and challenges involved in the implementation of edTPA. A number of benefits may be provided by edTPA, but those must be balanced by a number of concerns that should be carefully considered. Rather than becoming cynical, those of us who have seen performance-based initiatives (e.g., TPAI, National Board Certification) in Georgia emphasized and then phased out should bring historical knowledge to this implementation to ensure we do not make the errors of the past. Concerns about the danger of using edTPA scores to rank teacher candidates or teacher preparation programs mean that mathematics teacher educators should become more involved in the decision-making process to the extent that we can. Although many have doubts that teaching is too important and complex to be easily assessed, the edTPA may be the best designed assessment the field has yet seen.

If the edTPA is an effective predictive indicator of teacher effectiveness, Georgia's children will ultimately benefit. Georgia's teacher education programs will have nationally recognized data-based evidence to show our value. Advocates of the edTPA are excited that this instrument has the potential to bring some clear feedback about the effective design and delivery of teacher preparation programs and opens rich new areas of educational research.

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