Preservice Teacher Professional Identity: Influence of the Teacher Educator and the Teacher Education Model

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Abstract: The objective of this study is to estimate the association between the following variables: teacher professional identity, the teacher education model adopted, the type of teacher educator, and academic progression of teacher education students. A purposive and convenience sampling process was used to recruit 662 preservice teachers attending teacher education programs at three Chilean universities. A sociodemographic survey and teacher professional identity scale were administered to these preservice students. Data were analysed using Spearman correlation, the Kruskal-Wallis test, and multiple linear regression. Results how different types of teacher educator profiles and teacher education models positively correlate with professional identity; furthermore, levels of professional identity were found to differ in connection with students’ level (year) within their teacher education program. It was also found that the profile of teacher trainers, who are also schoolteachers, and the critical-intellectual educational model are predictors of teacher professional identity. In the discussion, these results are analysed based on the literature.

Key words: professional identity; teacher educator; teacher education model; academic progression

Identicidade profissional en estudiantes de pedagogía: Influencia del formador de profesores y el modelo formativo

Resumen: El objetivo de este estudio es estimar la asociación entre las siguientes variables: identidad profesional docente, modelo de formación docente, tipo de formador de profesores y progresión académica en estudiantes de pedagogía. Se utilizó un muestreo intencionado y por conveniencia de 662 estudiantes de pedagogía que asistían a programas de formación docente en tres universidades chilenas. A estos estudiantes se les administró una encuesta sociodemográfica y una escala de identidad profesional docente. Los datos se analizaron mediante correlación de Spearman, la prueba de Kruskal-Wallis y regresión lineal múltiple. Se encontró que diferentes tipos de perfiles de formadores de docentes y modelos de formación docente se correlacionan positivamente con la identidad profesional, que los niveles de identidad profesional difieren en relación con el nivel cursado de los estudiantes y que el profesor de aula escolar y el modelo educativo intelectual-crítico son predictores de la identidad profesional docente. En la discusión, estos resultados son analizados con base en la literatura.

Palabras clave: identidad profesional; formador de profesores; modelo de formación docente; progresión académica

Identidade profissional docente: Influência do professor formador e do modelo de formação docente

Resumo: O objetivo deste estudo é estimar a associação entre as seguintes variáveis: identidade profissional do professor, modelo de formação de professores adotado, tipo de formador de professores e progressão acadêmica em alunos de formação de professores. Um processo de amostragem intencional e de conveniência foi usado para recrutar 662 professores de formação inicial que frequentam programas de formação de professores em três universidades chilenas. Uma pesquisa sociodemográfica e uma escala de identidade profissional docente foram aplicadas a esses estudantes de formação de professores. Os dados foram analisados por correlação de Spearman, teste de Kruskal-Wallis e regressão linear múltipla. Foi encontrado que diferentes tipos de perfis de formadores de professores e modelos de formação de professores se correlacionam positivamente com a identidade profissional; Além disso, verificou-se que os níveis de identidade profissional diferem em conexão com o nível dos alunos em seu programa de formação de professores. Verificou-se também que o perfil dos formadores de professores que são também professores e o
Preservice Teacher Professional Identity: Influence of the Teacher Educator and the Teacher Education Model

Research on teacher professional identity (PI) has highlighted the importance of establishing systematic educational processes so that future teachers identify with their profession. Studies indicate that teacher PI comprises a number of meanings and significances about the teaching profession, along with teachers’ subjective and formal knowledge about teaching and learning. PI also integrates teachers’ self-image as such and a sense of professional self-efficacy (Beijaard, 2019). Based on this definition, a teacher’s PI is a fundamental personal dimension for becoming a professional, feeling like a professional, acting like a professional, and wanting to be a professional.

Gaining a better understanding of how teachers construct their PI is key, since better PI development has been linked to better performance, professional motivation, engagement, and job retention (Hanna et al., 2020). Although research on the influence of PI on teacher professionalisation has made great strides, less is known about early teacher education, especially in Latin American countries, where less empirical evidence has been generated.

In initial teacher education, students are expected to become professionalised as they progress academically. Although it is well known that initial education has some degree of impact on the development of teacher PI (Huu & Ngoc, 2017), research also shows that it is a dynamic, complex, and less conscious process for students (Salinas & Ayala, 2018). A study conducted by Huang et al. (2022) revealed that year of study negatively predicted preservice teachers’ professional identity. Likewise, evidence shows that students’ age is a variable that can either facilitate or hinder the interaction between PI and personal identity (Volpe et al., 2017), which is relevant because personal identity is among the developmental tasks of emergent adulthood.

Other findings warn of a crisis of teacher identity or a conflict-ridden and difficult identity construction process during early teacher education (Hanna et al., 2019), especially in Latin America, as a result of sociopolitical criticism against the professional status of teachers (Sarasa, 2016) and the increasing social demands placed on them, which can even lead teachers to develop feelings of work vulnerability and a less optimistic view of the profession. Thus, since it appears that teacher PI does not develop gradually in initial education as students progress in their program, it is necessary to find out more about this issue.

Curricula are a key element of initial teacher education (Beauchamp & Thomas, 2009). According to Robinson and Jancic-Mogliacci (2019, p. 1),

Initial teacher education programs across the world bear many resemblances to one another with respect to their overall design features. Students generally follow courses that teach them foundational knowledge pertaining to education, like psychology or sociology, disciplinary knowledge in particular subject areas, and general and specific pedagogical knowledge.

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Regarding the above, some additional evidence has been produced in Chile by studying the Inicia Program, a recent policy that, by defining curricular guidelines for teacher education programs, seeks to establish a basic set of knowledge consistent with the requirements of the educational system (Bastías-Bastías & Iturra-Herrera, 2022). Other authors have described this homogenization attempt as a “realignement” of initial teacher education programs, in an effort to overcome the excessive segregation present in the school system (Ferrada, 2019).

However, despite this bid to homogenise teacher education, this process can vary to a considerable degree depending on the educational model used. The literature defines an educational model as the conceptions that underlie the aims and nature of teacher education in a given program, including what it means to be a teacher and how students must be taught to be teachers (Robinson & Jancic-Mogliacci, 2019). More specifically, a teacher education model comprises a set of roles, duties, characteristics, and competences which define the teaching profession, therefore representing an input for planning the teaching of the profession more or less consciously. Thus, teacher PI may be constructed, at least in part, upon the basis of these educational models, and may also exhibit differences depending on the type of model that underlies a given education program.

In this study, we analyse how the teacher education models described by Tezgiden (2016) influence teacher PI. Tezgiden (2016) conducted an interesting theoretical review of the teacher education models proposed in the literature, developing an integrative classification of them. The technicist model ascribes a passive professional role to teachers when it comes to educational decisions, with them conveying knowledge to students regardless of whether they possess the pedagogical competences required to perform this task. In contrast, the reflective-hermeneutic model views the teacher as a professional who constructs knowledge and whose practice is the result of a reflection process that guides his/her decision-making. Finally, the critical-intellectual model identifies the teacher as an intellectual who seeks to transform society and fights ideologically for social justice.

The teacher educator is another variable that the literature identifies as highly influential in the construction of PI in initial teacher education. Although a variety of teacher educator profiles coexist in Latin America (González-Vallejos, 2018), two broad tendencies can be identified. Regarding the first profile, criticisms levelled at initial teacher education due to its difficulties in adequately linking theory and practice have led several countries to adopt practice-based teaching. Here, teacher education includes the figure of the classroom teacher, whose educational roles are to supervise and guide preservice teachers in the practical activities that they conduct in a school. This teacher works at a school and does not have an academic role at the preservice teacher’s university, as he/she only collaborates with the higher education institution’s teacher education program. In general, the literature indicates that the classroom teacher plays a major role in how preservice teachers develop their PI (Flores et al., 2020).

The second teacher educator profile within universities emerges in connection with the current relevance of educational research in teacher education (González-Vallejos, 2018). Thus, the figure of academics with a research profile in teacher education has gained increasing prominence. However, the literature indicates that preservice teachers, despite appreciating scientific knowledge, consider that it is far removed from the educational problems that they contend with in their professional practice, apart from criticising how superficially curricula cover educational research (Perines & Murillo, 2017).

Considering the above, even though a theoretical perspective informed by the literature would suggest that the figure of the teacher educator is linked to preservice teachers’ professionalisation, there is insufficient empirical evidence to support this association, especially in Latin America (González-Vallejos, 2018). Therefore, in this study, we analyse the connection between teacher educator profiles in initial teacher education and the PI of preservice teachers.
The general objective of this study is to estimate the association between the variables PI, teacher education model, type of teacher educator, and academic progression in preservice teachers. At a specific level, our goals are: (a) to estimate the association between student PI and teacher education models, considering the technicist, reflective-hermeneutic, and critical-intellectual models; (b) to estimate the association between student PI and teacher educator types; (c) to estimate the association between PI levels and students’ progression in their program; and (d) to establish whether the variables academic progression, teacher education model, and type of teacher educator are predictors of PI development in preservice teachers.

Furthermore, we hypothesise that: (a) there is a link between the variables teacher education model and PI; (b) the technicist teacher education model has the weakest association with PI; (c) there is a link between PI and the teacher educator variable; (d) the schoolteacher profile has the strongest association with PI; (e) there is an association between students’ progression in their program and PI; and (f) the variables teacher education model, type of teacher educator, and progression in the program are predictors of PI.

**Professional Identity in Initial Teacher Education**

PI is a construct that has attracted much research interest due to its impact on teachers’ professional development (Meihami, 2021). When teachers make educational decisions, they do so to a large extent based on the PI that they have constructed; therefore, their level of identification with their profession can impact on the quality of their teaching and their students’ learning.

Although researchers have yet to arrive at a consensus definition of the concept, teacher PI can be described as a complex and dynamic dimension that integrates the meaning and significance of the teaching profession, the subjective and formal knowledge that underpins professional practice, and a set of values that regulate teaching. It includes teachers’ self-image, work motivation, self-efficacy, and perception of their educational role, as well as their commitment to the teaching profession (Hanna et al., 2020). For Beijaard (2019), learning to be a teacher equals developing one’s PI, a process which goes far beyond merely learning facts about what to teach and how.

With respect to the development of teachers’ PI, authors have highlighted the role of cultural, social, and personal factors as explanatory dimensions of the process (e.g. Hanna et al., 2019). Specifically, teacher education, workplace factors, traditions, experiences, interactions, and the place of teachers’ role in society (Beauchamp & Thomas, 2009; Izadinia, 2013) have an impact on teacher PI. In initial teacher education, the characteristics of programs, interactions between professors and preservice teachers, and practical teaching experiences have a major effect on the PI of those training to become teachers (Cuadra et al., 2021; Robinson & Jancic-Mogliacci, 2019).

Although the construction of PI is a lifelong process, initial teacher education is one of the periods with the strongest influence on it. In fact, there is a healthy level of agreement that initial teacher education affects the PI of future teachers (Huu & Ngoc, 2017), but less is known about how this process occurs. What some studies have revealed is that, in initial teacher education, teacher PI does not develop progressively as students advance in their program. Students are also not wholly conscious of this construction process, which has been reported to be dynamic and complex (Salinas & Ayala, 2018). Other studies have shown that, as students begin to take on professional roles and responsibilities in real educational contexts, they make progress in the construction of their PI (Beauchamp & Thomas, 2009). Therefore, in this study, we analyse the relationship between the student’s level (year) within the program and PI.

Furthermore, teacher professionalisation largely depends on the teacher education program adopted by each higher education institution (Beauchamp & Thomas, 2009). Although efforts have been made to homogenise initial teacher education, variations can be observed in the underlying teacher education model of each program, that is, the values as well as the ontological and
epistemological assumptions surrounding what it means to be a teacher, how a teacher must be educated, and what these professionals are educated for (Robinson & Jancic-Mogliacci, 2019).

Other factors affecting teacher PI in initial education are the acquisition of professional knowledge as well as educational approaches based on reflection (Beijaard, 2019), collaborative learning, and the theory-practice relationship. Academics and schoolteachers also play a relevant role in this regard: they emerge as sources of inspiration and modelling, with the latter also acting as educators who teach the functioning of the profession in a real context (Nguyen & Loughland, 2018).

Despite the relevance of teacher PI, the construction of this identity in preservice and novice teachers has not been empirically studied in a sufficient and exhaustive manner (Živković et al., 2018), especially in Latin America. Consequently, empirical studies on teacher PI are less developed in this region. This scarcity of empirical studies may be associated with the small number of instruments for measuring this construct, as noted by Li (2016). Nevertheless, some instruments have been developed to measure teacher PI, mainly in Asia and Europe, including the Teacher Identity Inventory (TII), the Scale of the Factors Affecting Pre-service Teachers’ Teacher Identity (FAPTII), and Cheung’s Identity Scale for Hong Kong Teachers (Aykae et al., 2017; Canrinus et al., 2012; Cheung, 2008).

In this study, we employed a parsimonious instrument, specially devised to measure PI in preservice teachers: the Student Teacher Professional Identity Scale (STPIS). This scale is used to measure teacher PI in student teachers considering their confidence in their career choice, their sense of self-realization, and their view of the profession as both a mission and a challenge (Fisherman & Abbot, 1998). The STPIS was produced and validated by Fisherman and Abbot (1998) using a sample of Israeli preservice teachers. This is a scale whose theoretical assumptions regarding PI are students’ attitudes towards becoming teachers and their level of identification with the role of teachers (Fisherman & Abbot, 1998).

Teacher Education Models

Teacher education can be defined as a lifelong process comprising a set of formal and informal experiences whereby the teacher learns the profession (Beijaard et al., 2004; Day, 1999). In this process, initial teacher education is the period when all educational experiences occur within the context of higher education.

A large share of teacher education is anchored in educational models, conceived as notions about the nature and objectives of teacher education, what it means to be a teacher, and how teachers must be prepared (Robinson & Jancic-Mogliacci, 2019). Thus, though not always explicitly, the educational model adopted determines the roles, duties, characteristics, and competences of the teacher, establishing the identity of the teaching profession to a large extent.

Many countries have sought to homogenise teacher education; however, this process can vary according to its underlying teacher education model (Robinson & Jancic-Mogliacci, 2019). Tezgiden (2016) conducted a review of the paradigmatic, classical teacher education models proposed by a range of authors (e.g. Beijaard, 1999; Davini, 1995; Moral, 2000), presenting an interesting critical view of these constructs. This author describes the technicist, critical-intellectual, and reflective-hermeneutic models. The technicist teacher education model chiefly regards this process as the training of specialists in the discipline, not pedagogical experts, thus demoting pedagogy to a secondary level in teacher education programs. In this context, the teacher-technician is considered to be an efficient implementer of the curriculum. In contrast, a model that views the teacher as a critical intellectual focuses on educating professionals with a strong sense of ethics, who consider social justice a relevant value, and who must take on the professional role of transforming the social structure. Lastly, the reflective-hermeneutic model affords teachers professional status,
thus enabling them to make decisions about educational processes according to their reflections on their professional practice.

For Beijaard (2019), teacher education models have traditionally regarded teachers as experts in content, didactics, or pedagogy. The latter educational model views the teacher as a professional with a strong ethical sense for educating students integrally and solving complex educational and social problems.

Although much of the recent scientific literature highlights the importance of educating teachers according to a reflective-hermeneutic model, some authors propose a combination of these models in order to achieve a suitable level of teacher professionalisation (Robinson & Jancic-Mogliacci, 2019). Considering this, one of the aims of the present study is to explore how these educational models relate to the construction of PI in preservice teachers.

The Role of the Teacher Educator

For González-Vallejos (2018), teacher educators in Latin America constitute a relevant and budding research field which has yielded limited evidence despite the major influence of these actors on initial education. According to this author, this occurs because those who enter academia do not always do so with the clear intention of taking part in these efforts. In this context, the literature identifies academics who have joined a university as teacher educators due to having stood out professionally in schools (a professional profile) and those who have pursued postgraduate studies to focus on educational research (a research profile; Wiebke & Park-Rogers, 2014).

These differences in teacher educator profiles can have a differential effect on the way in which preservice teachers construct their PI. In fact, the PI of teacher educators differs from that of schoolteachers because the aim of their academic practice includes teaching how to teach, developing a pedagogy for teacher education (Allen et al., 2016), and-as an increasingly inescapable institutional demand- conducting educational research.

Furthermore, the figure of the academic teacher educator has drawn criticism due to its limited connection with schools and therefore with the professional world of schoolteachers (González-Vallejos, 2018). Thus, since schoolteachers are a constituent part of schools, they play a very relevant role in the construction of preservice teacher PI. Some of these findings indicate that preservice teachers need role models who are more closely associated with schools; furthermore, they must integrate into their schools as their supervising teacher’s assistants, have a good relationship with their supervising teachers (Arnold, 2019; Zhao & Zhang, 2017), and receive permanent feedback from them on their performance during their professional experience period (Flores et al., 2020). For all these reasons, in this study, we explore the relationship between the PI of preservice teachers and the type of teacher educator guiding their learning process.

Method

Design and Participants

The study conducted was non-experimental and exploratory (Graziano & Raulin, 2013), since few quantitative empirical studies have linked teacher PI with teacher education models and teacher educators. In addition, this study represents one of the first phases of a larger project on teacher professional identity that employs a Quant-Qual sequential mixed methodology (Proyecto Fondecyt 1201084). We utilized correlation and linear regression analysis to explore the association between PI, the types of teacher educators, the models of teacher education, and students’ progression in their programs.
We employed a cross-sectional design with non-probability sampling. The participants were 662 students attending three Chilean universities. This study is part of a larger project whose sample was selected from the teacher education programs with the largest number of students in Chile, according to the National Education Council (2018). Of the full sample, 71.3% of the participants were women and 28.7% were men, with 30.8% of the sample being first year students, 15.1% second year students, 15.1% third year students, 27.5% fourth year students, and 11.6% fifth year students. At each university, the participants’ specializations were as follows: University 1: Physical Education = 6.3%, Preschool Education = 14%, Primary Education = 15.6%; University 2: English = 9.4%, Special Education = 14.4%, Spanish and Philosophy = 15.1%; University 3: History and Geography = 18.3%, Natural Sciences and Biology = 6.8%.

Data Collection Procedure

The instruments and the informed consent were administered online using a Google form. This study is part of a larger project (Fondecyt Regular) approved by the Research Ethics Committee of a Chilean university.

In this study, the sociodemographic survey was used to collect information about the participants, such as progression in their program (year), age, gender, program, and university. Using the same instrument, we explored (a) the teacher education model that each teacher education program conveys to its students (henceforth educational model) and (b) the types of teacher educator with whom the participants identify. Since this study is of an exploratory nature, and given that our database searches did not yield any instruments for measuring these variables, we chose to employ concrete cases that exemplified them, based on which students responded using Likert-type items. The instrument—an ad hoc survey produced by the authors for the purposes of the present study—sought to estimate the degree to which a specific educational model is fostered in the respondent’s program and the type of teacher educator with whom the respondent identifies the most. Thus, we deemed these variables to be concrete, making it feasible to measure them using items (Fuchs & Diamantopoulos, 2009). For the teacher education variable, we considered the three teacher education models proposed by Tezgiden (2016): technicist, reflective-hermeneutic, and critical-intellectual. For each teacher education model, we added a short paragraph about how a teacher must be prepared and how to define the teacher’s role according to the definition of the teacher education models described by Tezgiden (2016). For the type of teacher educator variable, we considered four profiles in response to the wide range of such professionals found in Latin America according to González-Vallejos (2018). See Table 1 for more details.

Table 1

<table>
<thead>
<tr>
<th>Variable</th>
<th>Item/Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technicist Model</td>
<td>“Teacher education consists in learning the curriculum and knowledge produced by experts, which the teacher must apply based on techniques that should be as efficient as possible”</td>
</tr>
<tr>
<td></td>
<td>To what extent is this teacher image encouraged in your program?</td>
</tr>
<tr>
<td>Reflective-Hermeneutic Model</td>
<td>“Teacher education consists in preparing a reflective, creative professional who has the ability to make educational decisions”</td>
</tr>
</tbody>
</table>
### Variable | Item/Question
--- | ---
**Critical-Intellectual Model**  | To what extent is this teacher image encouraged in your program? “Teacher education consists in preparing a professional who has the motivation and the intellectual capacity to transform society.”

**Schoolteacher (teacher who works at a school and collaborates with the practical activities of the university’s teacher education program)**  | To what extent do you identify with this teacher? “L. is a schoolteacher. Also, he supervises the practical activities of preservice teachers assigned to his school. In his supervisions, he teaches preservice teachers what it is like to be a schoolteacher.”

**Academic professional (schoolteacher who complements their profession working as an academic at a university)**  | To what extent do you identify with this teacher? “M. is a professor who teaches preservice teachers at a university and who also works at a school. At the university, he mainly teaches his students (preservice teachers) his experiences as a schoolteacher.”

**Academic (academic teacher educator who teaches several classes at a university)**  | To what extent do you identify with this teacher? “O. is a professor who teaches preservice teachers at a university. In her classes, she mainly teaches theoretical and practical knowledge.”

**Researcher (academic who, apart from teaching preservice teachers at a university, conducts educational research)**  | To what extent do you identify with this teacher? “P. is a professor who teaches preservice teachers at a university. In addition, he conducts educational research. At the university, he mainly teaches his students his scientific research experiences.”

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Student Teacher Professional Identity Scale (STPIS; Fisherman & Abbot, 1998). Unifactorial self-report scale that measures the PI of preservice teachers by means of 12 items with a Likert response scale (from 1 to 5). This instrument measures the respondent’s attitudes towards being a teacher (for example, item 1: “It is important to me to be a teacher”), how much he/she identifies with the teaching role (for example, item 2: “I’m comfortable introducing myself as a teacher”), his/her confidence in his/her career choice (for example, item 7: “I think that it will be good for me to be engaged in education”), his/her feeling of self-realization as a teacher (for example, item 3: “Being a teacher is a central part of my life”), and the degree to which he/she sees his/her profession as a mission and a challenge (for example, item 9: “For me, teaching is a mission”). The instrument has been found to be adequately reliable ($\alpha = .84$; Fisherman & Weiss, 2008). As part of the larger project to which this study belongs, we adapted and validated the STPIS for use in Chile (Aracena et al., in press), which made it possible to measure the PI of preservice teachers using an instrument with adequate psychometric properties ($\chi^2 = 69.78; df = 49; p = 0.027; CFI = 0.93; TLI = 0.91; IFI = 0.93; RMSEA = 0.025$; Brown, 2015) and high reliability according to MacDonald’s omega ($\omega = 0.863$), while also preserving its 12 item unifactorial structure.
Data Analysis Procedure

We established the normative behaviour of the sample for the PI variable using the Kolmogorov-Smirnov test, determining kurtosis and skewness. These procedures enabled us to make decisions for performing the analyses. We found that this variable exhibited non-normalised behaviour ($p < .05$).

Through Spearman’s correlation coefficient, we established the association between PI, the types of teacher educators, the models of teacher education, and the students’ progression in their programs. We also administered the Kruskal-Wallis test to compare PI levels according to the students’ progression in their programs.

Lastly, we employed multiple linear regression with the stepwise method to determine whether the variables type of teacher educator, teacher education model, and progression in the program are predictors of preservice teachers’ PI.

Results

Relationship between Professional Identity and Teacher Education Model

We found a positive and significant association between the technicist, reflective-hermeneutic, and critical-intellectual models and PI, which exhibited adequate statistical power. Although the intensities ranged from medium to low, the largest effect size was found for the relationship between PI and the critical-intellectual teacher education model, while the smallest effect size was found for the relationship between the technicist model and PI (Table 2).

Table 2

Correlation between Teacher Education Model and Teacher Professional Identity

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
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<tbody>
<tr>
<td>IPP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spearman’s</td>
<td>1.00</td>
<td>0.214**</td>
<td>0.291**</td>
<td>0.353**</td>
</tr>
<tr>
<td>Sig.</td>
<td>.</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>$r^2$</td>
<td></td>
<td>0.05</td>
<td>0.08</td>
<td>0.12</td>
</tr>
<tr>
<td>$1-\beta$</td>
<td></td>
<td>0.98</td>
<td>0.99</td>
<td>1.00</td>
</tr>
<tr>
<td>To what extent is the image of a technicist teacher encouraged in your program?</td>
<td>Spearman’s</td>
<td></td>
<td>0.256**</td>
<td>0.232**</td>
</tr>
<tr>
<td>Sig.</td>
<td>.</td>
<td>0.000</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>$r^2$</td>
<td></td>
<td>0.07</td>
<td>0.05</td>
<td></td>
</tr>
<tr>
<td>$1-\beta$</td>
<td></td>
<td>0.99</td>
<td>0.99</td>
<td></td>
</tr>
<tr>
<td>To what extent is the image of a reflective teacher encouraged in your program?</td>
<td>Spearman’s</td>
<td></td>
<td>1.000</td>
<td>0.557**</td>
</tr>
<tr>
<td>Sig.</td>
<td>.</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$r^2$</td>
<td></td>
<td>0.310</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$1-\beta$</td>
<td></td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To what extent is the image of a critical-intellectual teacher encouraged in your program?</td>
<td>Spearman’s</td>
<td></td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>Sig.</td>
<td>.</td>
<td></td>
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Note: ** Correlation is significant at the 0.01 level (2-tailed).
Relationship Between Professional Identity and Type of Teacher Educator

We found a positive and significant association between the types of teacher educator and PI, which exhibited adequate statistical power. Although the intensity of the association ranged from small to medium, the largest effect size was found for the relationship between the schoolteacher profile and PI, while the smallest effect size was found for the relationship between the researcher profile and PI (Table 3). This indicates that students who identify more with the schoolteacher exhibit more teacher PI development, while those who identify with the researcher display lower levels of teacher PI.

Table 3

| Correlation between Type of Teacher Educator and Teacher Professional Identity |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 |
| Spearman’s | **0.333** | **0.282** | **0.248** | **0.192** |
| Sig. | 0.000 | 0.000 | 0.000 | 0.000 |
| r² | **0.11** | **0.08** | **0.06** | **0.04** |
| t-β | **1.00** | **0.99** | **0.99** | **0.95** |
| Spearman’s | 1.000 | 0.448** | 0.300** | 0.246** |
| Sig. | 0.000 | 0.000 | 0.000 | 0.000 |
| r² | 0.20 | 0.09 | 0.06 |
| t-β | 1.00 | 0.99 | 0.99 |
| Spearman’s | 1.000 | 0.306** | 0.312** |
| Sig. | 0.000 | 0.000 |
| r² | 0.09 | 0.10 |
| t-β | 0.99 | 0.99 |
| Spearman’s | 1.000 | 0.407** |
| Sig. | 0.000 |
| r² | 0.17 |
| t-β | 1.000 |

Note: ** Correlation is significant at the 0.01 level (2-tailed).

Academic Progression and Professional Identity

We found a significant and negative relationship between progression in the program (year) and PI. However, the level of association was null and did not display adequate statistical power ($r = -0.077$, sig. = 0.048, $r^2 = 0.005$, $t-β = 0.50$).

Considering the above, we compared PI levels according to the students’ progression in their programs. The Kruskal-Wallis test for independent samples confirmed the presence of significant differences in PI levels by year in the program ($χ^2 = 20.88$, $df = 4$, $p = 0.00$, $ɛ^2 = 0.032$), between fifth and third year ($χ^2 = 130.67$, $p = 0.00$), and between fourth and third year ($χ^2 = 72.756$, $p = 0.022$). PI decreases in fourth and fifth year students relative to third year students. The years where significant differences were found (bolded in Table 4), exhibited a moderate effect size and adequate statistical power.
Table 4

Level of Teacher Professional Identity by Progression in the Program (Year)

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean range</th>
<th>U-value</th>
<th>Z-value</th>
<th>p-value</th>
<th>PSest</th>
<th>1- β</th>
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</thead>
<tbody>
<tr>
<td>1st-2nd</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st</td>
<td>204</td>
<td>152.87</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd</td>
<td>100</td>
<td>151.74</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st-3rd</td>
<td></td>
<td></td>
<td>8269.5</td>
<td>-2.687</td>
<td>0.007**</td>
<td>0.405</td>
<td>0.898</td>
</tr>
<tr>
<td>1st</td>
<td>204</td>
<td>143.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd</td>
<td>100</td>
<td>171.81</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st-4th</td>
<td></td>
<td></td>
<td>17845.5</td>
<td>-0.658</td>
<td>0.511</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st</td>
<td>204</td>
<td>197.02</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th</td>
<td>182</td>
<td>189.55</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st-5th</td>
<td></td>
<td></td>
<td>6125</td>
<td>-2.851</td>
<td>0.004**</td>
<td>0.389</td>
<td>0.808</td>
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<tr>
<td>1st</td>
<td>204</td>
<td>149.48</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>5th</td>
<td>77</td>
<td>118.55</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd-3rd</td>
<td></td>
<td></td>
<td>4057</td>
<td>-2.311</td>
<td>0.021**</td>
<td>0.405</td>
<td>0.795</td>
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<tr>
<td>2nd</td>
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<td>91.07</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>3rd</td>
<td>100</td>
<td>109.93</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>2nd-4th</td>
<td></td>
<td></td>
<td>8822</td>
<td>-0.425</td>
<td>0.671</td>
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<tr>
<td>2nd</td>
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<td>144.28</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>4th</td>
<td>182</td>
<td>139.97</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd-5th</td>
<td></td>
<td></td>
<td>3033</td>
<td>-2.422</td>
<td>0.015**</td>
<td>0.393</td>
<td>0.711</td>
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<tr>
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<td>97.17</td>
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<td></td>
</tr>
<tr>
<td>5th</td>
<td>77</td>
<td>78.39</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd-4th</td>
<td></td>
<td></td>
<td>7175</td>
<td>-2.944</td>
<td>0.003**</td>
<td>0.394</td>
<td>0.869</td>
</tr>
<tr>
<td>3rd</td>
<td>100</td>
<td>160.75</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>4th</td>
<td>182</td>
<td>130.92</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd-5th</td>
<td></td>
<td></td>
<td>2354</td>
<td>-4.434</td>
<td>0.000**</td>
<td>0.305</td>
<td>0.497</td>
</tr>
<tr>
<td>3rd</td>
<td>100</td>
<td>103.96</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>5th</td>
<td>77</td>
<td>69.58</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th-5th</td>
<td></td>
<td></td>
<td>5872</td>
<td>-2.063</td>
<td>0.039*</td>
<td>0.419</td>
<td>0.850</td>
</tr>
<tr>
<td>4th</td>
<td>182</td>
<td>136.24</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>5th</td>
<td>77</td>
<td>115.26</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Nota: PSest = effect size

The Teacher Educator and the Teacher Education Model as Predictors of PI

Using the stepwise method, we applied multiple regression analyses to determine if the variables i) identification with the schoolteacher profile, ii) identification with the academic professional profile, iii) identification with the academic profile, iv) identification with the researcher profile, v) technicist teacher education model, vi) reflective and critical-intellectual teacher education models, and vii) progression in the program (year) are predictors of PI (Table 5). With respect to the fulfilment of the assumption, VIF values were lower than 10 [.76-1], while tolerance values were higher than 0.20 [1-1.3]. In addition, an acceptable value was found for the generalisation of the model using the Durbin Watson test [1.86].
We found three models in which the variable progression in the program was left out ($p = 0.987$). In model 1, only the critical-intellectual teacher education model predicts PI ($\beta = 0.365, p = 0.000, F = 101.67 [1], R^2 = 0.132$). In model 2, the critical-intellectual teacher education model ($\beta = 0.306, p = 0.000, F = 82.183 [2], R^2 = 0.197$) and identification with the schoolteacher profile ($\beta = 0.264, p = 0.000, F = 82.183 [2]$) are predictors of PI. Finally, in model 3, the variables critical-intellectual teacher education model ($\beta = 0.292, p = 0.000$), identification with the schoolteacher profile ($\beta = 0.227, p = 0.000$), and identification with the academic professional profile ($\beta = 0.087, p = 0.028$) are predictors of PI ($R^2 = 0.20, p = 0.000, F = 56.72 [3]$), exhibiting a medium effect size and high statistical power ($\alpha = 0.05, f^2 = 0.26, df = 7, t_{1-\beta} = 1.00$). Given these indicators, we selected the latter model to establish the prediction of PI.

**Table 5**

<table>
<thead>
<tr>
<th>Linear Regression Predicting Teacher Professional Identity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Variable</strong></td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td><strong>Step 1</strong></td>
</tr>
<tr>
<td>Critical-Intellectual teacher education model</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
</tr>
<tr>
<td>Critical-Intellectual teacher education model</td>
</tr>
<tr>
<td>Identification with the schoolteacher</td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
</tr>
<tr>
<td>Critical-Intellectual teacher education model</td>
</tr>
<tr>
<td>Identification with the schoolteacher</td>
</tr>
<tr>
<td>Identification with the academic professional</td>
</tr>
</tbody>
</table>

**Discussion**

This exploratory study examined the relationship between the variables PI, teacher education models, teacher educator types, and academic progression in preservice teachers. We found empirical evidence that sheds light on how these variables influence the construction of PI, one of the most important dimensions of teacher professionalisation (Beijaard, 2019).

Even though these results offer an exploratory look at the phenomenon studied, they are only an initial contribution to the search for empirical evidence in support of the association between the variables studied and PI. This is especially relevant in Latin America, where it is necessary to determine how students’ PI develops during initial teacher education, how teacher education models impact on the PI constructed (Robinson & Jancic-Mogliacci, 2019), and what role teacher educators play (González-Vallejos, 2018).
Our first specific objective was to estimate the association between students’ PI level and teacher education models, considering the technicist, reflective-hermeneutic, and critical-intellectual models (Tezgiden, 2016). In this regard, we developed two hypotheses: first, that there is a relationship between these variables and PI; second, that the technicist teacher education model has the weakest association with PI.

In this study, we found that—to varying degrees—the encouragement of a technicist, critical-intellectual, and reflective-hermeneutic model in a teacher education program correlated with more teacher PI development, with the critical-intellectual model exhibiting the largest effect size. Nevertheless, the literature on teacher education has underscored the need to prepare teachers using a reflective-hermeneutic model, identifying reflection as the distinctive characteristic of a teaching professional (Krapivnyk, 2021; Schön, 1983).

Our results are in line with those reported by Robinson and Jancic-Mogliacci (2019), suggesting that adequate teacher professionalisation and PI construction require proper command of the necessary technique, ethics, and critical judgment for social transformation, along with reflection for making educational decisions as a professional.

Our second specific objective was to estimate the association between the students’ measured PI level and the type of teacher educator. We hypothesised that PI and the variable type of teacher educator would be significantly related and that the schoolteacher profile would have the strongest association with PI. Results show that students identify with teacher educator profiles closer to school contexts -the schoolteacher profile- and also with more academic profiles. However, it is the schoolteacher profile that exhibits the strongest impact on the relationship with PI. Thus, our findings add further evidence to the literature on teacher education that has highlighted the importance of ensuring that future teachers have role models who are in much closer contact with the real contexts of professional practice, such as schools (Arnold, 2019; Zhao & Zhang, 2017). Authors identified this as a weak point of teacher education in Chile at least 10 years ago, noting that it is disconnected from the school system and its needs (Ávalos, 2014).

Our third specific objective was to estimate the association between PI levels and students’ progression in their program, hypothesising that there is an association between these variables. This link is more clearly present in certain years, which provides empirical evidence confirming how dynamic and complex this educational period is for the development of teacher PI (Salinas & Ayala, 2018). With respect to this phenomenon, our findings suggest that, since the figure of the critical-intellectual teacher has the strongest relationship with PI, the critical capabilities developed as part of this PI may not be only directed towards society and its necessary transformations, but also towards the role that teachers actually play nowadays. In addition, students’ acquisition of situated knowledge while actually practising the profession—as they advance in their teacher education programs—can also infuse tension into students’ PI as a result of the complex and demanding professional climate for teachers caused by the current political and social situation, especially in Latin America (Cuadra et al., 2021).

The above is also a warning, prompting us to reevaluate how we plan practice-based teacher education. This should be done because it is also necessary to articulate formal knowledge with subjective-experiential knowledge, since it is upon the basis of the latter that teachers attach value, meaning, and significance to the teaching profession. Furthermore, teachers often leave the profession due to tensions between their yearnings, needs, and expectations connected with teaching and the formal knowledge that they have acquired to become professionals in an exhausting and demanding work environment (Flores et al., 2020).

Our fourth objective was to establish whether the variables progression in the program, teacher education models, and types of teacher educator are predictors of PI development in pre-service teachers, based on which we hypothesised a predictive model of PI as a function of these
variables. We found that only the critical-intellectual model and the schoolteacher profile predict the development of teacher PI, with a moderate effect size. In line with the results discussed in previous paragraphs, the critical-intellectual teacher identity appears to make the most sense for future teachers, combined with efforts to encourage their professionalisation and practice as teachers in school contexts.

For teachers, the critical-intellectual professional identity can be a source of motivation to pursue a social status that, especially in Latin America, is in a constant state of tension. Nevertheless, it is still unclear whether this identity is also a source of conflict upon entering the school system, as it may intensify the well-known phenomenon of the “clash with reality” (Veenman, 1984). In this regard, we must also consider that the standardisation of teaching as a result of educational policies can often minimise teachers’ involvement in educational decisions (Heimans et al., 2021).

Thus, the social valuation of teachers tends to be binary: they are heroic figures who criticise and take action against social injustice, but they also attract disapproval for their lack of professionalism (Edling & Liljestrand, 2020). Universities should pay close attention to this issue because, during the construction of their PI, teachers must deal with tensions, pressure, and conflicts (Hanna et al., 2020) that can even lead them to neglect their personal and family development in order to live up to this demanding and heroic social role.

Due to the limitations of the present study, we recommend interpreting the results in an exploratory manner. One issue was that, given the lack of instruments for measuring the variables teacher education model and type of teacher educator, it was necessary to develop an ad hoc survey only for the purposes of this study, which despite its shortcomings, yielded some initial insights into these variables. Thus, future studies could focus on measuring the variables types of teacher educators and teacher education models employing a multidimensional and more complex definition of the construct or design direct measurement instruments. Furthermore, it is worth noting that these results must be interpreted within the context of emergency education due to the COVID-19 pandemic, which has forced several in-person teaching programs to be conducted using on-line platforms. It should also be pointed out that PI was measured using a specific instrument that, despite meeting validity and reliability requirements, is not free from carrying an implicit bias towards the “right” PI. In addition, the results presented, given their exploratory nature, enrich our understanding of teacher PI only from a general perspective, that is, as a construct connected to research on teacher education. We focused on the dimension of PI that is common to all teaching specializations (Beijaard, 2019); for this reason, this study did not include specific identities, which may be characteristic of each of the teaching specializations present in the sample. Future studies could examine the association between the variables studied and teacher PI in each specialization.

Finally, let us state that continued efforts are needed to determine how future teachers construct their PI in initial education and what role education models and teacher educators play in this process. A clearer understanding of this subject can yield promising opportunities for enhancing current theories of teacher PI construction while also informing education policy on teacher education.

**References**


Scale en estudiantes de pedagogía chilenos. Interdisciplinaria. Revista de Psicología y Ciencias Afines.


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