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The Impact of U.S. Pre-Service Teachers' High-Stakes, Accountability Era Schooling Experiences on Their Future Teaching Practices

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Abstract
The current NCLB/ESSA-generation of pre-service teachers in the U.S. received their K-12 schooling during the standardized test-focused education accountability era. There is little research exploring how they perceive the disconnect between their K-12 teacher-centered, test-focused school experiences and the engaging, student-centered philosophy promoted in many colleges of education. As such, this study was conducted in a public university in the Rocky Mountain Region to explore perceptions of pre-service teachers concerning the dichotomy between their K-12 test-focused experiences and their developing student-centered teaching philosophy. Utilizing a mixed method design, this study employed a survey (N=210) in which participants reported that they were influenced by K-12 instruction focused on standardized testing success. Additionally, qualitative data, including student oral and written reflections (N=52) exemplified PSTs' implicit apprehension concerning their ability to prepare students for standardized testing success while maintaining a desire to implement engaging student-centered learning experiences. The significance of this study lies in the establishment of a foundational dataset concerning the teaching disposition of NCLB/ESSA-generation PSTs.

Key Words: Pre-service teachers, standardized testing, student engagement, educational accountability

Introduction

Most of the pre-service teachers (PSTs) in today's colleges of education in the U.S. received their entire K-12 schooling during the test-based education accountability era of No-Child Left Behind policies including the Every Student Succeeds Act (from 2002 to present). Referred to in this article as the NCLB/ESSA-Generation, much of the school experiences of these students occurred in teacher-centered settings where they were expected to absorb factual knowledge delivered through teacher lecture and textbook reading, and then prove their knowledge on standardized tests (Fairtest, 2007; Minter, 2011). Early career teachers tend to teach the way they were taught

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(Hanford, 2017). Since NCLB/ESSA-generation PSTs learned in classrooms with a reliance on teacher-centered, textbook and worksheet dominated, one-size-fits-all, test-prep instruction and "proved" their knowledge on standardized tests, they may enter the college of education thinking this is the best way for their future students to learn and be assessed (Achinstein & Ogawa, 2006). Groen (2012) aptly asserts that, "As NCLB [the current education accountability era] continues to impact American education and educational policy and reshape America's schools, these pedagogical and curriculum changes will define how the rising generation views schooling and curriculum" (p. 12).

Many teacher educators believe that PSTs "need to have an awareness of the impact of standardized testing on contemporary classrooms as well as be armed with some practical strategies that negate the negative impacts these assessments can have on classroom instruction" (Hewson & Poulsen, 2013, p. 148). Ultimately, however, teacher educators may confuse PSTs as they contradict their lived K-12 experiences by promoting the effectiveness of engaging student-centered teaching practices and by highlighting many of the negatives associated with instruction focused on standardized testing success. Engaging and experiential student-centered instruction contrasts sharply with PSTs' teacher-centered K-12 experiences in NCLB/ESSA accountability-focused public schools as well as the teacher-centered instruction they often witness in their practicum and student-teaching experiences.

Little research has been conducted concerning how PSTs' K-12 experiences with teacher-centered test-focused instruction may influence their future teaching practices. Similarly, there is little research concerning how teacher educators can accommodate the impact of PSTs' K-12 experiences while positively influencing their future teaching practices. In this study, we address four research questions:

(1) How often do PSTs report taking standardized tests during their K-12 schooling?

(2) What levels of motivation and stress do PSTs report experiencing while taking standardized tests during their K-12 schooling?

(3) Do PSTs' K-12 experiences with teacher-centered instruction focused on standardized testing (elementary and secondary) influence their preferred future teaching practices?

(4) How do PSTs accommodate the disconnect between their K-12 experiences with teacher-centered, test-prep instruction and the more engaging and experiential student-centered instruction emphasized in their teacher preparation?

Literature Review

Standardized test-based accountability era

The education accountability era of the U.S. was launched in 2002 with the adoption of the No Child Left Behind Act (NCLB), and continues today with the Every Student Succeeds Act (ESSA) (Amrein & Berliner, 2002; U.S. Department of Education, 2001, 2016; McGill, 2015). School and teacher effectiveness and student learning of the grade-level reading and math standards is predominantly measured by standardized tests which are often considered to be the only legitimate evidence of student achievement (Berliner & Glass, 2014; Goodlad, et al., 2004). Often prompted by low standardized test scores, public school educators are the recipients of public criticism regarding teaching and learning effectiveness (Kuhn, 2014). Public school teachers are exposed to powerful commentaries regarding the negative impact of this intense focus on test-based accountability as evidenced below:

> The test obsession is making public schools . . . into unhappy places. Benchmark, practice, field, and diagnostic exams are raising the total number of standardized tests up to thirty-three per year in some districts. Physical education, art, foreign languages, and other vital subjects are going on the block in favor of more drilling on core tested subjects. In one Florida high school a student reported that her brand-new computer lab was in use 124 days out of the 180-day school year for testing and test prep. (Kamenetz, 2015, p. 7)

Students across the U.S. may spend as much as 33 days or about 1/6 of the school year testing and more time prepping for that testing, with unbounded emphasis on core tested subjects (reading, math). Erskine (2014) contends that the current focus on standardized testing as the primary indicator of successful teaching and learning changes the way teachers teach. Instruction is mainly delivered in a teacher-centered, lecture format to assure efficient coverage of information that will be tested. This style of teaching, Erskine asserts, diminishes students' curiosity, creativity, and motivation for learning. Untested subjects including history, geography, economics, political science, current events, science, art, music, physical education, foreign languages, and much more have been de-emphasized or eliminated to make more time for teacher-centered instruction on reading and math standards to prepare students for standardized testing success (Berliner, 2011; Blazer, 2011; Caplan & Igel, 2015; Mertler, 2011; Pettett, 2012).

Although the importance of teaching higher-order thinking skills is a mantra heard by many education experts, less and less is being done in schools to help students develop these critical thinking skills (Collins, 2014). Research indicates that experiential, hands-on, in-context learning experiences are more engaging and motivating for students and effectively promote critical thinking and deep level conceptual un-

derstanding (Ives & Obenchain, 2006). These more effective, yet more time consuming, student-centered school experiences (subject integrated thematic units, project/ problem-based experiences, role-play simulations, cooperative/ collaborative learning, interactive discussions, hands-on activities, field trips, etc.), have been minimalized to make time for more teacher-centered test-prep reading and math instruction (Archinstein & Ogawa, 2006; Cawelti, 2006). Currently, some U.S. elementary schools are being built without playgrounds, as recess takes away what is deemed necessary instruction time to prepare the students for the standardized test (Bossenmeyer, 2005; Caplan & Igel, 2015).

The substantial focus on raising reading and math standardized test scores, accompanied by relatively high-stakes consequences for schools and teachers not meeting the identified proficiency goals, has influenced the adoption of Guaranteed and Viable Curriculums (GVCs), particularly in reading and math. In GVCs the teacher follows the one-lesson-a-day script with fidelity (exactly as written) and delivers each segment of the lesson within the mandated time frame (Collins, 2014). These test-prep curriculums are delivered in a time-efficient manner emphasizing teacher lecture, drill and rote memorization, and worksheet completion (Minter, 2011). With these GVCs, there is no time for 'teachable moments' - for students to share connections with or ask questions about the content of the lessons. Differentiation to address the unique learning needs of each student is negated when one-size-fits-all GVCs expect all students to learn the same things, in the same way, at the same time, and at the same pace. Student engagement in such lessons is often defined as all the students parroting back the one right answer in unison when cued by the teacher (Ives & Obenchain, 2006). Schools and teachers are assured that, through the precise use of these curriculums, all knowledge necessary to perform proficiently on the annual high-stakes standardized test will be effectively learned (Vartuli & Rohs, 2009).

Another unintended consequence of this intense focus on test-based accountability is the rise in student apathy (Tita, 2010). As the emphasis is taken off the student and developmentally inappropriate ways of teaching are implemented, students are responding by turning off to school and, ultimately, losing their intrinsic love of learning (Bossenmeyer, 2005). Researchers assert that nearly 50% of contemporary students are disengaged in school and have lost their intrinsic motivation for school-based learning (Blad, 2014; Wang & Holcombe, 2010). Increasingly, teachers rely on extrinsic rewards and punishments to coerce students to stay on task and behave during the bland and joyless, fact-based instruction designed to prepare for the looming high-stakes standardized test (Dee & Jacob, 2011; Mora, 2011; Moulton, 2008; Powell, et al., 2009; Washor & Mojkowski, 2014).

The influence of K-12 experiences on pre-service teachers

The fact that prior experiences influence present and future dispositions and performance is well documented, particularly in literature on PSTs in subject areas such as science (Özdilek & Sevgu, 2010), math (Somayajulu, 2012), agriculture education (Wells, et al., 2013), early childhood education (Chang-Kredl & Kingsley, 2014), and English as a second language (ESL) (Aoulou, 2011). As Aoulou (2011) asserts, the K-12 schooling experiences of PSTs "strongly influenced . . . professional dispositions in important ways" (p. 236). Chang-Kredl and Kingsley (2014) explain that PSTs' teaching identities are developed and shaped through "prior-experiences (i.e., memories of one's unique life history)" (p. 28). The consistent and predominant influence of many current PSTs' K-12 teacher-centered test-prep experiences is analogous to *The fish is the last to discover water*. The *fish* represent the NCLB/ESSA-generation PSTs targeted in this study who received their K-12 schooling from 2002 to 2018 in a largely teacher-centered, test-prep environment (*the water*). Most likely, these PSTs never questioned (*discovered the truth about*) the negative impact of this pressurized test-prep environment. Presumably, these PSTs enter teacher education programs without realizing the serious influence their K-12 experiences focused on standardized testing success through teacher-centered test-prep instruction could have on their future teaching practices (Eisenhardt, Besnoy, & Steele, 2012). In the end, these PSTs are likely to defend the necessity of teaching their future students in similar teacher-centered, test-prep environments.

We argue that assisting PSTs in *rediscovering water* in their teacher preparation programs is urgent. Experiencing a radical role change - from K-12 students to college of education PSTs - may create confusion for PSTs as they are introduced to the negative influences of instruction focused on standardized testing success and exposed to a largely unfamiliar student-centered teaching philosophy (Corcorana &Tormey, 2012; Dunn & Dunn, 1979). By establishing a positive, supportive, trusting, and safe learning community, teacher educators can help the PSTs navigate this confusion (Brackett, et al., 2010).

Two conflicting definitions of academic accountability

Brown and Goldstein (2013) explain that academic accountability can have two conflicting definitions. These are:

> 1. Progressive/Developmental Accountability – An accountability system where the unique and differing needs of students are taken into consideration. Teachers in this system promote continuous academic growth through engaging and experiential student-centered instruction that supports each student's developmental readiness to learn, learning style, and learning pace.
> 2. Mastery-Based Accountability – An accountability system where

> the teacher is solely accountable for student grade-level "mastery of the predetermined, mandated content standards" (Brown & Goldstein, 2013, p. 2). Mastery of these standards is thought to be proved through standardized test scores.

Since the latter is currently the dominantly accepted discourse on teacher accountability, PSTs may feel fearful about their future teaching success. They are likely to question their ability to implement engaging, experiential student-centered instruction and assure that their students achieve proficient standardized test scores. It is, therefore, timely to investigate how PSTs have carried these antecedent beliefs into the present and how they hope to keep the love of learning alive for their future students while assuring standardized testing success.

Method

This study employs mixed methods research aimed at integrating quantitative and qualitative data to generate a cohesive interpretation of the topic (Creswell & Creswell, 2018). The selection of mixed methods research is appropriate because quantitative data is more appropriate for some aspects of the study while qualitative data is more supportive for other aspects. Ultimately, the quantitative and qualitative data are integrated to form a comprehensive understanding of this research topic.

Quantitative data is useful in knowing the quantity of current PSTs' K-12 standardized test-based experiences to justify the assumption that they received the bulk of their schooling in test-based accountability environments. It is also necessary to obtain some quantitative data concerning the motivation and stress these PSTs experienced during standardized testing during their K-12 years. Moreover, it is desirable to acquire some quantitative data that acknowledges PSTs' beliefs on whether standardized tests are effective and valuable in measuring subject-based knowledge and the level of concern they have regarding their ability to teach for standardized testing success.

Among several options available in the scope of mixed methods research, the researchers adopted a modified version of "concurrent . . . mixed methods design . . . [where] both the quantitative and qualitative data are collected at the [similar] time. The conduct of the study is informed by . . . [research questions] and data are integrated during the interpretation phase" (Kroll & Neri, 2009, p. 45). Qualitative data were collected throughout the spring of 2018 while quantitative data were collected in the early fall of 2018. Inspired by Tashakkori and Teddlie's (2008) mixed methods integrative framework, researchers separately analyzed both data sets, then shared their finding in the late fall of 2018 and continued to have ongoing discussions about convergent interpretations of the quantitative and qualitative findings until the summer and fall of 2019. This quantitative/qualitative integrated interpretation makes a strong case for the dispositions PSTs are likely to carry into their future teaching.

Quantitative data (the survey)

Survey data were collected from PSTs (N=210) at a land grant university in the Rocky Mountain Region. The survey participants were predominantly White (91.9%) and female (71%). Their academic standings (sophomore, junior, senior) varied with 56% being elementary education majors and the rest being secondary education majors. 58% of the survey participants received their K-12 education in the state where they attended this college of education, 31% were from other states, and 11% received their K-12 education in both their home state and other states.

The researchers contacted instructors who taught education foundation courses to obtain permission to visit their classrooms. The purpose of the study was explained to these PSTs, and they were assured that taking this survey was voluntary. It took 10-18 minutes for the PSTs to complete the survey. The survey, using a 5-point Likert scale, included questions concerning these PSTs' K-12 experiences with, as well as current perceptions of, standardized testing and test-prep instruction. Items on the survey were presented in three categories drawn from our review of the literature regarding the impact of their K-12 experiences where instruction was focused on standardized testing success. Category 1 focused on the number of standardized tests taken during K-12 (5 items); Category II focused on K-12 experiences including motivation and stress related to standardized testing and test-prep instruction (9 items), and Category III focused on perceptions concerning the alignment of student-centered instruction with standardized testing success (4 items). The Cronbach Alpha reliability of items in Part III ranged from .80 to .94. The quantitative findings of this study are reported with both descriptive and inferential statistics.

Qualitative data

Participants from the same land grant university were PSTs (N=52) in two junior-level *Teacher as Practitioner* college of education classes. 24% of these PSTs were males, 76% were females, and 91% were White. Elementary majors comprised 67% of the participants while secondary education majors comprised 33%. This six-credit course consists of four credits in the college classroom focused on curriculum, instruction, assessment, and classroom management and two credits for a 30+ hour K-12 classroom practicum experience.

In these semester-long teacher education courses, one of the researchers, who previously taught for over three decades in public schools, encouraged her PSTs to think critically about every aspect of education. These PSTs were in the process of reflecting on who they were becoming, what they were knowing, and what they were valuing as future teachers while moving back and forth between their practicum site and the college classroom. The PSTs accomplished this by writing weekly reflections and through participation in whole-class and small-group oral discussions. In these written reflections and oral discussions, PSTs confronted and attempted to assimilate the

disconnect between their K-12 experiences in largely teacher-centered classrooms focused on standardized testing success and the often-contradictory college class content emphasizing the importance of teaching in engaging and experiential student-centered ways to promote critical thinking and deep conceptual understanding. Throughout the semester, the oral discussions and written reflections encouraged these PSTs to honestly voice their opinions, insights, and burning questions regarding readings, class content, and practicum experiences. For the written reflections, PSTs were provided with prompts to consider, and were required to ask the instructor at least one question related to the reflection topic. Some of these prompts dealt directly with teaching for standardized testing success and with the implementation of engaging and experiential student-centered instruction. The instructor provided detailed written responses to the PSTs' reflections and questions.

Although not recording these oral, in-class discussions, the researcher attempted to capture the gist of key PSTs' quotes in her field notes following each class. Data analysis was regarded as systematic and reflexive (Creswell & Creswell, 2018) to inductively identify emerging themes across different views of PSTs regarding teacher-centered test-based instruction and engaging and experiential student-centered instruction. Beginning with line-by-line readings of the field notes and student-written reflections, the researcher coded words and expressions that were often repeated in order to capture the uniqueness of students' experiences, which Saldana (2016) refers to as the "first circle coding" (p. 211). The second circle coding employed in this analysis was "focus and axial coding methods" (Saldana, p. 244) that aims to not only generate initial themes but also to construct/connect those themes to one another (Corbin & Strauss, 2008).

Results

Quantitative data

Research question #1 was, How often do PSTs report taking standardized tests during their K-12 schooling? In answer to this question, survey results are seen in Table 1.

Table 1.
How Often PSTs Reported Taking Standardized Tests Each Year During Their K-12 schooling?

Number of Standardized Tests	n=210 K-2 Grades	n=204 Upper Elementary	n=206 Middle School	n=206 High School
1	146 (70%)	25 (12.3%)	12 (5.8%)	12 (5.8%)
2-3	49 (23.3%)	124 (60.8%)	91 (44.2%)	75 (36.4%)
4-5	14 (6.7%)	49 (24%)	60 (29.1%)	67 (32.5%)
6-7	0	6 (2.9%)	24 (11.7%)	25 (12.1%)
8-9	1 (.005%)	5 (2.5%)	14 (6.8%)	12 (5.8%)
10-11	0	1 (.005%)	4 (1.9%)	9 (4.4%)
12 or more	0	0	1 (.005%)	6 (2.9%)

Increasingly, standardized tests are being given to young students as 70% of these PSTs reported that they took standardized tests once per year during their K-2 schooling and 61% reported that they took 2-3 per year during their upper-elementary years. The frequency of standardized testing per year increased as students progressed through the grades with 27% reporting taking 4-7 per year in grades 3-5, 41% reporting taking 4-7 standardized tests in middle school/junior high, and 45% reporting taking 4-7 standardized tests in high school. A noteworthy 13% reported taking 8-12+ standardized tests each year of high school.

The PSTs also reported the average time they spent taking each standardized test (Table 2).

Table 2.
The Average Time PSTs Spent Taking Standardized Tests in a Year

1-2 hours	3-4 hours	1 day	2 days	3-4 days	1 week	more than 1 week
36 (17.1%)	51 (24.3%)	20 (9.5%)	26 (12.4%)	38 (18.1%)	30 (14.3%)	7 (3.3%)

The time spent taking these standardized tests ranged from 1-2 hours to more than 1 week. About 41% of PSTs reported that they spent time ranging from a couple of hours to half a day taking standardized tests, about 22% reported spending 1-2 days testing, and about 32% reported 3-5 days of testing. Increasing the number of standardized tests taken each year at even the primary grade levels and the time spent preparing for and taking these tests, takes valuable time away from teaching and learning.

Research question #2 was, What *levels of motivation and stress do PSTs report experiencing while taking standardized tests during their K-12 schooling?* In answer to this question, survey results related to self- and peer-motivation and self- and peer-stress are presented in Table 3.

Table 3.
Levels Of Motivation and Stress PSTs and Their Peers Experienced During K-12 Standardized Testing

	Motivation		Stress	
Grade Level	Self	Peer	Self	Peer
K-2 Grades	42.80%	18.70%	26.10%	19.50%
Upper Elementary	52.90%	19.50%	32.50%	22.50%
Middle School/Jr. High	52.60%	16.70%	47.80%	42.30%
High School	60.90%	30.90%	61.90%	58.40%

Consistently, PSTs believed they had both more motivation and more stress that was related to standardized testing than their peers. Both self-motivation and self-stress increased as the students progressed to higher grade levels. These PSTs reported 10% more self-motivation in grades 3-8 than they experienced in K-2, and 8% more self-motivation in high school than in upper elementary and middle school/junior high. Similarly, self-stress related to standardized testing increased by 7% from K-2 to upper elementary (3rd-5th), and by 14% from upper elementary to middle school/junior high (6th-8th). From kindergarten through middle school/Junior high school, PSTs reported having more self-motivation than self-stress related to standardized testing. The most self-stress related to standardized testing occurred in their high school years - an increase of 14% from middle school/junior high. In their high school years, self-motivation (61%) appears to be strongly associated with self-stress (62%). From K-2 to high school, the reported levels of peer motivation increased from 19% to 31%. Interestingly, reporting of peer motivation decreased in middle school/junior high even though their reported peer-stress levels increased. The reported levels of peer stress increased from 20% in K-2 to 58% in high school.

Research question #3 was, *Do PSTs' K-12 experiences with teacher-centered*

instruction focused on standardized testing success influence their preferred future teaching practices? Table 4 shows PSTs' concern regarding their future ability to teach for standardized testing success.

Table 4.
PSTs' Concern Regarding Teaching for Standardized Testing Success: Comparing Elementary and Secondary Education Majors

	N	Mean	Std. Deviation	F	Sig.
Pre-Service Teachers	186	2.11			
Elementary Education	117	2.18	.551	10.630	.001*
Secondary Education	69	2.00	.485		

Even when considering their K-12 experiences with instruction focused on standardized testing success, their mean score of 2.11 of a 5-point Likert scale indicates a relatively low concern regarding teaching for standardized testing success. Elementary education majors (2.18) were significantly more concerned about their ability to teach for standardized testing success than secondary education majors (2.00) ($p<.05$).

Table 5 shows the value that PSTs give to standardized testing as an effective and valuable measure of subject-area knowledge.

Table 5.
PSTs Perceived Value of Standardized Testing as an Effective and Valuable Measure of Subject-area Knowledge

	N	Mean	Std. Deviation	F	Sig.
Pre-Service Teachers	178	2.58			
Elementary Education	112	2.47	1.013	4.026	.046*
Secondary Education	66	2.77	1.219		

*$p<.05$

Considering their K-12 experiences with standardized testing and test-prep instruction, these PSTs indicated a relatively low value for standardized testing as an effective and valuable measure of subject-area knowledge, with a mean score of 2.58 on a 5-point Likert scale. Statistically speaking, secondary education majors (2.77) indicated significantly higher values of standardized testing as a good measure of subject-area knowledge than did elementary education majors (2.47) ($p<.05$).

Table 6 shows the extent to which PSTs' K-12 test-focused experiences influence their current beliefs about the importance of aligning instruction with standardized testing.

Table 6.
Correlation Between PSTs' K-12 Experience Focused on Standardized Testing Success and Their Current Beliefs About the Importance of Aligning Instruction with Standardized Tests

	N	Mean	Std. Deviation	F	Sig
Pre-service Teachers	183	3.05			
Elementary Education	86	3.30	0.87	3.637	0.058*
Secondary Education	97	2.83	1.02		

*p < .10

These PSTs' K-12 experiences focused on standardized testing success influenced, to some degree, their current thinking about the importance of aligning instruction with standardized testing expectations. As seen above, a mean score of 3.05 on a 5-point Likert scale was reported by PSTs who regarded their continued exposure to K-12 education focused on standardized testing success as a factor. There was a significant difference between elementary (3.3) and secondary education majors (2.83) ($p<.10$) with elementary education majors being more intensely influenced by their K-12 test-focused experiences. Elementary majors were not only more concerned with standardized test success in their future teaching (see Table 4), but also more concerned about the importance of aligning their future instruction with standardized test preparation than were secondary majors.

Qualitative data

Research question #4 was, *How do PSTs accommodate the disconnect between their K-12 experiences with teacher-centered, test-prep instruction and the more engaging and experiential student-centered instruction emphasized in their teacher preparation?* Understanding the complexity of PSTs' thinking regarding this question requires considerably more in-depth investigation than a quantitative score on a survey's Likert scale can reveal. For that reason, qualitative data from PSTs' oral discussions and written reflections was collected.

Background of pre-service teacher participants

This study's qualitative data was obtained from PSTs in a junior level course. In their previous foundation courses, they were exposed to critical aspects of standardized tests which included possible cultural biases (race, gender, socio-economic status, etc.), test anxiety, and test validity and reliability. A required assessment course addressed these aspects of standardized testing. In another sophomore-level foundation course required for all the PSTs, the instructor exposed the students to the multiple perspectives surrounding issues related to standardized testing with an emphasis on equity and test fairness for students with diverse cultural backgrounds. Both foundation

courses were largely critical of the legitimacy of standardized testing in our current era of educational accountability. Because of the high enrollment in both courses, the content was information-heavy and delivered through lecture. The PSTs in these courses were not given time to reflect on details of their K-12 standardized test experiences critically. Nor were they prompted to consider practical strategies for simultaneously dealing with mandated standardized testing while implementing student-centered engaging and experiential instruction in their future teaching. Without this opportunity to engage in serious reflection, confusion may result as these PSTs evolved from K-12 students experiencing a plethora of teacher-centered, test-focused instruction to college of education PSTs where the importance of teaching in engaging and experiential student-centered ways is promoted.

Before moving to methods courses and student teaching, the NCLB/ESSA-generation PSTs in this course were asked, for the first time, to think critically about the effectiveness of their K-12 test-focused school experiences. At the same time, they were prompted to think about how they could assure proficient standardized test scores while implementing engaging and experiential student-centered instruction. This was accomplished through in-depth discussion sessions with their peers and the writing of personal reflective essays. They were also asked to interview their mentor teachers while in the 5-week practicum to gain their insights about how best to teach while simultaneously preparing their K-12 students for standardized testing success. Through open-ended prompts, this instructor encouraged the students to honestly reflect on and critically analyze the effectiveness of their K-12 test-focused instruction and assimilate their developing, but seemingly contradictory, engaging and experiential student-centered teaching philosophy. These PST study participants were asked to share their personal opinions, insights, and burning questions while seriously considering the opinions and insights of their peers and instructor in whole and small group oral discussions and through written reflections. Because the instructor took time at the outset of the course to build a trusting and supportive classroom community, these PSTs felt comfortable actively engaging in heated class discussions and writing honest and analytical reflections concerning this complex issue.

Examples of these PSTs' beliefs concerning test-based instruction expressed during oral discussions and in written reflections accompanied by explanatory instructor response follow under the two overarching themes that emerged during data analysis: 1) Test-based accountability: The good, the bad, and the ugly and 2) Moving forward: Killing two birds with one stone.

Theme 1: Test-based accountability: The good, the bad, and the ugly.

Following is a representative example of a small-group discussion involving elementary and secondary education majors which demonstrates the good, the bad, and the ugly image of standardized testing.

Student 1: *I think standardized testing is important. Kids will have to take a lot of standardized tests in high school and for college admission, so they better get used to it.*

Student 2: *I agree. I had to take standardized tests in every grade when I was in elementary, middle, and high school. My teachers spent a lot of class time preparing us for these standardized tests. I always got good scores on these tests and think they were a good measure of my academic knowledge. What was good enough for me should be good enough for my students.*

Student 3: *I hated taking standardized tests and I didn't even try on them. I just filled in the test bubbles in an artistic pattern and got it over and done with so that I could do something that was hopefully more interesting. I didn't really care what my test scores were.*

Student 4: *For me, school was boring and the things we were forced to learn were meaningless. It seemed like all I ever did was read a chapter, answer the questions at the end of the chapter, memorize the factual information, take a test on it, and then forget it because it held no deep meaning for me and was so uninteresting.*

Student 3: *Yeah, learning in school was a lot like that for me too. It didn't engage me, interest me, or excite me. In some grades and classes, my teacher just read a script and we were all required to respond with the one-right-answer in unison. These teachers never had time for our questions or allowed us to talk about our connections with the material.*

Student 2: *Yes, I also had teachers who showed no passion for what they were teaching, and it was hard for me to be enthusiastic about the learning when they weren't. That being said, I still think standardized tests are an appropriate and valuable measurement of student learning and are, therefore, necessary!*

This small group dialogue exhibited the participants' positive *(Standardized testing is important for college admission; Standardized tests are a good measure of academic knowledge)* and negative K-12 experiences concerning the focus on standardized testing success *(Did not try on standardized tests; School was boring, unengaging, meaningless, uninteresting; Teachers lacked passion for what they were teaching)*, as well as their recognition that standardized testing is here to stay and, therefore, must be accommodated by teachers. Moreover, these PSTs understand that teacher accountability must go above and beyond the achievement of proficient standardized test scores; true accountability requires engaging, experiential, and intrinsically motivating student-centered learning experiences. At this point in their pre-service training, the students were aware of the pros and uncomfortable cons of teaching for standardized testing success. This awareness made them cognizant of the ineffectiveness of blindly repeating what they have experienced in their K-12 schooling in their own future teaching.

Having the opportunity to express their viewpoints while listening to and considering the perspectives of their peers helped these PSTs critically analyze the good, the bad, and the ugly concerning test-based accountability. With a high level of passion, they chose this profession and must now figure out the best way to satisfy the expectation of teaching for standardized testing success while engaging their students in experiential student-centered learning.

Theme 2: Moving forward: killing two birds with one stone

This study's PSTs are confused and concerned about their ability to move forward into their teaching career and kill two birds with one stone. In other words, will they be able to instruct for standardized testing success while implementing engaging and experiential student-centered learning. Their responses were diverse and interesting. Two representative PST written reflections accompanied by instructor response follow:

* *Written reflection and questions by an elementary education major:* Since starting my teacher-education program, I have never heard a positive statement regarding standardized tests, so it blows my mind that instead of getting rid of them, we are relying on them more heavily. Similarly, I am not a fan of standardized tests. I hate that teachers feel the need to teach to the test, that instruction stops to make time for testing, and that a lot of times these tests are unrelated to real life or much of the valuable learning going on in the classroom. At the same time, the reality is my students must score proficiently on the standardized tests to prove that they are learning and that I am an effective teacher. My questions for you this week are, *What do you do if you don't want to teach to the test or stop instruction for test prep? How do you prepare children for success on standardized tests without stopping all the other important learning going on in the classroom?*

* *Instructor response:* Many schools/teachers across the country have eliminated curriculum that is not tested. Many teachers feel pressured to make sure their students score well and resort to bland, worksheet-laden, teacher-centered instruction to make sure this happens. Instructing in a teacher-centered manner using a scripted curriculum delivered with fidelity and expecting your students to sit quietly and passively absorb uninteresting, fact-based knowledge so they can spit it back on the standardized tests needs to be changed, and you can start making this change in your own classroom. You don't have to teach in bland ways to prepare your students for more bland instruction in the future. Instead, they need to see that there is another way to learn and that learning is awesome! If you teach in ways that are engaging, the kids will learn what they need to know to be successful on the standardized test. In your future classroom, try to teach in ways that turn kids on to learning rather than ways that turn kids off to learning and school, and little time will be needed to prepare kids for success on the standardized test.

* *Written reflection and questions by a secondary education major:* I found joy

in learning and had a lot of intrinsic motivation for school. I didn't care how I had to learn; I just enjoyed learning. When I didn't enjoy a part, I had confidence that something I did enjoy was coming up, so I could get through it. I know the importance of joy in school, and I'm concerned about students who are apathetic or unmotivated. *How do I change their mindset toward school and learning? How can I portray the subject matter in a fun, engaging way to someone who doesn't like it as much as I do, or isn't motivated as much as I am, and still be assured that they will be prepared for standardized testing?*

* *Instructor response:* Research indicates that approximately half of our students from 5th to 12th grade are apathetic about school and school-based learning. Many of these kids are not apathetic about doing things that they choose to do and that hold high interest for them because of their intrinsic motivation for these things. Find ways to turn these unmotivated, apathetic children back on to learning. Most importantly, use your creativity and innovation to develop units of instruction that are learner-centred. You can have a bit of lecture, a bit of reading and answering questions in writing, a bit of worksheet completion, but balance that with cooperative/collaborative learning, mini role-playing simulations, interactive discussion, project/problem-based learning, etc.

Some other examples regarding Theme 2 – Killing Two Birds with One Stone from their weekly reflections follow:

> A. *"Like I loved school, my future students can love school and achieve success while also engaging in experiential student-centered instructional strategies";*
>
> B. *"When students are engaged in meaningful learning, I now believe good test scores naturally follow";*
>
> C. *"If we can find ways to re-engage unmotivated students in school-based learning, I am sure they will learn things differently and have some fun, which I believe can be positively reflected in their standardized test scores. My students need to be seated in driving seats."*

Some of these PSTs were strongly in favor of standardized testing as a useful, beneficial, and effective measure of student learning. Others were strongly opposed to standardized testing and thought it influenced superficial and ineffective teaching which led to unmotivated and apathetic students. Regardless of their perceptions of standardized testing, most of these PSTs were confused and concerned about how they could teach for standardized testing success and implement engaging instruction that would be intrinsically motivating for their students. As evidenced in their written reflections and whole and small group discussions, the majority of the PSTs in this study were ready to move forward into their teaching career with a belief that it is possible to kill two birds with one stone - that standardized testing success can be achieved

through engaging student-centered instruction.

Some of these PSTs, particularly secondary education majors, remained steadfast in their belief that standardized testing success could be achieved most effectively and efficiently through teacher-centered instruction with explicit test-prep instruction. Representative quotes follow:

> A. *"I think it is important to focus instruction on factual knowledge that will prepare my high school math students for standardized testing."*
>
> B. *"Teacher-centered instruction is likely to be effective in efficiently teaching students the essential knowledge in my science classes required to pass standardized tests."*

These whole and small group discussions and the students' personal written reflections prepared them to successfully move forward into their teaching careers and manage the reality of teaching simultaneously for student engagement and for standardized testing success.

Integrating quantitative and qualitative findings

Integrating the quantitative and qualitative data resulted in richer and more comprehensive results concerning the perceptions of these NCLB/ESSA-generation PSTs.

First, as is evident from the quantitative data, these PSTs took many high-stakes standardized tests in their K-12 schooling and, as a result, were most likely exposed to an extensive amount of teacher-centered, test-prep instruction beginning in kindergarten and increasing year-by-year through high school. For example, 93% reported taking 1-3 standardized tests annually in grades K-2 even though NCLB and ESSA did not require standardized testing before 3rd grade. Moreover, 81% reported taking 2-7 standardized tests annually in high school. Quantitative data also showed that students self-reported both more motivation and more stress for standardized testing as they progressed to higher grade levels. Of those surveyed, 53% and 61% reported being motivated for standardized testing success in middle school and high school respectively. Interestingly, 47% and 39% were not motivated for standardized testing success in middle school and high school respectively.

Qualitative data supports this extensive amount of K-12 testing and the motivation or lack of motivation these PSTs had regarding standardized testing success. Examples include:

> *- I had to take standardized tests in every grade when I was in elementary, middle, and high school. My teachers spent a lot of class time preparing us for these standardized tests. I always got good scores on these tests and think they were a good measure of my academic knowledge.*
>
> *- I hated taking standardized tests and I didn't even try on them. I just filled in the test bubbles in an artistic pattern and got it over and done with*

so that I could do something that was hopefully more interesting. I didn't really care what my test scores were.

Second, the quantitative data indicates that significantly more secondary education majors (mean of 2.77 on 5-point Likert scale) than elementary education majors (mean of 2.47) reported valuing standardized testing as an effective and valuable measure of subject area knowledge. At the same time, elementary education majors (mean of 2.18 on 5-point Likert scale) were significantly more concerned about teaching for standardized testing success than were secondary education majors (mean of 2.00). A majority of PSTs (mean of 3.05 on a 5-point Likert scale) reported that it was important for classroom instruction to be aligned with standardized tests with elementary education majors (mean of 3.30 on a 5-point Likert Scale) being significantly more concerned than secondary education majors (mean of 2.83). The qualitative data indicated that, as a whole, elementary education majors were more concerned with teaching in engaging student-centered ways while secondary education majors, as a whole, were more content to teach through teacher-centered lecture, and independent textbook reading and worksheet completion. Representative supporting quotes from elementary education majors include the following:

- . . . my future students can love school and achieve success while also engaging in experiential student-centered instructional strategies.

- When students are engaged in meaningful learning, I now believe good test scores naturally follow.

- If we can find ways to re-engage unmotivated students in school-based learning, I am sure they will learn things differently and have some fun, which I believe can be positively reflected in their standardized test scores. . .

Representative supporting quotes from secondary education majors include the following:

- I think it is important to focus instruction on factual knowledge that will prepare my high school math students for standardized testing.

- Teacher-centered instruction is likely to be effective in efficiently teaching students the essential knowledge in my middle school science classes required to pass standardized tests.

And lastly, all the PSTs had accepted the inevitable reality that they would be required to teach for standardized testing success. Elementary and secondary education majors differing teaching philosophies could be the reason that elementary education majors are more concerned about achieving standardized testing success (Elementary=2.18; Secondary=2.00) and more concerned about how they will align their instruction with standardized tests (Elementary=3.30; Secondary=2.83). Elementary educa-

tion majors seem to be more inspired to implement engaging student-centered learning experiences in their future classrooms. This strongly held philosophy causes them to be less confident about their ability to assure standardized testing success while utilizing less structured and less test-focused instruction. Although many secondary education majors had accepted the value of engaging and experiential student-centered instruction, they were not as concerned about implementing it in their future secondary classrooms. Consequently, the secondary education majors tend to be more confident about their ability to teach for standardized testing success through their utilization of more structured teacher-centered and more direct test-focused instruction.

Discussion and Conclusion

The integration of the compelling quantitative and qualitative data from this study confirms that the teaching identity of the current NCLB/ESSA-generation PSTs has been influenced substantially by our contemporary education accountability era (Brown & Goldstein, 2013). Three discussion points follow.

First, quantitatively, the PSTs in this study took standardized tests beginning in kindergarten and increased the number of standardized tests and the time spent taking them as they progressed to higher grades. Kamenetz (2015) claims that schools are ". . . raising the total number of standardized tests up to thirty-three per year in some districts [Florida]" (p. 7). The amount of time these PSTs spent taking standardized tests was not completely supportive of Kamenetz's claim about "the test obsession [of] public schools" (p. 7). There is likely because of differing test requirements from state to state. These PSTs remembered feeling both more motivated and more stressed regarding standardized testing as they progressed from K-2 (Motivated=43%; Stressed=26%) to high school (Motivated=61%; Stressed=62%). When asked about standardized testing, some reported valuing standardized testing and being motivated to perform on them to the best of their ability. More prevalent, however, were responses like "I hated taking standardized tests and I didn't even try on them" which revealed negative and/or stressful memories due to the intrinsic nature of evaluation. A comment like "For me, school was boring and the things we were forced to learn were meaningless" was representative of many of these PSTs concerning their K-12 school experience. The nature of these comments about standardized testing and the prevalence of teacher-centered test-prep instruction may provide insight into the unprecedented prevalence of student apathy (Amrein & Berliner, 2002; Blad, 2014; Mora, 2011; Moulton, 2008; Tita, 2010; Wang & Holcombe, 2010).

It is very encouraging, however, that the PSTs of the current study expressed only moderate worry (mean of 3.05 on a 5-point Likert scale) about teaching for standardized testing success in their future teaching profession with elementary education majors being more concerned than secondary majors. This, along with comments collected in the qualitative data, implies that many of these PSTs have adopted the phi-

losophy that they can 'kill two birds with one stone.' In other words, they believe they balance the expectation of teaching for standardized testing success while engaging students in engaging student-centered learning. This is especially true for elementary education majors who are concerned with assuring the development of the whole child (academic, emotional, social, behavioral, and attitudinal well-being) more than simply narrowing their focus to achievement on standardized tests. This is a positive outcome of this study. Even as pre-service teachers, they are somewhat aware of the complex and seemingly daunting task ahead of them.

Second, related to the above discussion point, this study's PSTs were aware of the accountability they are going to hold in terms of aligning their curriculum and instruction with standardized testing. They know standardized testing will be an inevitable and unavoidable aspect of their future teaching practice. Drawing on their feelings of dissatisfaction with their own K-12 learning experiences and dispassionate teachers, these PSTs generally acknowledge the importance of promoting higher order-thinking skills through engaging student-centered instruction.

In their education foundation courses these PSTs were inculcated concerning the negative aspects of one-size-fits-all, fidelity-based, guaranteed viable curriculums that, presumably, ensure proficient standardized test scores (Archinstein & Ogawa, 2006; Cawelti, 2006). At the same time, these PSTs have a mediocre opinion of standardized testing being an effective and valuable measure of subject area knowledge, with elementary education majors comparatively reporting a lower value than secondary education majors. This mediocre opinion of the usefulness of standardized testing most likely results from their teacher education regarding the reliability and validity.

A majority of the studied PSTs (especially elementary education majors) appear to embrace Brown and Goldstein's (2013) academic success through 'Progressive/ Developmental Accountability.' That is, academic growth through engaging instruction that supports each student's developmental readiness to learn, learning style, and learning pace. It is comfortable and safe, however, for PSTs to buy into the popular discourse of Brown and Goldstein's (2013) academic success through 'Mastery-Based Accountability' in which teachers engage in teacher-centered, test-prep instruction. This study's PSTs are well aware that the focus on standardized testing to 'prove' academic success can have a very negative impact on true student learning (Erskine, 2014). Since the focus on standardized testing success is a reality in today's schools, however, these PSTs may be influenced to forego embracing their engaging learner-centered instruction to implement the easier and more comfortable teacher-centered, test-prep instruction.

And third, exploring these NPSTs' K-12 school experiences determined that they had an influence over their pedagogical decision-making. As the fish, PSTs would have never known that the water (consisting largely of teacher-centered, test-prep instruction) exists (Bruner, n.d.). Prompting them to ask critical questions about why their

K-12 teachers utilized teacher-centered instruction to prepare their students for standardized testing success is just a beginning of their journey to become educators who critically reflect on the effectiveness of their own pedagogical practices. The question, Will these PSTs teach their future students in the same way their K-12 teachers taught them in preparation for standardized testing success? remains unanswered. The good news is that these PSTs have begun to question the impact that a focus on proficient standardized test scores may have on their future teaching. These questions include, Will test scores be proficient if students are engaged in experiential student-centered learning rather than apathetically enduring teacher-centered, test-prep instruction?, Will students perform proficiently on reading and math standardized tests if school time is allotted to subjects other than the tested reading and math?, Will students be prepared for standardized-testing success if time is taken to delve deeply into a few essential concepts rather than superficially 'covering' the many concepts that may appear on the test?

It is reasonable to say that these NCLB/ESSA-generation PSTs are increasingly aware of 'the good, the bad, and the ugly' concerning the current focus on standardized testing success. Understandably, these PSTs are emotionally vulnerable when facing standardized testing as future teachers (Brackett, et al., 2010) and are concerned about the effect of their students' standardized test scores on their teacher evaluations. Because of this, it is essential that college of education instructors provide a safe, supportive, and trusting environment for current PSTs to explore this emotional and cognitive dissonance. Critically examining long-held beliefs about the influences of high-stakes testing and the most effective way to teach will take some time. By engaging in honest dialogues with their peers and instructors and writing candid reflections concerning these complex issues, we believe that PSTs will believe that it is possible to 'kill two birds with one stone.' That is, they will believe that it is possible to move forward into their teaching career and achieve proficient test scores while providing engaging instruction that promotes critical thinking and deep-level conceptual understanding and supports each student's intrinsic motivation to learn.

Study Limitation

This study was conducted at a land grant university in the Rocky Mountain Region where approximately 60% of the PSTs came from that state's K-12 schools. Moreover, this teacher preparation program consisted of predominantly white, female students. For these reasons, generalizing findings of this study to the entire nation is limited.

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