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Practicing Policy: Preservice Teachers' Experiences with a Proficiency-Based Education Model

Abstract: *Varying policy on the implementation of proficiency-based education (PBE) presents a challenge in the preparation of future educators. It becomes critical to include structures and strategies in teacher education programs that support learning and application in different assessment frameworks. This study explores a piloted PBE model in a university teacher preparation course to better understand the enactment of PBE in classrooms, and the associated teaching and learning implications in a university setting. Results point toward reflection, choice, and standards as objectives as benefits of a PBE model, while challenges include time and scalability in classrooms. Implications focus on the instructional practices identified as benefits in a PBE model and the implementation of those practices in teacher preparation.*

Various progressions in the national Pk-12 educational landscape have increased the focus on instructional modifications to support students' demonstration of knowledge and skills based on individual needs (Nodine, 2016). As newly proposed state educational laws and policies center on personalized learning approaches and redesigned assessment processes (Norford & Marzano, 2016; Silvernail, Stump, Atkinson Duina, & Moran Gunn, 2013), proficiency-based education (PBE)¹ emerged across the United States (Sturgis, 2016) as a model of teaching and learning designed to support students in their demonstration of content mastery and application (Worthen & Pace, 2014). Common elements in PBE include student advancement based on demonstrated proficiencies of standards, explicit and measurable learning objectives, multiple and varied forms of assessment, and learning outcomes that emphasize application (Sturgis, 2014). For inservice educators, this often presents a shift in grading and associated instruction, whereas the focus of learning is not on the standardization of content attainment but on the individual application of content knowledge and personalization of assessment. With that, the more traditional form of grade reporting (e.g. 100-point scale, or A-F letter grades) does not suffice as a representation of learning and the comprehensive model of reporting

¹ As noted in *Competency Works* (www.competencyworks.org), "advancing upon mastery" can be referred to as proficiency-based, standards-based, mastery-based, or performance-based. In this study the term "proficiency-based" is adopted and utilized to align with the context in which this study is situated.

educational attainment is based on a progression of standards and associated indicators (Maine DOE; Sturgis, 2014).

Sturgis (2016) reported that over 50% of the United States were taking steps to explore or implement elements of proficiency-based education. However, implementation ranges from comprehensive statewide policy alignment, to loosely defined outcomes across localities. Accordingly, some states have found success with proficiency-based learning and related models of assessment (Bishop, Downes, & Nagle, 2017), while others experienced implementation difficulties. In Maine, for example, the lack of cohesive policy guidelines from the department of education resulted in consequential disparities of PBE models, enactment of PBE across the state, and an eventual repeal of the mandate yielding to district choice of a PBE model or a more traditional grading approach (Johnson, 2019). This leads to a variety of grading, assessment, and reporting structures across districts.

While students and inservice educators have experienced the oscillation of policy change regarding PBE, the unpredictability of implementation also presents challenges for teacher education programs in preparing future educators for a dynamic system of grading. As research indicates that preservice teachers benefit from education coursework in their preparation that provides opportunities to develop and practice pedagogical understandings (Darling-Hammond, 2000, 2006), in a teacher educator program preparing future educators for inconsistent systems of assessment that rely on shifts of associated teaching practices is potentially problematic. Therefore, it becomes necessary to ensure that preservice teachers are adequately prepared for multiple systems. As traditional grading continues to be the dominant structure in teacher preparation programs, it is critical to include structures and strategies in preservice teacher education that supports learning and application of PBE models (Worthen & Pace, 2014). In response to the need to engage preservice teachers in different grading systems the researcher piloted a PBE assessment model in her educational technology course at a public university in New England. This qualitative inquiry grounded in case study research was approached through an exploratory lens with an aim to understand how preservice teachers engage with a proficiency-based model as learners and future educators. As such, under the broad scope of research looking at supporting future educator development this study centered on understanding (a) the experiences of preservice teachers as learners in a proficiency-based education model, and (b) how preservice teachers conceptualize using proficiency-based education in K-8 classroom teaching. Succeeding these intentions, the researcher aimed to discover how university faculty teaching in educator preparation programs can better prepare preservice teachers for variable

enactments of policy related to proficiency-based education, and the associated implications for university classroom teaching in educator preparation.

Framing the Research

In a proficiency-based education model, student achievement is based on the demonstration of mastery of a specific set of skills, often defined by a set of standards (Johnston, 2011; “Maine DOE - What is Proficiency-Based Learning?,” n.d.; Sturgis, 2014). Although lacking a precise definition and subsequent process of enactment, educational consultants suggest successful PBE systems include researched based best practices inclusive of clear learning expectations (i.e. objectives, outcomes, or standards); multiple forms of, and opportunities for, assessment; the separation of academic achievement from work habits; and instructional strategies that support individualized or personal learning (Great Schools Partnership, 2017).

An initial analysis of preliminary policy implementation in one state identified several benefits to proficiency-based education (Silvernail, Stump, Atkinson Duina, & Moran Gunn, 2013). These benefits included flexible time and pace of student learning, increased student choice in assessment, and differentiated and personalized-learning approaches (Silvernail, Stump, McCafferty, & Hawes, 2014; Sturgis, 2014; U.S. Department of Education, 2016).

Highlighted challenges included the increase in time to implement PBE, dissenting opinions on state-legislated models, and the difficulties of executing PBE given the existing frameworks of public-school structures (e.g. grade levels, schedules, pathways to teacher certification) (Johnston, 2011; Silvernail et al., 2013; Silvernail et al., 2014).

The reported challenges experienced by early school adoption are noteworthy and have potential implications for teacher educator programs. For example, although districts adopting PBE work under common statewide guiding principles, implementation models can drastically vary across districts and schools (Silvernail et al., 2013). Research that focused on the importance of modeling in teacher preparation programs (Goos & Moni, 2001) supported the idea that preservice teachers need to engage with authentic applications of assessment in their preparation. Therefore, in a teacher education program, engaging students in teaching, learning, and assessment models that they may encounter in classrooms becomes essential.

Research on proficiency-based education models in teacher education programs, and specifically within courses, is developing yet currently narrow. Nodine (2016) suggested competency-based (i.e. PBE) approaches are increasing in their application in United States higher education teaching and learning environments. In line with the variability in Pk-12 education, there is substantial inconsistency with the approaches of proficiency-based education in higher education with little agreement on how to define competency (Nodine, 2016). These implementations though, as suggested by Nodine, provide bases to test pilot projects to further the research field of understanding PBE in higher education and the implications on student success.

Studies, or reflection on practice, that do exist are often situated in clinical (i.e. student teaching) practices as opposed to the university classroom (Kalnin, 2014). Such examinations (Montecinos, Rittershausen, Solis, Contreras, & Contreras, 2010; Tang, Cheng, & So, 2007) highlighted the use of standards to assess teacher candidates' progression of skills and the benefits to their development of professionalism and learning. However, the limited use of PBE in content or methods courses within a teacher preparation program (prior to student teaching) suggests a gap in research attentive to the necessary preparation of preservice teachers to develop and practice pedagogical understandings (Darling-Hammond, 2000, 2006).

Kalnin (2014) found limited information on how to implement a proficiency-based grading model in her teacher preparation course and relied on "an experiential approach that linked assessment and grading" (p. 24). Implications from her work included reflection upon her own practice that highlighted the importance of preparation in methods courses in order that teacher candidates can apply their knowledge to extend their developing understandings (Kalnin, 2014). Smith, DeMink-Carthew, Tinkler, and Tinkler's (2017) implementation of a PBE model in a secondary mathematics methods course near the end of a program of study emphasized the need for preservice teachers to have additional experiences with proficiency-based learning models. Findings pointed toward an increase of metacognitive awareness around assessment and student outcomes. The researchers discussed, given these beneficial implications, the need for further exposure and study on the implementation of PBE, and subsequent experiences by preservice teachers, earlier in a teacher preparation program. This inquiry attends to that need through the employment of a PBE model in education courses experienced by preservice teachers early in their program.

Research Design

This study followed an embedded single-case design (Yin, 2014). The researcher piloted a proficiency-based education assessment model in her preservice teacher educational technology course. The students and their individual opinions and respective data were used as subunits in consideration of the analysis. Inherent to the nature of qualitative research and inquiry, the professor as researcher took multiple steps to attend to issues of trustworthiness and a potential lack of objectivity.

All students returned consent forms indicating agreement, or not, to the research. Following the consent process, participants were instructed to direct any concerns to the university IRB Chair. Consent forms were locked in a file cabinet until after the submission of grades, and then sorted into consent or non-consent. Any data related to non-consenting students were treated as standard course records and kept in the appropriate digital space. All data related to consenting students were stripped of names to protect confidentiality and bias during analysis. Data were triangulated from multiple sources, and all data analyses were conducted after the reporting of final grades.

Course and Students

The PBE pilot took place in a required two-credit, semester-long educational technology course situated within a concurrent block of classes in which the students take all of the same courses (each taught by a different faculty member). The “block” is the first set of professional education courses students enrolled in the teacher preparation program. Included in the block of courses is a field-placement which is a noteworthy difference from student teaching. Preservice teachers are in classrooms two mornings a week observing the teaching environment, structures, and routines. They have one opportunity to formally teach a lesson. The block of courses provides a foundation for higher-level education courses including advanced clinical placements and student teaching. Of the 18 students enrolled in the course, 14 (13 female, 1 male) consented to the study.

The PBE Assessment Model

Framework. Aligned to course content and program requirements, the researcher used the 2008 version of the ISTE Standards for Teachers as a framework for developing the PBE assessment model. For each of the five ISTE standards there were four indicators for a total of 20 different benchmarks for

educators (Table 1). However, the standards did not use a progression model to assess teachers in their development toward the standard (or applicable indicators). Therefore, the researcher took initial steps to expand on the ISTE Standards for Teachers to include the following progression for each standard indicator: Not Yet Present, Emerging, Developing, and Applying. Each measure within an indicator utilized the same stem, *I can*, followed by a performance indicator across three different areas of cognitive development (Marzano & Kendall, 2007): Retrieval, Comprehension, and Knowledge Utilization (Table 2). The assessment model was recorded on a collaborative digital document and a copy was shared between the researcher and each student.

Table 1
ISTE Standards for Teachers (2008) and Indicators

<i>Standard</i>	<i>Indicators</i>
Facilitate and Inspire Student Learning and Creativity	<ul style="list-style-type: none"> a. Promote, support, and model creative and innovative thinking and inventiveness b. Engage students in exploring real-world issues and solving authentic problems using digital tools and resources c. Promote student reflection using collaborative tools to reveal and clarify students' conceptual understanding and thinking, planning, and creative processes d. Model collaborative knowledge construction by engaging in learning with students, colleagues, and others in face-to-face and virtual environments
Design and Develop Digital-Age Learning Experiences and Assessments	<ul style="list-style-type: none"> a. Design or adapt relevant learning experiences that incorporate digital tools and resources to promote student learning and creativity b. Develop technology-enriched learning environments that enable all students to pursue their individual curiosities and become active participants in setting their own educational goals, managing their own learning, and assessing their own progress c. Customize and personalize learning activities to address students' diverse learning styles, working strategies, and abilities using digital tools and resources d. Provide students with multiple and varied formative and summative assessments aligned with content and technology standards and use resulting data to inform learning and teaching
Model Digital-Age Work and Learning	<ul style="list-style-type: none"> a. Demonstrate fluency in technology systems and the transfer of current knowledge to new technologies and situations b. Collaborate with students, peers, parents, and community members using digital tools and resources to support student success and innovation c. Communicate relevant information and ideas effectively to students, parents, and peers using a variety of digital-age media and formats d. Model and facilitate effective use of current and emerging digital tools to locate, analyze, evaluate, and use information resources to support research and learning
Promote and Model Digital Citizenship and Responsibility	<ul style="list-style-type: none"> a. Advocate, model, and teach safe, legal, and ethical use of digital information and technology, including respect for copyright, intellectual property, and the appropriate documentation of sources b. Address the diverse needs of all learners by using learner-centered strategies and providing equitable access to appropriate digital tools and resources

Engage in Professional Growth and Leadership	<ul style="list-style-type: none"> c. Promote and model digital etiquette and responsible social interactions related to the use of technology and information d. Develop and model cultural understanding and global awareness by engaging with colleagues and students of other cultures using digital-age communication and collaboration tools
	<ul style="list-style-type: none"> a. Participate in local and global learning communities to explore creative applications of technology to improve student learning b. Exhibit leadership by demonstrating a vision of technology infusion, participating in shared decision making and community building, and developing the leadership and technology skills of others c. Evaluate and reflect on current research and professional practice on a regular basis to make effective use of existing and emerging digital tools and resources in support of student learning d. Contribute to the effectiveness, vitality, and self-renewal of the teaching profession and of their school and community

Table 2
Assessment Framework Example Standard, Indicator, and Progression

ISTE Standard One for Teachers: Facilitate and Inspire Student Learning and Creativity

Teachers use their knowledge of subject matter, teaching and learning, and technology to facilitate experiences that advance student learning, creativity, and innovation in both face-to-face and virtual environments.

Indicator	Not Yet Present	Emerging	Progressing	Applying
a. Promote, support, and model creative and innovative thinking and inventiveness	Minimal evidence of understanding standard or demonstrating indicator.	I can understand how to facilitate creative thinking and inventiveness through digital tools and resources	I can discuss ways students can use digital tools and resources to enhance creative and innovative thinking	I can facilitate creative thinking through modeling related knowledge, skills, and attitudes through digital tools and resources
b. Engage students in exploring real-world issues and solving authentic problems using digital tools and resources	Minimal evidence of understanding standard or demonstrating indicator.	I can understand technology-based learning activities to engage students in critical thinking, creativity, and authentic problem solving centered on real-world issues	I can discuss activities in researching real-world problems and issues and evaluating diverse solutions using digital tools and resources.	I can plan and facilitate activities that engage students in exploring real-world issues, in applying critical thinking, and selecting appropriate digital tools and resources
c. Promote student reflection using	Minimal evidence of	I can understand the use of	I can discuss student use of	I can support and engage students in

collaborative tools to reveal and clarify students' conceptual understanding and thinking, planning, and creative processes	understanding standard or demonstrating indicator.	collaborative tools to promote student reflection, planning, and creative thinking	collaborative tools to reflect on and clarify their own thinking, planning, and creativity.	reflecting on and clarifying their own thinking, planning, and creative processes with digital tools and resources
d. Model collaborative knowledge construction by engaging in learning with students, colleagues, and others in face-to-face and virtual environments	Minimal evidence of understanding standard or demonstrating indicator.	I can research and understand strategies for facilitating knowledge construction and creative thinking in either face-to-face or virtual environments	I can discuss knowledge construction, creative thinking, and collaborative interaction by engaging in learning with students, colleagues, and others in either face-to-face or virtual environments.	I can model knowledge construction and creative thinking by working collaboratively with individuals and groups, contributing to learning both face-to-face and virtually

Process and Evaluation. Throughout the course, students worked toward content attainment and application through a variety of ongoing course *activities* and *assignments*. Activities were posed as suggested opportunities and included experiences such as content related professional development (e.g. local conferences or workshops); applicable other university course assignments; field placement experiences; and virtual professional learning community involvement. Assignments were required components of the course and included lesson plans, group presentations, and weekly readings and reflections. At two different checkpoints in the semester, students assessed themselves on ten individually chosen indicators spanning across at least three different standards. Using a collaborative assessment model based on the work of Smith, DeMink-Carthew, Tinkler, and Tinkler (2017), the structure of a collaborative digital document allowed for asynchronous conversations. Students commented on their progression using a process of self-reflection and documentation linking out to supporting evidence. The researcher provided feedback on each reflection either in agreement with students' self-assessments or provided reasons why students were not at their indicated progression points. Following the asynchronous written dialogue, face-to-face follow up conversations were held with each student and focused on the assessment model and associated evidence, standard progression, and personal goals. At the end of the semester, the final progressions were

translated to an A-F grading scale, as the university required such grades. An initial translation was provided (Table 3), but students had the opportunity to provide a written holistic reflection at the end of the semester if they felt that their translated grade did not represent their learning and application.

Table 3
Grade Conversations

A	Minimum of 8 <i>Applying</i> ; none below <i>Progressing</i>
B	Minimum of 8 <i>Progressing</i> ; none below <i>Emerging</i>
C	Minimum of 8 <i>Emerging</i>
D	Maximum of 5 <i>Not Yet Present</i>
F	More than 5 <i>Not Yet Present</i>

Data Collection

Data were generated using four different methods. First, the researcher documented participants' assessment data from the shared document over the course of the semester. Second, participants' end of semester self-evaluations were collected in digital written format. Third, the researcher administered an end of semester qualitative survey on the last day of the course during the time students were filling out course evaluations. This is a noteworthy circumstance as it is a university policy that course instructors are not in the room during course evaluations. Last, the researcher kept course observation notes throughout the semester documenting participants' experiences of using a proficiency-based assessment model, including the individual conversations.

Data Analysis

With a research purpose of developing an understanding, data were analyzed through an open coding approach (Creswell, 2013; Yin, 2014) following Yin's Five-Phased Cycle of analyzing qualitative research (Yin, 2014). This method allowed for emergent themes and findings as they related to preservice teachers' experiences with the proficiency-based assessment model.

Compiling. Data from all sources were combined to create a qualitative database for the researcher to familiarize herself (Yin, 2014) with participants' assessment data, self-evaluations, and survey, as well as researcher field notes. During this first stage, priority was given to the familiarization with the data as it related to the research focus; the two initial fields for data included experiences of preservice teachers as learners, and the use of a proficiency-based education model in a classroom setting.

Disassembling and Reassembling. Drawing from Grounded Theory, during the next two phases the researcher applied an axial approach to the analysis looking for multiple subcategories as they applied to the initial fields from compiling (Strauss & Corbin, 1998) (Table 4). An iterative process between disassembling and reassembling data into categories and broader themes provided opportunities to discover patterns and consistencies across data sources.

Interpreting and Concluding. The interpretation and conclusion of the data centered on the understanding of preservice teachers' experiences of a proficiency-based education model. Therefore, description as a mode of interpretation (Yin, 2014) was employed with an aim of gaining awareness of an experience. Such awareness was used to offer conclusions that suggested propositions for preservice teacher learning in a proficiency-based classroom.

Table 4
Examples of Axial Coding with Initial Fields

Selected Participant Data	Source	Field	Category (1)	Category (2)
<i>This type of assessment made you focus more on whether or not you actually met the standard</i>	Survey	Learner	Progression on Standards	Self-Assessment
<i>I was able to give students more choice in their activities</i>	Assessment Data	Educator	Pedagogy	Application

Limitations

The design of this study is subject to limitations. First, while the utilization of qualitative research to develop an understanding of the experience of a selected group of preservice teachers was appropriate, the findings cannot be generalized to broader populations. To enhance the relevance of the findings, the axial approach to the analysis yielded a cross-participant interpretation of data. Second,

researcher as participant was pertinent to this study; however, such a reflexive relationship could influence data interpretation. In order to prevent potential bias, member checking was used with the participants. Last, the limitation of literature on PBE in higher education presented difficulty with defining a theoretical base for the study. However, this limitation illuminated the need for further development in the study of PBE in preservice teacher learning.

Findings

Data are presented under two fields of findings as they relate to the scope of the study: first, the experiences of preservice teachers as students in a proficiency-based education model; and second, how preservice teachers conceptualize using proficiency-based education as educators in K-8 classroom teaching. Embedded within each field are strengths and challenges described through the discovered categories from the disassembling and reassembling phases of data analysis. Following, implications of the findings are presented through the lens of inquiry suggesting directions for moving forward with teacher educator practice.

Preservice Teachers as Students

Participants identified multiple benefits and challenges with respect to using a proficiency-based education model as a student.

Benefits. Preservice teacher appreciations were highlighted through (I) their ability to reflect and self-assess on their own learning, (II) their increased understanding of content through their own choices in activities, and (III) a clear focus on standards as objectives for content attainment.

(I). Reflection played a primary role throughout the study and mention of reflection showed up multiple times in the data. As students thought about reflection as a component of assessment they routinely attributed the process of reflection as a source of knowledge, as indicated during one conversation:

Student A: "I got to truly reflect on what I did this semester and how I did it. I would have not thought about that part of any of the work I did if we did not have to do this assessment model, but I am glad I did."

Student B: "Yeah, it really makes you reflect more on what you've learned and how you've applied your learning."

Student C: "I get to reflect on how much I learn and then how I apply it. And then I think about my reflection and it really shows me how much I have learned about the world of technology and using it in classrooms."

Students also recognized the option of a holistic reflection at the end of the semester if they had not achieved the grade they thought they deserved when their progressions were translated to letter grades. One student commented that she felt her opinions were more valued “when an assessment model includes elements of trust that students are actually going to do work because they want to, not because they have to.” Students shared that they generally struggled with reaching *Applying*; they relied on their capacity to theorize application as opposed to specific enactment. As such, some students did not reach the *Applying* level, however they felt that their overall content attainment and application was indicative of ‘A’ level work. Students shared that their final reflections substantiating their opinions was yet another form of learning the material as they reconsidered everything they had completed through the semester and analyzed it through a lens of knowledge and application.

(II). Assessment data illuminated that student choice in activities yielded multiple pathways of knowledge and skill development in regard to the standards and content. Students utilized various sources of evidence to demonstrate proficiency progression with chosen indicators. What follows is a comparison between two students indicating the different examples they chose to demonstrate levels of proficiency in a standard. Note that when the preservice teachers are referring to “students” they are referring to students in K-8 classrooms.

Standard (Indicator)	Student D	Student E
1(B) Engage in exploring real-world issues and solving authentic problems using digital tools and resources	<i>I found, and helped students find, grade appropriate websites to help learn about life during World War II.</i>	<i>The Diversity walk - I was able to plan a walk using face to face meetings along with collaborating online to find assignments, work on the slide show, share pictures and make a video. I also advertised through social media (Facebook, Twitter, Instagram). This explored the issue of privilege, and the different types of privilege. To learn more about these privileges we all researched a topic online using YouTube videos and the internet.</i>
2(A) Design or adapt relevant learning experiences that	<i>I created a lesson plan that included the research of the</i>	<i>I had kindergarteners use the classroom Nooks for the first</i>

incorporate digital tools and resources	<i>age appropriate websites on World War II. The students used the information they found to write letters to one another as if they were living in that time period.</i>	<i>time in my lesson plan. The students choose if they wanted the book read to them, or wanted to read it themselves. This allowed the students to work at a level that was comfortable for them. Then the students answered questions on the Nook, using a game, to see what they had learned.</i>
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The comparison of the two students was an example of a commonly found occurrence in the data. Student D utilized an ongoing activity to demonstrate the understanding and application of a standard, where Student E chose two different activities. The positive acknowledgement of choice in demonstrating knowledge was evident throughout the data. Students repeatedly commented on the personalization of learning as opposed to “everyone being graded the same way on the same thing.”

(III). Preservice teachers appreciated the focus on standards as opposed to specific assignments. As one student pointed out, he did not have to “worry about any major assignments, but instead you focus solely on what you were learning and making sure you understood the topic/standards.” During face-to-face conversations with students throughout the semester, this sentiment was consistent across individuals as they felt less pressure that their grade was not based on only a few assignments; it was based on their own pathways of learning and associated choice in demonstrating their learning. As a different student noted, “I get to choose what I want to learn as long as it applies to the standard. Why wouldn’t I want to work hard? I’m picking what I’m interested in.” Other students acknowledged that by “knowing exactly what is expected” in terms of the standard or objective allowed them to be more creative in their content attainment and application as they were also not concerned about a “project or paper rubric” to which they had to adhere.

Challenges. Data highlighted students’ difficulties transitioning between more traditional grading approaches to a PBE model. Students identified “a fear of the unknown” as they talked about their course grades. Initially, students tended to equate each progression to a letter grade. For example, one student commented that since she was only *Emerging* on a specific standard, she had a ‘C’ in the class. As students began to understand that the process of learning was

not part of their final grade, they moved away from labeling their progressions as letter grades. However, this created anxiety for many students as they were not able to “know their grade at any given point” in the semester. Some students felt nervous that they “would not do enough to earn an A” while others were concerned that their evidence was not actually at their identified progression level. Students commented at the end of the semester that they disliked converting the progression levels to letter grades. One student felt that “the letter grade is so trivial now. It doesn’t show how much effort I put in all semester.” This student pointed to the spreadsheet full of the evidence of learning and application and exclaimed, “I wish *this* could go on my transcript!”

Preservice Teachers as Educators

Observation notes, and conversations, on preservice teachers’ perceptions of using a PBE model in K-8 education followed a similar pattern of documented benefits and challenges.

Benefits. Participants focused on the process of assessment as it related to their own knowledge and enactment of instruction. They highlighted the use of self-reflection as a way to engage students in monitoring their own learning, as well as the process of formative assessment to support “self-awareness in improvement”. When prompted about their ideas of formative assessment, students referred to the collaborative document, ongoing feedback, face-to-face conversations, and goal setting as all forms of formative assessment in the PBE model. One comment read:

“But it didn’t feel like assessment it was just part of how the class was working together, how we were learning, and how we were being taught. And all of that together me so much information about myself as a student. I know that it gave you [the professor] a ton of information about me. I would love to have all of that information about my classroom students.”

Participants also appreciated the use of choice in evidence, as well as differentiation and personalized opportunities, and described how they could incorporate similar approaches in their future classrooms. Most students felt that with elementary aged learners “you would have to provide the different assessments or the different learning choices for the students.” They did not believe that younger learners would be able to “figure out what were appropriate activities or assignments” to demonstrate knowledge of a standard.

Challenges. Although participants generally favored the potential application of PBE in classroom teaching, they described concerns about the implementation process. Time, as an issue, was given a lot of consideration when students talked about how they could use PBE in elementary classrooms. They commented on the amount of time required to monitor a class of students at different learning progressions over the course of the entire school year, as well as the dynamic nature of providing ongoing feedback to help students move along with content attainment. Given the thorough experiences of self-reflection, participants also questioned whether or not that was possible with early elementary students. Participants largely agreed that without the process of reflection they would not have been able to “really understand what we are learning.”

For many of the students though, implementation of PBE as an educator was speculative because they had never been in a PBE classroom. However, two students were in field placements where schools were piloting PBE models at the elementary level. When prompted about comparisons, they commented that the only similarity was the use of standards as the learning objectives. This sparked conversations about consistency between classrooms and grade levels in schools, as well as statewide districts. Concerns were raised about transfer or new students, students receiving special education services, and students where English was not their primary language. The last concern was surprising and students were asked why that might be an issue. Responses included that since a PBE model is dependent on standards, a grasp of language is necessary to know what is expected. As one student noted, “understanding how the wording of the standard connected to the learning activities was the biggest challenge.”

Implications

The findings from this study illuminate the benefits of a proficiency-based education model in preservice teacher preparation. Considering the participants' perceptions as teachers on instruction and assessment related to proficiency-based education in K-8 classrooms, they generally agreed that self-reflection, differentiation, and personalized learning were effective pedagogical strategies to engage students in their own learning. This parallels early research on PBE in K-8 classrooms where teachers identified increased student ownership of their learning (Silvernail et al., 2013). When associating those opinions with their own experiences with a PBE model in the university setting, the participants generally favored the opportunities to demonstrate their learning through choice and reflection in their knowledge construction and application. The advantages of the PBE model were most evident when considering the overall knowledge

experiences of the preservice teachers. Although the assessment model utilized cognitive levels of content knowledge progression (Marzano & Kendall, 2007), data illuminated exposed shifts of student thinking that suggested the preservice teachers were moving beyond content attainment, to having the ability to self-monitor their own understanding on why they were learning specific subject matters. Furthermore, through reflection students communicated the importance about their learning, and application of their learning, in classrooms.

Although the piloted PBE framework was initially created as a model of assessment, the benefits highlighted in the data point less toward assessment and more toward effective teaching practices. Through the affordance of choice, the participants simultaneously identified specific activities that were of interest, and learning objectives and standards necessary for the course. Students then explored and engaged in those activities, and connected their experiences to the standards. Furthermore, students were encouraged to continuously reflect on their learning as a way of demonstrating their knowledge. The structure of the course throughout the semester utilized standards, ongoing assessments, flexible pathways for learning and application, as well as breaking out of the direct instruction model and allowing for more student-centeredness in the learning process. These instructional practices, and the associated learning activities, align to suggested methods in a PBE model (Johnson, 2011; Sturges, 2014). However, it is not necessary to be working in a PBE model to adopt such practices. The highlighted challenges of the PBE model point toward complications of time and scalability, not necessarily the instructional strategies and applicable opportunities of information gathering related to content attainment and application. As research points toward benefits when preservice teachers are provided multiple opportunities to integrate theory to practice (Darling-Hammond, 2000, 2006; Korthagen, 2010a, 2010b), considerations should be made on whether or not that practice needs to emulate policy enactment in preference to exposure and experience of what is considered effective instruction. Although it might not be necessary to expose all preservice teachers to proficiency-based education, data from this study suggested benefits in teacher preparation when instructional strategies focused on choice and reflection. These modes of instruction could be adopted across teacher education courses regardless of the associated assessment reporting in order to strengthen preservice teacher opportunity to engage in deep reflection of their own learning. Although legislation and the future of PBE is not clear, policy need not overshadow best teaching practices that benefit student learning and preservice teacher developme

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