



How Early Field Experiences Impact the Development of STEM Pre-Service Teacher's Identity

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Abstract

Teacher identity stems from personal identity and one's desires relative to their professional goals as a teacher. Understanding one's personal motivation to teach is a first step towards establishing a sense of teacher self while beginning to craft a personal identity as a teacher and a teacher identity in the classroom. The purpose of this study is to explore pre-service teachers' initial thoughts surrounding their teacher identity. This study looks at pre- and post-survey data collected during the first and last days of their first introduction to teaching course. Fifty-three pre-service teachers were asked the same survey questions on the first and last days of their first introductory STEM teaching course through which they planned and taught their first lesson. Findings suggest students gained significant insight into the role of the teacher in the classroom while also gaining greater understanding of how they see their personality aligning to the role of a classroom teacher. The results of this study indicate a recommendation to provide early field experience in teacher education curriculums.

Keywords: teacher identity, pre-service teaches, STEM teacher training, action research

Introduction

Development of one's teacher identity is an ongoing process (Beijaard, Meijer, & Verloop, 2004). Friesen and Besley (2013) state 'an important component of the process of learning to become a teacher is the development of a professional identity' (p. 23) and argue learning how to be a teacher is as important as learning how to teach content. Understanding your role in the classroom and becoming comfortable with your position as a teacher, are elements of one's professional identity that begin to develop in teacher preparation programs and continue to evolve upon entry into the profession (Chong, Low, & Goh, 2011). After being a student for 12+ years, many people claim to understand the role of a teacher, this concept was termed the 'apprenticeship of observation' by Lortie (1975). After spending more time in the classroom, pre-service teachers quickly gain a new respect for their former teachers who made teaching seem effortless (Wall, 2016). Experienced teachers agree that teaching is more inclusive than the outwardly observable attributes exhibited in the classroom (Korthagen, 2004). While most claim to understand the role of a teacher, Eingurt (1983) argues that teaching is an art which only few are able to master.

Students entering the teaching profession have often dreamt about their future classroom and believe they possess the characteristics necessary to be a teacher. However, have they formulated their teacher identity? Do they feel invested in the teaching profession after their first teaching experience? To explore these two questions, this study reviews 38 paired pre- and post-survey responses from pre-service teachers to look at interest in pursuing a career in teaching a STEM subject before and after their

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first teaching experience. Understanding pre-service teacher identity development could aid in teacher preparation program's ability to increase opportunities with foster positive teacher identity growth. Enabling pre-service teachers to learn more about teaching, to see themselves as a teacher, and to learn what it means to be a teacher are the broader spectrum goals associated with this research.

For this study, frameworks from Gee (2000) and Beijaard, Verloop, and Vermunt (2004) are combined to create a three-circle Venn Diagram which considers teacher identity development. The objective of this study is to see the impact early field-experiences have on the development of teacher identities in pre-service teachers.

Literature Review

There is no clear, concise definition of teacher professional identity, either it is not defined, or researchers choose to focus on various aspects, but most of the literature describes teacher identity as an ongoing process (Beijaard et al., 2004; Beauchamp & Thomas, 2009; Lee & Schallert, 2016). In a review of the literature from 1988 to 2000, Beijaard et al. (2004) identified four features of a teacher's professional identity: it is an ongoing process of interpretation and re-interpretation, implies both person and context, consists of sub-identities, and teachers must exercise agency (p. 122). The development of teacher identity is an ongoing process and does not quickly follow a linear progression (Akkerman & Meijer, 2011; Canrinus et al., 2012; Flores & Day, 2006; Geijssel & Meijers, 2005). Therefore, pre-service teachers will change their professional identities as they gain more experience and spend more time in the classroom with students. Izadinia (2013) conducted a more expansive systematic literature review on professional identities of pre-service teachers; this review revealed several components that shape their professional identity. The components were pre-service teachers' confidence, sense of agency, self-awareness, critical consciousness, cognitive knowledge, teacher's voice, and relationship with colleagues, parents, and pupils (Izadinia, 2013, p. 708). McMahan and Garza (2016) found early field experiences played a role in pre-service teachers' self-awareness of what it means to be a teacher. Field experiences provide pre-service teachers the opportunity to collaborate with a veteran teacher and participate in a real-life classroom. Early field experiences give pre-service teachers a chance to build their confidence and have a richer opportunity while student teaching (McMahan et al., 2015).

Pre-service teachers' experiences as students and preconceived beliefs about teaching are the beginning factors that shape their professional identity (Chong & Low, 2009; Stenberg & Maaranen, 2020). Upon entering teacher preparation programs, pre-service teachers think teaching is a simple task and students will immediately understand the material after they deliver a lesson (Wall, 2016). However, at the end of their teacher preparation programs, pre-service teachers admitted teaching was harder than they initially believed (Chong et al, 2011). These misconceptions about teaching indicate pre-service teachers must learn to first think about all aspects of teaching. Pre-service teachers are only drawing on their personal experiences and extrinsic views of the classroom, so they must learn to reflect on their practice as well.

The topic of teacher identity has become a research focus as a result of shifts in beliefs surrounding the role of a teacher (Friesen & Besley, 2013; Maaranen & Stenberg, 2020; Lee & Schallert, 2016). Ruohotie-Lyhty and Moate (2016) cite numerous studies examining the body of literature that outlines a teacher's professional identity relative to their perceptions of themselves serving in the role of a teacher. Akkerman and Meijer (2011) explore the limitations of current beliefs regarding teacher identity while also looking at a holistic view of what it means to be a teacher. The studies examined offer an outsider's view of teachers and developing teacher identities. Unlike the research available, this study provides an intrinsic viewpoint of how students in teacher education programs begin to view themselves as teachers. The purpose of this study is to move to an intrinsic vantage point as to explore how students change, or solidify, their mindsets regarding teaching and the role of a teacher after their very first teaching experience. Unlike other research, which takes an extrinsic vantage point, the participants in

this study are at the initial stages of understanding the role of a teacher and are beginning to self-wrestle with the idea of developing their own teacher identity. The intrinsic vantage point of this study allows researchers to see the first step students undergo as they begin to think about developing a teacher identity and interacting with the teaching profession. Additionally, this study looks at viewpoints from all students embarking on an introductory teaching course. Many of these students will decide teaching is not for them and discontinue their teacher preparation trajectory. With a heterogeneous grouping, the researchers are not looking solely at pre-service teachers who are dedicated to pursuing teaching as a profession, but also students who begin to wrestle with their teacher identity and decide a teacher identity is not their desire.

Theoretical Framework

Gee (2000) offers four different perspectives of identity: nature-identity, institution-identity, discourse-identity, and affinity-identity. In different situations, a certain identity may be more predominant than others. However, these identities all work together in complex ways, shaping how others perceive an individual to be a 'certain kind of person' (Gee, 2000). Each identity has its own unique source of power. The nature-identity or (N-identity) comes from nature and it only gets recognized through the other three identities. A person's ethnicity, sex, eye color, hair color, and hair texture are all examples of N-identities. Institutional identity or (I-identity) gain their power from authorities within institutions and may be a calling or an imposition. A calling is something a person wants to be such as a teacher, doctor, or lawyer. On the other hand, some roles may be an imposition, Gee (2000) uses the example of being a prisoner. I-identities encompass all the rules, regulations, laws, and principles enforced by institutions on an individual in the position. The third identity is discourse or (D-identity) and the source of its power is through recognition by others. Discourse or dialogue identity comes from individuals who choose to surround themselves with a person and the words they use to describe them. However, people may actively recruit certain responses from others, so D-identity can be an ascription or an achievement. Affinity or A-identity is the fourth perspective, and the source of its power comes from an affinity group. People who belong to specific affinity groups have 'allegiance to, access to, and participate in specific practices that provide each of the group's members the requisite experiences' (Gee, 2000, p. 105). People usually desire to be involved with a certain affinity group, but Gee (2000) does provide instances where businesses use workers I-identities to create affinity groups.

In this study, Gee's (2000) framework is used to examine how pre-service teachers formulate their own teacher identity. Pre-service teachers lack the I-identity of 'teacher' from a K-12 school, since they are not formally employed. However, their I-identity of 'pre-service teacher' and 'student' comes from the courses they are enrolled in at a college or university. In order to maintain their position as a pre-service teacher in these institutions there are certain rules they must follow. Because some pre-service teachers may have such a strong affinity for teaching, they may already be involved in teacher affinity groups. Other people may also describe them as being patient or having a good rapport with children, which are traits pre-service teachers claim as being important attributes of a teacher (Ferguson & Sutphin, 2019). Gee's (2000) four identity perspectives offer us a way to view pre-service teachers' identity development before and after their first teaching experience.

Beijaard, Verloop, and Vermunt (2000) studied experienced secondary teachers' perceptions of their professional identity, but at the time, and still currently, there was no clear definition of professional identity (Beijaard et al. 2004), so they focused on subject matter, pedagogical, and didactical expertise. Subject matter expertise deals with how well the teacher understands and demonstrates skills in their content area. Pedagogical experts are teachers who focus on supporting student's social, emotional, and moral development. The didactical expert is concerned with the planning, execution, and evaluation of lessons. Beijaard et al. (2000) found most teachers in their study perceived themselves as subject matter experts early in their careers.

The framework for this study is a combination of frameworks by Gee (2000) and Beijaard, Verloop, and Vermunt (2004). Gee (2000) defines identity as ‘what it means to be a certain kind of person ’(p. 100). For the purpose of this article, the certain kind of person considered is a teacher. Gee (2000) discusses four ways to view identity, as mentioned above and outlined by Table 1:

Table 1.
Gee's four identities

Process		Power	Source of Power
1. Nature-identity: a state	developed from	forces	in nature
2. Institution-identity: a position	authorized by	authorities	in nature
3. Discourse-identity	recognized in	the discourse/dialog	of/with rational individuals
4. Affinity-identity: experiences	shared in	the practice	of affinity groups

In conjunction with Gee’s four identities framework, Gee’s (2000) description of ‘Who a teacher is ’and Beijaard et al.’s (2000) description of ‘What a teacher does ’were combined with the goal of looking at moving students towards seeing themselves as teachers, Figure 1 shows a three-piece Venn Diagram framework that was developed for this study.

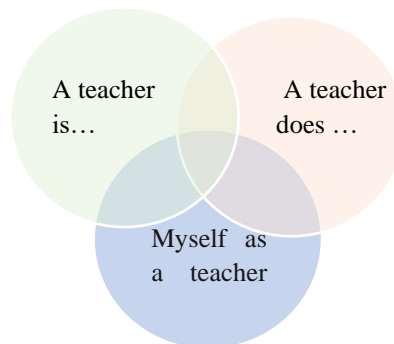


Figure 1: Expanded framework for teacher identity

In preparing pre-service teachers, our goal is to have students understand who a teacher is, recognize what a teacher does, and to be able to view themselves as a teacher. When students have solidified their teacher identity, they would fall into the three-way overlapping region embodied by each aspect of their teacher identity.

Methodology

Participants

Participants for this study were 53 individuals enrolled in a first-semester STEM teacher preparation course at a university in eastern Virginia. Specific demographic data was not collected, but the course is designed for traditional freshmen entering the university after high school and transfer students who had spent time at a community college. Thus, participants may have various class standings, but they are all either mathematics, biology, chemistry, ocean and earth science, physics, or occupational/technology studies majors. Some participants have already declared education as their minor while others are still not fully committed. The course is designed to give students a chance to

explore teaching by introducing them to writing lesson plans and offering their first field experience. Ultimately, the students who commit to seeking an education minor will receive licensure in their major area at the secondary level. However, their first field experience in this course is at the elementary level which is intended to help them feel less intimidated about teaching, provide a greater age spread between the participants and the elementary students, and permit the teaching of more basic content in case higher levels of content study in their major area had not yet been completed.

Procedures

Upon procuring proper IRB approval as exempt for this study involving human subjects (reference number 1109576-1), a four-question pre-survey was given to 53 STEM majors enrolled in an introductory teaching course on the first day of class. Throughout the semester, students were assigned a mentor teacher who has several years of experience in the teaching field and working at a local elementary school as a mathematics or science educator. The students participated in researching, planning, and presenting lessons to elementary school mathematics or science students. During the 14-week semester, the students first spent 5 weeks learning about lesson plans and the 5-E lesson plan format. During the next 5 weeks, students selected a focus learning objective and researched student-centered, engaging activities relative to their lesson objectives. During this time, students also began formulating their own 5E lesson plan for their learning objective and activity. Once the lesson plan was created, students spent 1-2 weeks reviewing, practicing, and preparing to present their lesson. Students met with their course instructor and their mentor teacher to ensure lesson planning details were completed and the lesson was ready to present. In addition to planning and presenting their lesson in the elementary classroom, the students also observed their mentor teacher in the classroom on three separate occasions throughout the semester. The students also participated in reflection activities and discussions to conclude the semester. This lesson was the students' first experience acting as a classroom teacher. Students were given a post survey, which was identical to the four-question pre-survey, on the last day of class. Forty-three students completed the post survey. The researchers collected the surveys and matched the pre-and post-surveys according to the student's assigned numbers; 38 pairs of surveys were collected and became the data for this study. Surveys were then randomly divided between the two researchers who independently reviewed student responses for themes. After reviewing half of the responses, the researchers met to discuss themes and trade papers to continue reviewing and coding students' responses. Once all responses were reviewed and coded by both researchers, themes were discussed, and findings finalized.

Instrument

Student views before any exposure to teaching were desired, so the instrument developed was crafted to be short, basic, and specific. The goal of this instrument was to understand students' perspectives before and after their first teaching experience, so questions were specifically asked on these topics. After a few basic questions such as number, and class session, the questionnaire contained four questions; questions 3 and 4, as shown in Figure 2, are the focus of this article. These questions were selected to gather student viewpoints on their interest in entering the teaching field and to allow opportunities for students' voices to be heard relative to their comments towards the teaching field. Views were desired both before and after exposure to course content and teaching experience, so the same questions were used on both the pre- and post-surveys. Two research questions were addressed: have preservice STEM teachers enrolled in an introductory teaching course formulated their teacher identity? Do preservice STEM teachers feel invested in the teaching profession after their first teaching experience?

3. How interested are you in teaching?						
1	2	3	4	5	6	7
Not Interested			Somewhat Interested			Very Interested
4. Anything you would like to add regarding your thoughts about the teaching profession or becoming a teacher?						

Figure 2: Survey questions

Analysis process

Two researchers coded survey responses independently and created tally charts to explore developing themes. The researchers then compared codes and discussed any differences until agreement was reached on all codes. After coding, the researchers worked cooperatively to identify categories and themes to further refine and synthesize the data.

For this study, Gee's (2000) four ways to view identity were paired with student responses. Nature-identity traits were identified as forces of nature acting on student's decisions to enter the teaching profession. For example, one student commented that they were nervous to get in front of students and speak. Nervousness of public speaking was coded as a natural force impacting the students' identity as a teacher. Institution-identity traits were considered comments relative to the introduction to teaching course or the university/program through which students were currently enrolled. For example, one student commented on their post survey that 'taking this course increased my interest and knowledge regarding teaching.' Discourse-identities in this study were classified as comments relative to interpersonal traits inhibited by the STEM students. For example, one student commented teachers 'must be self-motivated.' For the purpose of this study, the final category of affinity-identity was coded as comments which conveyed student's interest in being part of the affinity group of teachers. For example, one student commented on their post-survey 'I am very excited to become a teacher' and this was showing their interest in joining the affinity group of teachers.

After coding for the four identities, the researchers then coded each response relative to the framework shown in Figure 1. Each student's comment in the pre and post survey was reviewed to see if students focused on what a teacher does, who a teacher is, or viewing themselves as a teacher. For example, one student commented 'I have dreamt of being a teacher since I was little, and I know I was meant to teach.' This comment conveyed that the student saw themselves as a teacher. Another student commented on their post survey 'It is a lot of fun and quite rewarding but at the same time very challenging.' This comment related to what a teacher does and was coded accordingly. An additional student commented 'be the teacher students remember and for the right reasons.' This comment was coded as who a teacher is because it references the character of a teacher.

Findings

Questions 1 and 2 asked students their course section number and instructor and were thus not relevant to the research for this study. Question 3 asked students to complete a Likert scale rating their interests in entering the teaching field. To look at the students' pre- and post- course interest in entering the teaching profession, the 38 pairs of surveys were reviewed. Table 2 shows the number and percentage of student responses that stayed at the same Likert scale level, increased from pre- to post-survey, or decreased from pre- to post-survey.

Table 2.
Likert Scale Responses

Row Labels	Number	Percent
Decrease	7	18.42
Increase	7	18.42
Same	24	63.16
Total	38	

Sixty-three percent of students indicate the same level of interest in pursuing teaching on their pre- and post-surveys. Table 3 shows the score indications for each selection of students. Looking at Table 3, the first column shows the pre-survey Likert scale scores according to whether the student's response decreased, increased or stayed the same from the pre- to post-survey. For example, the first line under decreased indicates a student initially responded on their pre-survey with an interest level of 3, but on their post survey they decreased their interest level to 1. Of the seven students whose interest levels decreased from their pre- to post-survey, one student went from a three to a one, one student went from a four to a one, one student went from a four to a two, one student went from a six to a four, two students went from a six to a five, and one student went from a seven to a four.

Table 3.
Pre and Post Responses

Likert Scale Pre-Response	Likert Scale Post-Response						Grand Total
	1	2	4	5	6	7	
Decrease	2	1	2	2			7
3	1						1
4	1	1					2
6			1	2			3
7			1				1
Increase			1	1	1	4	7
3			1				1
4				1			1
5					1		1
6						4	4
Same			1	3	8	12	24
4			1				1
5				3			3
6					8		8
7						12	12
Total	2	1	4	6	9	16	38

Question four asked students if there is 'Anything you would like to add regarding your thoughts about the teaching profession or becoming a teacher..' It was not required that students participate in the survey or answer all survey questions, so only 17 of the 38 paired students provided statements for this question on their post-survey. Of these 17 students only one student whose interest decreased left a comment: 'It's not for me'. This student did not leave a comment on their pre-survey, but their post-survey comment substantiates the student's decision to move from a level 3 interest to a level 1 interest. Four students whose interest level increased from the pre- to post-survey left comments. One student

commented 'I cannot wait 'while another commented 'this course really sparked my interest.' The additional two responses included 'Knowing the teacher in the mirror.' 'A teacher needs to know his/her limitations, strengths, weaknesses and impressions 'and 'It is a tough job, but somebody has to do it.' Of the students whose interest level stayed the same, 12 left comments to substantiate their responses. Four of these 12 students left comments expressing their excitement to continue towards becoming a teacher in a secondary STEM field, two expressed their excitement for becoming a teacher but also commented they would like to continue at the elementary level, and two commented on being nervous, but still interested in pursuing teaching. The remaining students commented with statements such as 'It is a lot of fun and quite rewarding but at the same time very challenging 'and 'I think that teachers are really underappreciated.'

Cross referencing the responses from question three and the students 'comments from question four, themes of teacher identity developed. Student responses were reviewed and coded relative to their alignment with the four ways to view identity as described by Gee (2000). Table 4 shows the alignment of pre and post survey responses relative to the identities of Nature (N), Institution (I), Discourse (D) and Affinity (A).

Table 4.
Identity Alignment

	N	I	D	A
Pre	1	4	10	7
Post	0	3	8	9

Student comments from question four on both the pre- and post-surveys were reviewed in accordance with the framework of Gee's (2000; 2001) identity classifications. Student comments which exhibited a relationship to the Nature identity contained verbiage relative to forces of nature impacting their decision. On the pre-survey, one student commented that they are nervous about forgetting what they want to say while they are teaching the elementary students. The nervousness relative to speaking in a classroom environment was interpreted as a force stemming from natural, environmental, means. No students commented relative to forces of nature on the post-survey. On the pre-survey, four students made comments in alignment with the Institution identity. Three students commented relative to the Institution identity on the post-survey. Institution Identity comments were coded as comments in which students reference their introduction to teaching course or the teacher preparation program. For example, on the pre-survey one student commented 'I hope I enjoy this course and learn a lot about teaching that I didn't know before.' A second student commented on their pre-survey 'I hope this class will help me with my flaws and allow me to be a better educator.' Institution identity comments on the post-survey included statements such as 'This program really sparked my interest 'and 'Taking this course increased my interest and knowledge regarding teaching.' Comments relative to the Discourse identity were identified by the statement of teacher traits. For example, in the pre-survey students commented on the importance of teachers, the personal rewards associated with teaching, and the self-motivation of teachers. On the post-survey, Discourse identity comments included: 'I have a lot of work to do,' 'It's fun and interesting', 'It's a tough job but somebody has to do it', and 'It is a lot harder than it looks'.

Interestingly, in the pre-survey, 77% of responses correlated to discourse and affinity identity traits while in the post-survey, 85% of responses correlated to discourse and affinity identity traits. This is an interesting correlation because it shows that after their first experience as a teacher, students have moved to a better identification with the traits associated with being a teacher and the affinity group of teachers.

As students grow their teacher identities, it would be expected that students would gravitate towards wanting to join the affinity group of teachers and exhibit individual teacher traits.

Looking at students' comments relative to the expanded framework in Figure 1, pre- and post-survey Venn Diagrams were developed. In Figures 3 and 4, the numbers in each Venn Diagram region indicate the tally of student comments that fell into that region. The region of overlap was coded as comments that referenced traits from more than one region.

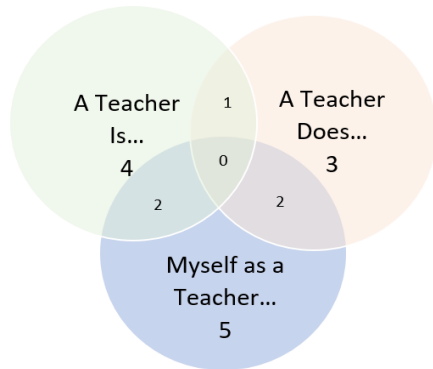


Figure 3: Pre-Survey Venn Diagram

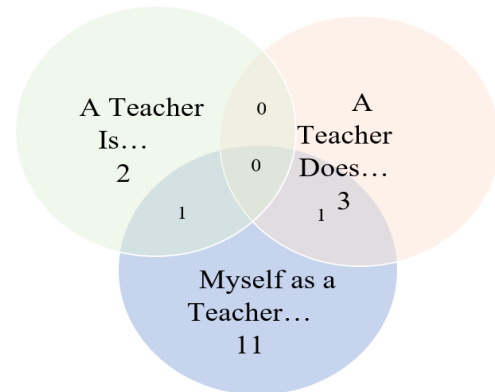


Figure 4: Post-Survey Venn Diagram

When comparing the pre and post survey Venn Diagrams, we see that initially six students made comments relative to the traits of who a teacher is, six students commented on what a teacher does, and nine students commented on seeing themselves as a teacher. In the post survey, 13 students' comments addressed themselves as teachers, three comments addressed what a teacher is and four comments addressed what a teacher does. The claim that students are beginning to see themselves as a teacher after their first teaching experience, is substantiated by the increase in comments detailing the students as teachers and decreases in the frequency of comments regarding what a teacher does or who a teacher is. This movement from an outwardly observable understanding of what a teacher does and who a teacher is to an intrinsic view of oneself as a teacher further validates the claim that students are moving towards identifying with the teacher affinity group and beginning to see themselves as teachers.

Discussion

A common format for teacher preparation programs is to have students complete a significant amount of their degree program coursework during their freshman and sophomore years and then begin integrated field experiences as a junior or senior before embarking on their student teaching experience. The students who participated in this study had the opportunity to participate in an immersive field experience the very first semester of their teacher preparation and STEM degree programs. In addition to promoting early field experiences, having time in the classroom early on in their program of study provides more time for students to reflect on their teaching experiences and build their teacher identity. After teaching one lesson in an elementary school classroom, some students realized their interest in teaching had decreased. While for other students, this one teaching episode increased their interest in the profession and thus they have a desire to build their affinity identity. Most of the students kept their same level of interest which may indicate they understood one experience was not enough to define their interest and shape their professional teacher identity. Beijaard et al. (2004) and Friesen and Besley (2013) agree that development of a teacher identity is an ongoing learning process. Knowing that teacher identity grows, changes and evolves is valuable information for teacher preparation programs to use to continue to provide rich, contextualized activities and experiences for students seeking to become secondary STEM educators. We assert that starting this process early in a teacher development program

provides increased time for self-reflection while echoing Chong, Low, and Goh (2011) comment that the development of a teacher identity is an evolving process.

Teacher identity is described as an ongoing process (Beijaard et al., 2004; Beauchamp & Thomas, 2009, Akkerman & Meijer, 2011; Canrinus et al., 2012; Flores & Day, 2006; Geijssel & Meijers, 2005). To this extent, preservice teachers should be encouraged to continuously reflect on the circuitous route through which they transverse while developing their teacher identity. The questions asked in this study allowed students to reflect on their interest in teaching and express their thoughts on entering the profession. Other factors such as value/belief system, personality, context, and reflective practice can shape preservice teachers' identities (Buendía-Arias et al., 2020). Thus, we agree with Stenberg et al. (2014) that students should be given opportunities to reflect on their teacher identities in their teacher preparation programs.

Before understanding their own teacher identity, we suggest preservice teachers first need to understand perspectives of identity. Like each teacher has their own personality, each identity has its own unique building progression (Gee, 2000). Our framework follows from Gee's (2000) categorizing of teacher identities and Beijaard et al.'s (2000) descriptions of 'Who a teacher is' and 'What a teacher does'. This framework offers a succinct means through which to view pre-service teacher identity development and leads to our conclusion that participating in early field experiences assists in propelling forward pre-service teachers' development of their own teacher identity as they begin to think of themselves as teachers through a lens of better understanding what a teacher does.

With a void of similar research that is current, this study contributes to the fields of teacher development, supporting pre-service teachers, and structuring of pre-service teacher coursework and field experiences. The implementations of this study are multifaceted. Foremost, the findings of this study will impact how activities are developed and implemented in introductory teaching courses to help support reflection, personal growth and continued questioning about who a teacher is, what a teacher does, and how to continue to see themselves as a teacher. Additionally, the findings of this study suggest a continued need for supporting pre-service teachers as they explore the role of the teacher and practice different teaching strategies while developing and growing their own teacher identity.

Conclusion

After teaching one lesson students made more comments related to seeing themselves as teacher. With more teaching experience students will move into seeing themselves as a teacher and solidify their understanding of who a teacher is and what a teacher does. We assert as students gain more experience and figure out who they are their comments relative to teaching would be expected to focus more on the central overlapping region in our framework as their teacher identities develop. Asking students to reflect on their first teaching experience and other teaching experiences thereafter will help them formulate their viewpoints relative to their teacher identity. Buendia-Arias et al. (2020) found that reflective practice does help shape preservice teachers' identity, so our goal is to incorporate more reflective practice in our course and preparation program. The results of this study are being used to revisit course goals, enhance assignments that prompt guided student reflection, and expand course discussions relative to the roles of a teacher, the teaching profession, and building individual teacher identities.

We understand that teacher identity development is an ongoing process, so a limitation of this study is that the students were basing their interest in teaching and comments about the profession on limited exposure in the classroom. If the introductory teaching class was their first time back in a classroom since being a K12 student, then they only had four visits before writing their comments. With a goal of moving students to a comprehensive understanding of the teaching profession while also helping students identify themselves as a teacher, as depicted by the central overlapping region of all three circles in Figure 4, the researchers will seek to continue to have students reflect on different aspects of

teaching through the introductory teaching course and teacher preparation program as suggested by Stenberg et al. (2014). Having solidified a two-part framework that provides insight into student's development of their teacher identity, it would be interesting to continue this research by following this group of students through their entire teacher preparation program and document the changes in perceptions through their reflections on each teaching experience. A longitudinal study would provide a better understanding of how our students' teacher identity changes over time.

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