



Practicums and student teachers' identity formation: A study using the explanatory sequential design

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Abstract

It has been noted that practicums enhance the cognitive and the emotional aspects of teacher identity construction. Regarding the former, research has highlighted that during practicums, the student teachers' sense of preparedness is related to how capable they are when it comes to their ability to apply theoretical knowledge to the various requirements of the learning contexts such as the diversity of the pupils' cultural and social backgrounds. In addition, student teachers' reflexivity has been emphasized as a core component of initial teacher education. However, the details of how the emotional aspect of teacher identity interacts with their motives for becoming teachers, their sense of preparedness, and their reflexivity have not yet been given special emphasis. For that purpose, in this article, we investigate the reasons why, during practicums, student teachers have the opportunity to craft their identification with teaching as a social role. By implementing an explanatory sequential research design, our aim in this article is to highlight that practicums is the space in which three specific dimensions of student teachers' identification with the role of teacher – self-realization, voluntarism, and social self – make them rethink their motives for wanting to become teachers, frame their sense of preparedness, and affect classroom reflexivity.

Keywords: Explanatory sequential design; Practicums; Reflexivity; Student teacher identity

1. Introduction

Within higher education, initial teacher education [ITE] programs represent a significant area of inquiry, as research on program quality and the development of teachers' professional identity demonstrates (Abraham et al., 2021; Cheng et al., 2012; Darling-Hammond et al., 2005; Grossman, 2008; Hennissen et al., 2017; Korthagen, 2010). A central theme in this discussion concerns how the practicum enables student teachers [STs] to critically reflect on their personal beliefs and values, thereby contributing to the formation of their professional identity (McKay & Manning, 2019). Research indicates that STs undergo shifts in their perceptions of professional identity during their practicum experience (Williams, 2014). Practicums offer opportunities for observation, collaboration, and skill development (Forzani, 2014). Notably, the ability to observe effective teaching interactions in others is linked to the development of STs' own classroom practices. Moreover, practicums play a crucial role in fostering cultural awareness, as STs' biases and personal beliefs shape the pedagogical approaches they adopt (Kumar & Hamer, 2013). Another key issue in the field is the disconnect between theory and teaching practice in ITE programs (Hennissen et al., 2017). Internationally, the concept of "practicalizing theoretical knowledge" (Tsui, 2009) describes how graduates of pedagogical programs (both preschool and school-age education) transform theoretical knowledge into personal, subjective interpretations, which, in turn, inform their selection and application of teaching methodologies.

In this article, we explore how the practicum, along with the sense of preparedness it fosters, can be examined through the lens of teacher identity. We argue that teacher identity serves as a key differentiator in how student teachers perceive the process of "practicalizing" during their practicum and how they assess their own readiness as future educators. To achieve this, we have structured our article as follows. First, we provide a brief overview of the theoretical concepts underpinning our mixed-method research design. We then present key findings from the literature review and outline the methodological framework guiding our study. Next, we analyze the data in

accordance with mixed-method research principles. Finally, we discuss how our findings compare to and diverge from previous research.

2. Theoretical Grounding of the Research Design

A main theme that has emerged from the various theoretical perspectives on teachers' professional identity concerns whether STs' motivation to become teachers stems from intrinsic or external self-understandings (Chen et al., 2020; Keary et al., 2020; Sukenti & Tambak, 2026). Given that social identity is a process and a becoming, research on ST's identity formation must consider how their motives to become teachers take shape during their passage through or progression through the pedagogy departments and especially the practicum. This process is crucial because prospective teachers are provided with pedagogical tools for developing their skills and their awareness of the importance of mastering both the knowledge content and diverse psychological and education strategies necessary to meet classroom requirements (Izadinia, 2015; Qhobela, 2026). This means that crucial aspects of ST's professional identities are formed during initial teacher training processes. One of these aspects concerns the fact that STs' professional identity is embedded not only in whether they are skilled enough to deal with various learning requirements, but also in the extent to which they are engaged in, or committed to, the teaching profession as a social role. This has been highlighted by many scholars as extremely important because it touches upon the moral and the emotional dimensions of STs' professional identity (Lamote & Engels, 2010). By "moral dimension" we mean that engagement in the teaching profession as a social role, concerns how they make sense of the teacher-student relationship (Gonzalez-Berruga, 2025; van der Want et al., 2017), and the emotional dimension concerns how prospective teachers perceive their social image through the looking glass self.

The sense of preparedness is another crucial aspect, because it integrates most of the skills prospective teachers have to develop (Darling-Hammond et al., 2017). These include the extent to which STs are aware of their pupils' various cultural, social, and family differences and thus implement principles of inclusive education. This means that STs can handle the knowledge base of their discipline and are able to put into practice teaching skills related to differential learning strategies (Tschannen-Moran & Hoy, 2001). In addition, STs must be able to create a safe environment for their pupils and to engage in relationships of cooperation with colleagues and mentors. All these facets of the sense of preparedness constitute a web of capabilities that STs believe enable them to engage even the most "withdrawn" of their pupils. To sum up, the main conceptual constructs upon which our research design is based are STs' motives for becoming teachers, STs' sense of preparedness, STs' identification with the role of teacher, and the contribution of the practicum to STs' reflexivity. We have used these concepts to structure the literature review we present in the next section.

3. Literature Review

Research on STs' motives for becoming teachers has highlighted the role of their perceptions about their teaching ability, personal and social utility values, and positive prior experiences of teaching and learning (Richardson & Watt, 2006). König and Rothland (2012) demonstrated that extrinsic motivation positively impacts learning gains. In contrast, Cornali (2019) found no clear predominance of either altruistic or intrinsic motivations. According to Sinclair (2008), student teachers are driven by multiple motivations, with the most common reasons for choosing teaching being a positive self-evaluation of their attributes and capabilities, a desire to work with children, and the intellectual stimulation provided by the profession. Likewise, Bergmark et al. (2018) highlighted the diverse motivations behind students' career choices, as well as the influence of their prior school experiences and emerging pedagogical identities.

Several studies investigate how the practicum experience influences student teachers' motives, preparedness, and reflexivity. The scaffolding provided by educators to students to promote critical reflection is of great importance because it enhances their engagement in becoming teachers (Adams et al., 2005). It has been shown that teacher educators can empower student teachers

regarding the emotional challenges inherent in teaching and help them to focus on developing their identity (Olsen, 2008). Tang et al. (2017) revealed that student teachers felt professionally competent, and perceived that theoretical knowledge was a decisive factor in their professional decisions to become teachers. They also reflected on their teaching practice and adapted the theoretical knowledge to the teaching context. Darling-Hammond et al. (2005) examined how practicum experiences enhance student teachers' sense of preparedness, finding that teachers' effectiveness is strongly linked to the quality of their training. Studies reporting positive effects of teacher education and certification on student achievement further support this perspective. Similarly, Ingvarson et al. (2007) found that the most effective professional learning programs—those that lead to improved student learning outcomes—enhance teachers' knowledge of the content they are expected to teach, how students learn that content, how to support student learning, and how to assess student progress. Such knowledge is essential for developing pedagogical skills and preparedness. Notably, their study does not support prioritizing reflective practice and pedagogy over the development of substantive professional knowledge. Reflective practice involves interactive, mutual, and reflexive engagement between researchers and participants, shaped by their complex and unique relationships (Watanabe, 2022).

Smith and Hodson's (2010) findings suggest that STs were able to identify ways in which 'theory' had positively influenced their practice. Korthagen (2004) aimed to raise questions about teacher training pedagogy and explore their relationship to the essential qualities of effective teaching and the pathways to becoming a skilled teacher. Dome et al. (2005) investigated how preservice teachers perceive the significance of their present and past experiences for their role as educators, and how students' identities influence the teaching and learning experiences they provide. Stenberg et al. (2016) indicated that educational studies should incorporate educational theory into instructional practice in a dialectical process. Reflection is a crucial element in teachers' development and the integration of theory and practice. The development of the structure of teachers' practicums can support the theory-practice dialogue. Hennissen et al. (2017) found that when there is insufficient interaction between the institute and the practicum, teacher mentors tend to promote their own ideas and practices to pre-service teachers. Cheng et al. (2012) presented the results of a four-year longitudinal study in Asia that aimed to investigate the professional learning of student-teachers in Bachelor of Education programs. The findings showed that teacher educators have a significant role in facilitating the development of attitudes and reflection skills. Cheng et al. (2014) explained and analyzed the development of pedagogical understanding among student-teachers in an initial teacher education program. The findings from the three selected cases provide insight into why some individual student-teachers show continuous development, whereas others remain confused in their pedagogical understanding throughout the teacher education programme. Peiser et al. (2022) found that teacher educators should incorporate social and educational psychology in curriculum development. Van Manen (1977) aimed to document how ways of knowing can be linked to ways of practicing. It is important to note that teachers choose modes of action they perceive as accepted practice rather than relying solely on evidence-based scientific knowledge.

The above research has underscored the importance of practicum as a space for bringing "theory" and "practice" for prospective teachers, enhancing STs' sense of preparedness, and reflecting upon their professional development. However, what is missing from this discussion concerns how STs' identity is constructed during practicum in a way that integrates these dimensions.

Many countries are increasingly focusing on practical aspects of education, moving away from traditional university-centered approaches (Heinz, 2024). As a result, new frameworks have emerged that highlight the importance of student teachers' independent reflection and active participation in discussions about their attitudes, motivations, and professional growth (Bjørndal et al., 2024). As Heinz (2024) points out, continued emphasis on the teacher education practicum is essential, as it plays a pivotal role in the professional growth of student teachers, shaping their perspectives, motivations, sense of agency, resilience, and dedication to the teaching profession.

It is not clear in what ways practicum reshapes STs' motives for becoming teachers, boosts their sense of preparedness, and enhances their reflexivity. Given that these dimensions have been identified as the main pillars of teachers' professional identities, our research attempts to demonstrate that STs' identification with the role of teacher is pivotal in explaining how these dimensions are deployed during practicum. Additionally, we propose that our research contributes by employing a mixed-method study approach. Given that most reviewed research has primarily used qualitative methodologies, we believe a mixed-method design offers a more comprehensive approach to understanding our research focus. We think that the explanatory sequential research design is the most suitable method for this purpose, and in the next section, we provide detailed justification for this choice. The research took place within the context of a university undergraduate curriculum for the initial training of teachers in Greece. The training is based on practicum, during which STs (final year students) spend two months in schools, collaborating with mentors.

4. Methodology

4.1. Research Design

The sequential explanatory mixed-methods design is a two-phase design in which the quantitative part (phase 1) is followed by a qualitative one (phase 2) so that researchers explain or elaborate the quantitative results (see Figure 1). Data integration concerns the fact that the qualitative data and their analysis refine and explain the statistical results by exploring participants' views in more depth. The rationale for implementing the sequential explanatory mixed-methods design aligns with what Greene et al. (1989) describe as a "development design." A key feature of conducting a sequential explanatory MM design from a developmental perspective is the sequential integration of distinct yet equally significant methods, allowing researchers to capitalize on the strengths of each approach. These benefits pertain to specific conceptual aspects of the phenomenon under investigation (Greene et al., 1989). In this approach, the results obtained from the initial quantitative strand – aimed at understanding a conceptual aspect of the phenomenon – inform the subsequent qualitative strand, which further develops the conceptual understanding of another aspect of the same phenomenon. In our research, the quantitative strand examined the extent to which student teachers' motives for becoming teachers were related to their identification with the social role of the teacher. The findings from this phase were then used to explore, through the qualitative strand, how STs' practicum experiences reshape this identification.

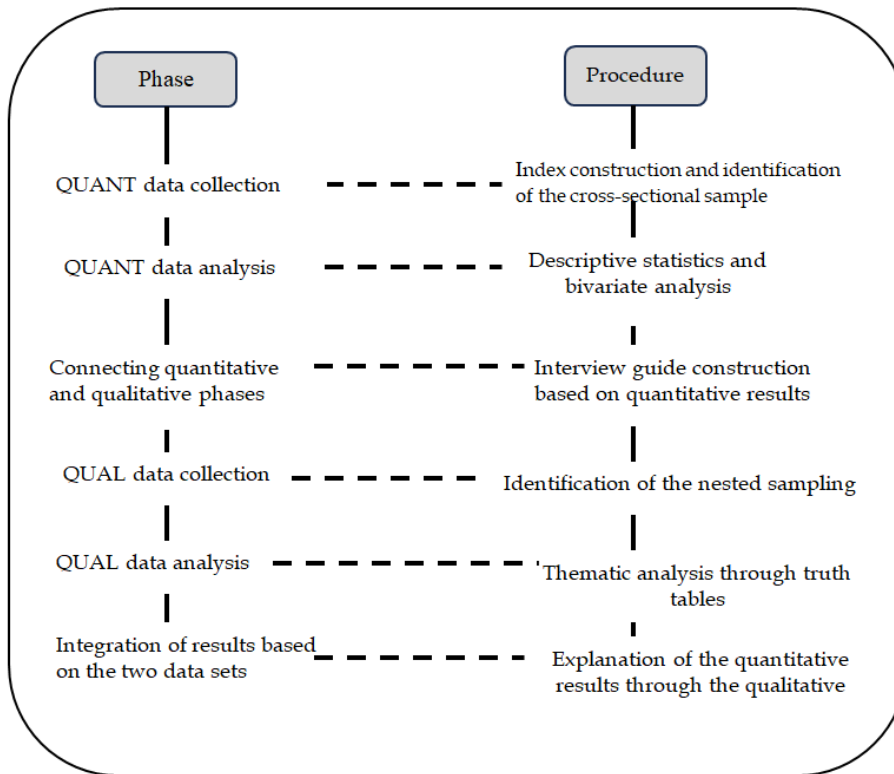
For reasons of clarity, we provide the following figure which depicts a summary of our research design. Although in the handbook version of the sequential explanatory design, priority is given to the quantitative approach because the quantitative data collection comes first in the sequence, in practice a researcher may give priority to qualitative data collection and analysis, or both, depending on the study goals, the scope of the quantitative and qualitative research questions, and the particular design of each phase (Ivankova et al., 2006). In our research both strands of the design have been given equal priority. Capital letters denote that both the qualitative and the quantitative strand are of equal importance.

4.2. Research Questions and Sample

For the sampling scheme we followed the principles of sequential nested sampling (Tanner, 2023). In the initial quantitative phase of the study (Phase 1: cross-sectional sample), a questionnaire comprising four indexes was administered to 300 final-year pedagogy students from two educational departments, who were attending the practicums 2022-2023. The response rate was 72%. For the nested sampling (Phase 2: semi-structured interviews), 17 STs drawn from the pool of those who filled in the questionnaire, participated voluntarily in the qualitative stage, in which semi-structured interviews took place. Each interview was audiotaped, anonymized, sent back to the STs for permission and lasted approximately thirty minutes.

Figure 1

Sequential explanatory research design



4.3. The Data Collection Tools

The aim of the questionnaire construction was to tap four main conceptual constructs, a) STs' motives for becoming teachers, b) their sense of preparedness, engagement and self-efficacy in classroom teaching, c) the degree to which they identify with the role of the teacher, d) their perception of whether the practicum contributed to STs' reflexivity. As far as a) and b) are concerned, we used the Fit-Choice scale (Watt & Richardson, 2007) and the scale of Teachers' Sense of Preparedness, Engagement and Self-Efficacy in Classroom Teaching (Abraham et al., 2021). Even though both scales have been validated in several countries, we adjusted the items on these scales to reflect the Greek context through pilot research and we made use of factor analysis to identify the latent conceptual factors into which the items can be clustered. Space limitations do not allow us to present details of the factorial procedures. The response scale was the same for all constructs (1=not at all, 7=absolutely). In table 1 the factors and the Cronbach α for these constructs are presented.

Table 1

Dimensions of the "motives" and "sense of preparedness" constructs

<i>Construct and dimensions (factors)</i>	<i>Cronbach α</i>
Motives for choosing the teaching profession	
Instrumental	.84
Altruistic	.88
Undecidedness – other-directedness	.67
Student teachers' sense of preparedness, engagement and self-efficacy in classroom teaching	
Knowledge application to pupils' learning needs	.96
Classroom management – engagement	.92
Sense of self-efficacy	.89

The instrumental dimension is composed of items which depict the teaching profession as a means for realizing goals related either to living a secure life or to supporting the family. The altruistic dimension is composed of items which point in the opposite direction, which is that the teaching profession is chosen as an end. Finally, the undecidedness – other-directedness dimension

is composed of items which assume that the teaching profession has been chosen either because the person was undecided when finishing high school or because significant others pushed him/her to follow this route. Regarding the “Student Teachers’ Sense of Preparedness” construct, the “knowledge application to pupils’ learning needs” is an index composed of items tapping ST’s ability to adjust theoretical knowledge from educational science for various classroom requirements while the “classroom management – engagement” dimension is an index composed of items tapping ST’s preparedness to deal with pupils’ diversity, and their willingness to collaborate with colleagues. The “Sense of self-efficacy” index is composed of items tapping their sense of mastering the classroom and of realizing learning goals.

The other two constructs emerged through previous qualitative research and the literature review. In particular, the dimensions of the “identification with the role of teacher” construct are the main themes which emerged through qualitative interviews carried out for a similar project in which teachers’ turning points were investigated. The “voluntarism” dimension refers to how much STs seem to identify with the belief that the role of the teacher can make a difference to their pupils’ life, the “self-realization” dimension refers to how much STs believe that the role of the teacher is a means for realizing their deepest self while the “social self” dimension has been influenced by G H Mead who referred to the extent to which individuals come to view themselves through the eyes of the others. Finally, the dimensions of the “practicum’s contribution to enhancing STs’ reflexivity” construct have been produced by means of the detailed review of the relevant literature we carried out. The “classroom reflexivity” dimension is composed of items related to how the practicum made STs rethink their teaching methodologies and the “social reflexivity” dimension is composed of items related to how practicum made them realize the social dimensions of teaching. In table 2 the factors and the Cronbach α for these constructs are presented.

Table 2

Dimensions of the “identification with the role of teacher” and of the “Contribution of Practicum to STs’ reflexivity” constructs

<i>Construct and dimensions (factors)</i>	<i>Cronbach α</i>
Identification with the role of teacher	
Voluntarism	.81
Self-realization	.77
Social self	.86
Contribution of Practicum to STs’ reflexivity	
Classroom reflexivity	.75
Social reflexivity	.88

Regarding the qualitative part, we used an interview guide composed of three axes each of which corresponded to the main constructs of the quantitative part. Although the axes had been crystallized at the beginning of the research, the interview questions for each of them took shape after we started to analyze the questionnaire. Thus, the three axes of the interview guide were “reasons for choosing the teaching profession”, “self-feelings towards being perceived of as a teacher” and “lived experiences from the practicum”.

4.4. Data Integration

One of the most interesting parts of a mixed methods design concerns integration which refers to the stage or stages in the research process where the mixing of the quantitative and qualitative methods occurs (Fetters et al., 2013; Vogl, 2019). In the explanatory sequential design, qualitative data built upon the quant data and various strategies have been developed for clarifying this kind of mixing. In our study, integration took place

- during research questions (the research questions related to the qualitative strand have been built upon the conceptual constructs which were operationalized in the quant strand)

- during data collection (the axes of the interview guide are based upon descriptive statistics) and
- during data analysis (conceptual constructs of the quant strand laid the ground for the identification of the themes by means of truth tables)

Mixing during data analysis was organized according to the following line of thought. We used descriptive statistics for identifying which of the dimensions of the four constructs are the most prominent and then we created a crisp-set truth table as described by Ragin. By using the truth table as a classificatory device we aimed at distributing interview participants to each of the configurations created in the table and then identifying possible clusters, and in each of these we conducted Template Analysis. Then we compared the themes of these clusters to identify similarities and differences in causal processes related to the third and fourth research question. We think that this type of integration feeds integration at the stage of meta-inference, in particular at the stage where we explain the phenomenon of interest, which is STs' identity formation during practicums. Thus, in the next sections we present first the quantitative results and then we present details regarding the creation of the truth table based on the factors that proved to be significant from the quantitative analysis. Then, we analyze the qualitative data, and we present the themes for each type of combination in a contrastive manner.

5. Quantitative Findings

5.1. Descriptive Statistics

Starting from the construct related to "STs' motives for becoming teachers" (table 4), we can see that STs are somehow reserved in adopting instrumental motives for becoming a teacher, they seem to identify with the altruistic motives, as the high mean values attest and distance themselves from being seen as undecided or heteronomous. As far as the "STs' Sense of Preparedness" construct is concerned (table 4), the values of the mean scores in the "classroom management - engagement" index show that students consider themselves prepared to deal with pupils' socioeconomic, ethnic or cultural diversity and to create collaborative relations with colleagues or mentors. The mean scores in the "knowledge application to pupils' learning needs" index are slightly lower which means that students are a little bit reserved as to their ability to adjust the scientific knowledge they obtained from their studies for the various learning requirements, such as the ability to organize a teaching methodology according to intercultural principles. The mean scores in the "self-efficacy" index are even lower, meaning that students are even more hesitant to make sense of themselves as individuals who can master the classroom and who can realize the learning goals they have set.

Table 3

Mean scores for the "motives" and "sense of preparedness" constructs

<i>Construct and dimensions (factors)</i>	<i>M (SD)</i>
Motives for choosing the teaching profession	
Instrumental	4.1 (1.13)
Altruistic	5.7 (0.92)
Undecidedness - other-directedness	3.5 (1.05)
Student teachers' sense of preparedness, engagement and self-efficacy in classroom teaching	
Knowledge application to pupils' learning needs	3.8 (0.67)
Classroom management - engagement	4 (0.74)
Sense of self-efficacy	3.5 (0.56)

Regarding "identification with the role of teacher" it seems that they adopt a voluntaristic stance towards the social role of the teacher by approaching it as a means for self-realization, even though they do not expect others' esteem in order to valorize themselves (see Table 5). This reading of the findings is corroborated by the fact that the standard deviation value of the "voluntarism" and the "personal self" aspect of the "identification" index is low ($SD = 1.8$) while

the standard deviation value of the “social self” aspect is high ($SD = 2.6$), meaning that students’ belief regarding the first two aspects is homogeneous while their belief for the third aspect is not.

Table 4

Mean scores for the “identification with the role of teacher” and the “Contribution of Practicum” constructs

<i>Construct and dimensions (factors)</i>	<i>M (SD)</i>
Identification with the role of teacher	
Voluntarism	6.2 (0.80)
Self-realization	6.1(0.75)
Social self	5 (2.6)
Contribution of Practicum to STs’ reflexivity	
Classroom reflexivity	5.5 (0.35)
Social reflexivity	4.7 (0.60)

Finally, practicum seems to contribute most to classroom reflexivity, that is, it had the potential to make STs rethink their teaching methodologies when unexpected events occur in the classroom. However, STs do not seem to realize that teaching is connected to social and cultural structures surrounding classroom activities (see Table 5).

Summarizing the descriptive results regarding the constructs we implemented, it seems that STs want to be seen as altruistic individuals who have chosen to become teachers in order to contribute to the wellbeing of society. They draw upon instrumental reasons for becoming teachers, even though their responses are fragmented on this issue, and they do not want to be conceived of as undecided or heteronomous personalities who take decisions about their future based on others’ preferences. They seem to adopt a voluntaristic stance towards the social role of the teacher by approaching it as a means for self-realization. In addition, they want to be conceived of as ready to deal with pupils’ socioeconomic, ethnic or cultural diversity and to create collaborative relations with colleagues or mentors, but they are a little bit reserved regarding their ability to adjust the scientific knowledge they obtained from their studies to the various learning requirements, and even more reserved when defining themselves as persons who can satisfy learning goals. Finally, variability permeates students’ responses regarding practicum’s contribution to enhancing social reflexivity, while most students think that classroom reflexivity is developed through their participation in the practicum.

5. 2. Bivariate Analysis

The descriptive results confirmed our idea that the motives for becoming a teacher and the identification with the role of teacher are the key variables for making sense of how STs approach and experience practicums. By relying on this finding, we proceed to bivariate analysis to check whether these two constructs are correlated. Indeed, STs’ belief that they became teachers for altruistic reasons is correlated in a statistically significant way with their self-perception as individuals who practice the role of the teacher from a voluntaristic ($r = 0.40$, $p = .001$, $CI = 0.28 - 0.50$) and self-realizing standpoint ($r = 0.47$, $p = .001$, $CI = 0.32 - 0.50$). Next, bivariate analysis between the “identification with the role of teacher” and the other two constructs was carried out (see Table 5).

Two things can be noted from the Table 5. First, that approaching the role of the teacher through voluntarism is not related to the students’ sense of preparedness, but only to Practicum’s contribution to classroom reflexivity. Second, the more students believe that the role of the teacher is a means for self-realization, the more intense their belief that Practicum enhances classroom reflexivity and their sense of preparedness. Finally, we have to highlight the fact that students do not seem to have realized that Practicum is connected to social conditions (social reflexivity), given that social reflexivity is not related to the variables we implemented.

Given that the analysis brought to the fore the main conceptual constructs through which one can make sense of how STs experience practicums, the last hypothesis we wanted to test concerned whether practicums’ contribution to classroom reflexivity is directly affected by STs’ sense of self-

efficacy or whether the “self-realization” construct is the intermediate variable which makes a difference to the outcome. Partial correlation was carried out to test this hypothesis, and the results are presented in Table 6.

For the upper part of the Table 6 in which intercorrelations are presented and the influence of the intervening variable is not detectable, one can observe that the Pearson r value for the variables “self-efficacy” and “classroom reflexivity” is $r = .39$ and that the Pearson r value for the correlations of the “self-realization” variable with the “self-efficacy” and “classroom reflexivity” variables is $r = .38$ and $r = .42$ respectively. In the lower part of the Table 6 in which the intervening variable “self-realization” is controlled, one can observe that the Pearson r value has decreased from $r = .39$ to $.20$. Although this is not a remarkable decrease, one cannot but consider the fact that the “self-realization” variable affects the relationship between “STs’ self-efficacy” and “classroom reflexivity”.

To sum up the results from the quantitative part of the research, we found that “self-realization”, “altruistic motives”, “knowledge application to pupils’ learning needs”, “classroom management – engagement” and “classroom reflexivity” were the main factors for making sense of STs’ learning experiences from practicums. In particular, it seems that STs feel prepared to make a difference in the life of their pupils in so far as they are in a position to master classroom requirements and adjust theoretical knowledge to pupils’ learning needs. Practicum contributes to students’ classroom reflexivity to the extent that their sense of preparedness is high and to the extent that seeing the role of the teacher as a means of self-realization matters to them. In other words, both the contribution of Practicum to STs’ reflexivity and their sense of self-efficacy are affected by the extent to which they approach the social role of the teacher as a means for self-realization.

5.3. Integrating Data: The Passage from Quantitative to Qualitative Data Analysis

Having identified the main factors which shape how STs experience practicums, we used truth tables for bringing to light clusters of combinations of these factors in which the seventeen interviewees were distributed. We made use of truth tables by taking inspiration from Ragin’s approach called Qualitative Comparative Analysis (Marx et al., 2013). Briefly described, truth tables:

- may be used either for exploratory or confirmatory purposes (we used them for exploratory purposes)
- may be completed either by a crisp set of data (with binary variables) or a fuzzy data set (we used a crisp data set)
- are a means for identifying the limited diversity of the conditions leading to an outcome
- are a means of identifying types of cases
- prioritize holistic comparisons of cases as configurations of conditions and elucidate their patterned similarities and differences.

Some of the defining features of the QCA approach are that it aspires to tap causal complexity conceived of as equifinal, conjunctural, and asymmetric and that relation is conceptualized as set relation and not, as in standard statistics, as correlation (Wagemann & Schneider, 2010). The formula for the construction of a truth table is based on the 2^n scheme, where 2 stands for the two values of 1 and 0 and n stands for the number of conditions. In our research, the truth table was composed of 8 lines, three conditions (altruistic motives, self-realization and classroom reflexivity) and the outcome (preparedness). We created the truth table by using the four above mentioned dimensions of the main constructs of the quant strand as binary variables. In particular, for

(Insert Table 5 & 6 Here)

“altruistic motives”, “Self-realization” and “classroom reflexivity”, “1” means that this attribute is present in each interviewee’s account and “0” means that the attribute is absent. For the “preparedness” dimension, “1” means that STs feel prepared to apply theoretical knowledge to various learning requirements and to manage unexpected events in the classroom, while “0” means that they are not. Although a standard truth table typically includes all possible combinations of conditions, we present only the combinations for which interview instances have been distributed. As Ragin (1987) observes, while truth tables illustrate the full range of potential condition combinations in statistical terms, certain combinations may be unlikely to contain instances due to the social and cultural specificities of the context. With this consideration in mind, Table 7 presents the distribution of the seventeen interviewees (I), omitting combinations with no instances or where the outcome (preparedness) is absent (three interviews).

Table 7

Truth table of the seventeen interviews

	<i>Combination no.</i>	<i>Altruistic motives</i>	<i>Self- realization</i>	<i>Classroom reflexivity</i>	<i>Preparedness</i>	<i>Number of instances</i>
Lines merged due to the Boolean minimization rule	1	1	1	1	1	I1, I4, I5, I10, I16
	2	1	0	1	1	I6, I9, I11, I13,
	3	0	0	1	1	I8, I12, I17, I7 I14

Our main intention in using this table was explorative because we wanted to bring to light clusters of interviewees which differ in kind, each of which constitutes a type. To carry out the distribution, the authors used the three conditions of the table as a common codebook for coding the interviews and for attributing to each interview the value “1” or “0”. The authors coded the interview material separately and at the end of the analysis we compared the truth tables that emerged from each coder/author. The line of reasoning we followed for checking intercoder agreement was that of Boyatzis (1998). Authors coded each interviewee separately by putting the value “0” or “1” for each combination and at the end of the analysis we compared the lines of combination which had been coded by the three authors (agreement percentage = agreement quantity/discrepancy quantity). The authors were in agreement in 15 out of the 17 codes (lines of combination). The two lines of combination for which disagreement occurred concerned I7 and I17. Although Boyatzis’ (1998) intercoder agreement procedure is widely used due to its transparency, we have to note that coding is not just a technical matter, but the author’s interpretation is also actively involved. Coding is not just an act of retrieval but of categorizing and interpreting each fragment in relation to its semantic and social context. By categorizing a fragment, authors implicitly or explicitly explain a phenomenon of interest and/or provide a framework for bringing to light conceptual abstractions.

Besides the codebook, qualitative data analysis has relied upon authors’ “first-hand knowledge”, intensive reading of the interview material and the theoretical knowledge of the field in order to avoid arbitrariness. Data interpretation and coding is not an arbitrary process, but it depends upon these three procedures (Ragin, 2000). Two of the three authors are experienced teacher educators in the pedagogy departments in which the research took place, so they have insider knowledge of the field. In addition, the three authors read the material intensively a number of times by using a common coding framework and by having a common theoretical perspective as a guiding principle for categorizing the fragments. Given the combinatorial logic sustaining the truth table, Boolean minimization is a formula used for simplifying the table. This minimization rule says that if two combinations differ in only one condition, then this causal condition which distinguishes the two expressions can be considered irrelevant and can be removed to create a simpler and combined expression (Ragin, 2000). Using the minimization formula for the combinations 1 and 2 we can infer that when the conditions of altruistic motives

and classroom reflexivity are present, the outcome occurs, too. For this reason, these two lines can be taken as one and to be merged. Whether the “self-realization” dimension is present or absent does not make any difference regarding STs’ sense of preparedness. Remember that combinations of conditions must be understood holistically, that is as intersections. Altruistic motives and classroom reflexivity separately are not connected to the outcome but only when they intersect. Besides this intersection, preparedness (outcome) is present when altruistic motives and self-realization are absent, but classroom reflexivity is at work. In other words, these two combinations are sufficient conditions for preparedness, which means that they are subsets of the outcome.

Even though truth tables are powerful methodological tools for discerning and identifying possible conditions connected with outcomes by treating the conditions holistically, as configurations through which something happens, they cannot tell us why this happens. For this task, we carried out thematic analysis for delving into the details of each configuration.

5.4. Qualitative Findings

Truth tables brought to light that the sense of preparedness in practicums is tied up with two types of STs. By talking about types of STs, we do not treat them as characterological or personality structures, but we want to underline that there are two paths along which the sense of preparedness occurs and is developed through practicums. The concept of path is a more useful metaphor because it prioritizes a process of becoming which is full of openness and relational reflexivity. In order to explain this process in more detail, we want to delve into these two types of paths connected with STs’ sense of preparedness, in particular the finding that the sense of preparedness is present when a) altruistic motives and classroom reflexivity are present (we call it group A) and b) altruistic motives and self-realization are absent, but classroom reflexivity is at work (we call it group B). In the following paragraphs we provide details explaining why this happens.

Given the various approaches to thematic analysis, we determined that Ritchie’s Framework Analysis was the most suitable for our research design. At this stage of analysis, where truth tables had been constructed, we employed deductive coding by using the conditions outlined in the truth table as a framework/index for organizing the data. After developing the index, researchers coded the data to refine the framework and identify any differences between the two groups that emerged from the truth table. To illustrate these differences, we present Table 8 in which we cross-tabulated the four main constructs with the two groups. Within the table cells, we included the main categories, which represent elaborations of each construct as emerged from the qualitative analysis.

Table 8

Categories that emerged from qualitative data analysis

Index	Categories	
	Group A	Group B
Altruistic motives	1. Teachers as difference makers in pupils’ lives 2. First choice in the national exams	1.3. Reservations regarding the influence teachers might have on pupils’ lives 1.4. Not a first choice 1.5. Undecided during the first years at university
Self-realization	2.1. Positive emotions in defining themselves as teachers	2.2. Indifference regarding others’ views on teachers’ work.
Classroom reflexivity	3.1. Adaptation to learning needs 3.2. Emotional reflexivity	3.2. Difficulties related to adapting to learning needs 3.3. Re-think about being a teacher in the future
Preparedness	4.1. They provide specific examples from practicum regarding ways of application	4.2. Confused and complicated examples offered

A horizontal comparison of the two groups reveals several key findings. First, STs in Group A believe that teachers can make a meaningful difference in pupils' lives, and for many, teaching was their first-choice profession when taking the national exams for entry into higher education. In contrast, STs in Group B were less convinced of teachers' influence on pupils and remained undecided about whether teaching was their desired profession, even during their first or second year at university. Second, while STs in Group A associate positive emotions with their future role as teachers, this is not the case for STs in Group B, who appear indifferent to how others perceive their work.

Third, STs in Group A actively sought to adapt to pupils' learning needs by demonstrating emotional reflexivity. As reflected in their narratives, one ST explained that they could "create activities related to language, math, science, physical education, visual arts and theater" (I5), while others described realizing "that the pupils were at a different learning level" and, in response, having to "test" their emotions, becoming "more passionate" and "more resilient" in the process (I6 and I10).

In contrast, STs in Group B reported difficulties in adapting to pupils' learning needs, which led them to reconsider teaching as a future profession. This was reflected in their narratives, as one ST admitted that they did "not know if [they] feel more confident now" and still had "a lot to learn" (I8).

Finally, when asked to provide specific examples from their practicum experience regarding how they applied theoretical knowledge to real learning situations, STs in Group A offered more detailed and specific responses compared to those in Group B. The differences were not only academic but also cultural. Some illustrative examples are the following:

The difference was not only in the learning and educational level but also in the cultural one. So, I had to explain to the Roma child again, give him more time, but also simplify it. (Group A, I11)

I realize that the most important thing in the practicum concerns the frame of mind we implement (I17)

In a more general way, the STs in Group A experienced practicum as an opportunity to rethink specific ways for adapting their theoretical knowledge to regular and unexpected events. In addition, practicum seems to offer them the opportunity to reflect upon the emotional dimension of the teaching role and to enhance their resilience. In contrast, although the STs in Group B say that they feel prepared to become teachers, they struggle to provide specific examples of applying theoretical knowledge to various learning requirements and managing unexpected classroom events. Their accounts are fuzzy and somehow obscure regarding these issues. Besides these differences, these two groups differ regarding the first two conditions of the index. In particular, the STs in Group A believe that teachers act as difference makers in pupils' lives, pedagogy departments were their first choice in the national exams, and they experience positive emotions when defining themselves as teachers. In contrast, the STs in Group B express their reservations regarding the influence teachers might have on pupils' lives, pedagogy departments were not a first choice in the national exams, and they were undecided even for the first two years of their university life.

In other words, the qualitative findings revealed that practicum shaped teachers' professional identity in two directions. On the one hand, it provided a learning opportunity for those who have already shaped their engagement with the role of the teacher to realize how adaptation to pupils' needs (learning and social) occurs in the classroom and to reflect in more depth on the emotional dimension of this role. On the other hand, practicum is a place for crafting the teacher identity from scratch for those who do not see the role of the teacher as a personal engagement and as of primary importance for their self-understanding.

6. Discussion

The added value the explanatory sequential design offered is that it brought to light two findings which deserve our attention. First, the quantitative part underlined that practicum is a space for STs to rethink the social role of the teacher by reflecting on whether this is a role they would like to

engage in in the future. Engaged STs seemed to be more prepared to deal with the various classroom requirements and with the emotional rules of the social and institutional aspect of the practicum, while the STs in group B were less engaged with the role of the teacher and appear to have a limited sense of preparedness. It is not a bad thing that STs in group B had not crystallized their motives to become teachers, given that they are at a young age. It is the practicum that offers them the opportunity to think about their identification with the social role of being a teacher in the future. Although the sense of preparedness for these STs is less developed than for those who had decided while at school to become teachers, practicums are of great value for these students to craft their social identity.

This finding is also similar to Canrinus and Fokkens-Bruinsma's (2014) and Hennissen et al.'s (2017) research who found significant changes in STs' motives and self-efficacy regarding tasks within the classroom and during practicum. That practicum is the space in which STs develop their ideal and possible self has been noted as a major issue of initial teacher training (Yuan et al., 2019). Moreover, Henry (2016) and Martin and Van Gunten (2002) have highlighted the underlying dynamics of social class, race and gender that influence STs' identity. However, the question of the ways in which identifying with the role of the teacher makes a difference to STs' identities regarding their sense of preparedness during practicum has not been stressed in this research. Identifying with the role of the teacher is an emotionally laden process and this is something most of the qualitative research on STs' identities has been preoccupied with. For instance, Zhu (2017) and Deng et al. (2018) have pointed out the ethical dilemmas through which STs' identities are formed and Yuan and Lee (2016) and Teng (2017) underlined the conflicting emotions which make STs' identities a contested field. In that sense, our research corroborates these qualitative findings by providing evidence of how identification with the role of the teacher is the key factor for understanding STs' identities.

Second, to our surprise, STs' social reflexivity appears to be underdeveloped. Both the quantitative and qualitative findings indicate that they struggle to recognize how being a teacher is intrinsically connected to the ways in which social and cultural structures shape their work. Although STs acknowledged that mastering classroom diversity is necessary for implementing differential learning, they could not verbalize how this diversity is conditioned by external factors which may affect teaching. However, qualitative analysis showed that classroom reflexivity may be increased during practicum regardless of STs' awareness of social reflexivity and irrespective of whether they were decided or not about their motives. Qualitative findings brought to attention the fact that classroom reflexivity might be used as a starting point for developing STs' identification with the teaching role because by reflecting upon how to master classroom requirements during practicum, STs may rethink their engagement with the role of the teacher and thus empower their sense of preparedness. These findings may be interpreted to mean that reflexivity in practicum does not merely help STs cope with immediate classroom demands, but also supports a broader process of professional learning through which they reconsider their emerging pedagogical judgments and instructional decisions. In this sense, reflection on classroom experiences can function as a mechanism for linking situated practice with developing professional identity, since repeated engagement with real teaching situations encourages STs to evaluate what works, why it works, and how they themselves should respond as teachers. This interpretation is consistent with evidence that reflective-practice-based practicum processes can significantly improve pre-service teachers' classroom teaching practices, and that reflection on mentor teachers' classroom decisions can reshape pre-service teachers' beliefs and instructional strategies. It is also supported by research indicating that formative professional experiences may enhance teacher candidates' confidence and adaptability in their instructional approaches. These studies suggest that reflective engagement with practicum experiences can strengthen STs' sense of preparedness by helping them reinterpret classroom demands, refine their pedagogical responses, and position themselves more confidently within the teaching role (Aina & Aina, 2023; Kılıç, 2022; Özkanal & Yüksel, 2023; Çelik, 2025). Other relevant research has touched upon this issue but from a different angle. It has been emphasized that reflection helps teachers to deal with classroom events and that it would be

useful for student teachers to visualize the 'practical' side of the theoretical knowledge that they learn in the practicum by underlining non-formal learning contexts (Forzani, 2014; Rodgers, 2002; Tang et al., 2017; Wiens et al., 2021). However, how classroom reflexivity promotes identification with the role of the teacher is missing from these research findings.

Considering the findings of the research, a limitation of our research is that it was a within case research attempt. We think that by comparing practicums in which various theoretical reasonings or epistemological traditions are implemented, one could tap the complexities of how STs' identity is formed. For further investigation can be suggest a long-term research in pre-service teacher education in the area of Curriculum. Also, the participants of research could be as co-researchers in order to be immersed as reflective practitioners in action.

7. Conclusion

To conclude, in this research we showed that practicums are a space in which STs reflect upon their identification with the role of the teacher which in turn is tied up with how they develop their sense of preparedness and of reflective practitioner. We argued that this identification has to be taken into account in initial teacher education because it mobilizes the cognitive and emotional aspects of the teachers' identity.

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Declaration of Interest: The authors declare no conflict of interest.

Ethics Statement: This study involved student teachers participating in questionnaires and interviews during their practicum experience. All participants were fully informed about the purpose of the research and provided their informed consent prior to participation. Participation was voluntary, and all necessary measures were taken to ensure participants' anonymity and confidentiality. The study was conducted in accordance with the Code of Ethics and Good Practice of the University of Thessaly. According to the regulations of the Department of Early Childhood Education at the University of Thessaly, submission of research proposals for ethical approval is optional; therefore, no formal ethical approval was obtained.

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