

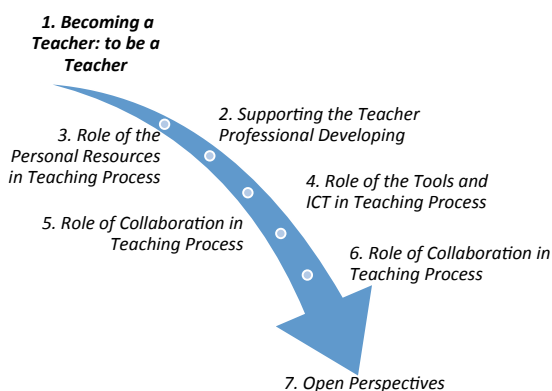
Chapter 1

Becoming a Teacher: To Be a Teacher



Abstract The student-teacher is confronted with a complex transition during teacher education. In this chapter, we explore the student-teachers' challenges during the teacher education to enter in the institutional role and shape the new professional identity. A research about a teacher-student in French context is discussed, followed by a focus on novice to expert transition. In the end, a brief introduction about the indirect method of instructions, the teacher-student master dissertation's role is discussed concerning the teacher standards toward a personal epistemic synthesis of the teaching experience.

Keywords Transition · Student-teachers · Novice · Expert · Teacher standards



The student-teacher is confronted with a complex transition during teacher education. Simultaneously, the educational system of teacher education faces the main challenge to promote in a short period the passage from theory to teacher practice (Bullough & Gitlin, 2001). In this section, we explore the student-teachers' challenges during teacher education to enter into the institutional role and shape the new professional identity. We have identified two dimensions: the teacher's professional identity and the passage from theory to practice, with a focus on the management of content, activity and technology according to a TPACK model. Then, research about a teacher-student in the French context is discussed, followed by a focus on

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the novice and expert passage. In the end, a brief is introduced about the indirect method of instructions. Simultaneously, the teacher-student master dissertation's role is discussed concerning the teacher standards toward a personal epistemic synthesis of the teaching experience.

1.1 Acquiring a Teacher Professional Identity

Teachers enter in the role with time and shape the new identity gradually. Identity is not something fixed in time. A prominent perspective on identity is the Dialogical Self (DS) Theory (Hermans & Gieser, 2012).

The DS theory was introduced by Hermans (2013) in the wake of American pragmatism and Russian dialogism. He proposed the idea of a flexible self that is composed of multiple positions encompassing different aspects of the Self. An I-position can be considered a “voice”. It could be the internal I-position (inner voices of the Self, recognisable most of the time marked by the expression “I am ...”) or external (voices initially coming from relevant others but incorporated within the unique landscape marked by the term “my ...”). I-positions are dynamically relational in the intersection of personal and societal forces through tension. I-positions are also social, in between persons and groups. The notions of uncertainty and discontinuity are useful to describe identity as a fluid feature, always continuously changing, shifting from context to context and from moment to moment. The DS stresses spatial but also temporal transformations (Hermans & Hermans-Konopka, 2010). The DS theory offers the right lens through which to understand how individuals interpret and make sense of such interconnections between identity and situations.

Teacher professional identity (TPI) is a complex and multi-core concept, consisting of several factors intertwined, such as the conceptions and expectations of others, social image, practical experience and personal background. Identity is formed by engaging with others, shaped by the context, the experience in the field and the biographical teaching profile. Beijaard et al. (2000) describe the identity of teachers as being composed of three sub-identities:

- pedagogical expertise;
- subject matter expertise;
- and educational expertise.

Recently TPI has been conceptualised as a continuous and dynamic process of sense-making and reinterpretation of values and experiences, at the same time unitary and multiple, continuous and discontinuous, individual and social.

Cultivating a sense of who we are—and are becoming—is a continuous interpretation process that does not have a stable character but is complex and shaped by personal and contextual factors. Being a professional involves more than understanding concepts and developing skills. It involves personal transformation: learners begin to construct a professional identity within educational contexts. Supporting

learners to take up professional identities is thus a critical but under-interrogated role played by tertiary institutions.

Simultaneously, during the teacher education, the students are involved in different stages and experiences in the classroom, more or less in complete autonomy and responsibility of the classroom. The growing process of teachers is embedded in challenges. As recognised in educational literature, student-teachers mainly struggle to integrate knowledge into the practical context of a classroom (Blomberg et al., 2011), finding it difficult to pay attention to critical elements of classroom instruction and to deal with the complexity of classroom interactions. For this, in the next section, we focus on the circular dynamic between theory to teacher practice.

1.2 Circular Dynamic Between Theory to Teacher Practice

We consider that central to shaping teacher professional identity for a student-teacher links theory and practice, a central issue for teacher education (Falkenberg et al., 2014). Initial teacher education proposes integrating theory and practice in practical experience during field experience that could make visible the invisibility of learning (Mitton-Kukner & Murray Orr, 2014). During the first experiences in the classroom, teacher-students have the opportunity to confront themselves with practical questions and problems. In this way, the first teaching experiences help to connect education and professional settings.

Student-teachers can successfully link pedagogical knowledge to classroom practice if they acquire the ability to shift from theory to practice but also develop the attitude to apply critical reflection on their practice. Teachers' education is a process 'in progress' that involves the interpretation and reinterpretation of experiences (Kerby, 1991) through a process of reflection that activates the cognitive and emotional resources. Therefore, the review should be continuously supported, as a personal assessment and as a step to continuing education.

Teacher education could play a transitional role in supporting the TPI and the passage from theory to practice considering the structure, the curriculum and the immersive social experiences with other peers and teachers. Participation in a learning community leads to the acquisition of new rules, roles, practices, and processes, which leads to becoming a professional and affects identity (Brown & Campione, 1990). In a community of practice (CoP) (Wenger, 1998), the concept of learning is as a process related to participation in contextualised practices, influencing and interacting dynamically with the methods of identity construction. Indeed, the learning process allows the construction of new meaning and decision making for teacher identity.

The student's entry to a teacher professionalism can be conceptualised as a gradual process of integration into the teacher community, which we analyse with the framework of the legitimate peripheral participation model. The Legitimate Peripheral Participation model (Lave & Wenger, 1991), explains how it is possible to move

from peripheral participation to more central participation for a neophyte who gradually learns to participate in community practices. The model considers the knowledge acquisition as progression participation, from the periphery to the community's centre. In particular, Wenger (1998) distinguishes four forms of participation:

- two are more distinct as full participation (consists of the active involvement of the participant) and full non-participation (consists of not being part of a community and therefore in exclusion from it);
- and two see peripheric and marginality represent more subtle forms of non-participation. On the periphery, non-participation is understood as limited participation and constitutes a progressive opportunity for learning; marginality, on the other hand, prevents full participation and could lead to non-belonging as isolation.

As newcomers, the student teachers move from the position of a general student to full participation as a teacher. This progress process of expertise is intended as a gradual trajectory, conditioned by the situation's nature. The novice in this process has the chance to experience access to local resources, developing relational and procedural skills (Brown & Duguid, 1991).

Joining into the Community of Practice is particularly useful when the participants have full access to different parts of the practices; there is sufficient horizontal interaction among participants and when the resources, technologies and structures are transparent and available.

Interaction with experts helps the newcomer 'see' the social-mediated reality, encouraging the understanding and the coordination of tasks.

The practical experience established a bond of reciprocity between professionalism and education. The experience of the stage in teacher education is the moment of crossing the boundary between the educational and professional system. Indeed, the internship creates a pattern that connects (Fig. 1.1): the educational and professional contexts are intermingled and mutually beneficial, allowing the student teacher to experiment competently in a context that creates meaning.

Therefore, the stage requires specific skills and is dependent on the resources and constraints of the contexts of use. However, the skills acquired directly in specific contexts show low generalisation ability and will meet unexpected changes or difficulties if no theoretical support is offered or made available. For this, the practical experience must be done in continuity with the academic education, helping

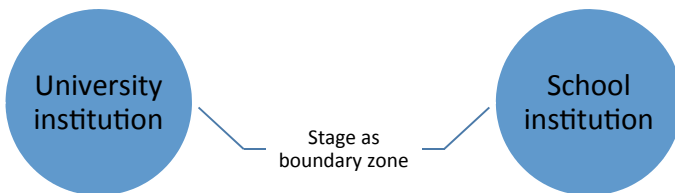


Fig. 1.1 Stage as a boundary zone

the student teachers to adapt to the unpredictability and changes of the transition process. Therefore, it is crucial that the advantage of experience, through simulated environments and social interactions specially created, smooths this transition. In this process, the exchange of the novice with the expert becomes central. The cognitive characteristics of an expert (Scribner, 1984) are the definition of the problems, flexible solutions, integration of the context in the problem-solution system, optimisation of effort as a strategy and dependence on specific knowledge. The expert develops the ‘know-how’, especially in uncertainty and transformation situations, putting together reflection and action. Thus, there emerges a multidimensional and hybrid view of expertise (Tuomi-Grohn et al., 2003).

1.3 From the Content to the Activity

This section focuses on a model widely spread in the literature and at the same time also widely discussed.

Mishra and Koehler (2006) theorised the TPACK model by adding a third dimension (Technological Knowledge: TK) to the Shulman’s model (1987) which was based on two dimensions (Pedagogical Knowledge: PK; and Content Knowledge: CK). Three fundamental dimensions (TK, PK and CK) and the interactions between them compose the model:

- TCK (Technological Content Knowledge);
- TPK (Technological Pedagogical Knowledge);
- PCK (Pedagogical Content Knowledge) and TPCK (Technological Pedagogical Content Knowledge).

This theoretical framework emerged from many empirical works and practical applications.

However, very few of them investigated the national and cultural context as a possible factor dependent on the TPACK. The study of Castera et al. (2019) highlighted the significance of the model in cross-national research contexts. This study is interesting because many researchers investigated TPACK in separate national contexts and rarely from a cross-national perspective.

More research on the international application of TPACK helps to evaluate the value of the model, and it could become a tool also in the hands of the teachers. Indeed, they can check the combination of the three main dimensions in their practices. As a “diagnostic” tool, the teachers can change, re-think and re-frame their activity.

A Theoretical Focus: From Expert to Novice The novice’s entry into a “community of practices” is referred to as “*Legitimate Peripheral Participation*” by Lave and Wenger (1991). In this perspective, the beginner (defined with the term newcomer in international literature) moves from a peripheral

position to a central one, gradually modifying their participating ways. This path is intended as a gradual trajectory, conditioned by the specificity of the situation, which can hardly be established and predetermined a priori. The transition from the external and peripheral position to the central part allows the individual member to become expert in the specific practice of the community and therefore to become a useful member.

During the process, the novice has access to local resources, developing increasingly specific relational and procedural skills: abstract and decontextualised notions, work practices, social roles and appropriate and strategic communication behaviours typical of the organisational context into which it is inserted.

According to Lave and Wenger, learning how to participate in a community of practice is particularly useful when:

- a. participants have full access to different parts of the activity and proceed over time towards broad participation in the central tasks;
- b. there is sufficient horizontal interaction between the participants, mostly mediated by stories of critical situations and their solutions;
- c. the technologies and structures are transparent; that is, their functioning is available and recurrent.

Hutchins (1995) speaks of an “observation horizon”. The concept underlines the novice’s perspective to participate in activities through different channels, such as written and verbal instructions, imitation or simple exposure to the behaviour of others and active sharing working practices, interpretative models and community customs and organisational rituals.

As Wenger (1998) points out, “when newcomers enter the community, generational discontinuities propagate and expand within them; relationships change in a cascade process” (p. 107): the members already inserted become old and the newcomers are helped to integrate. Even non-expert colleagues play an essential role in the insertion of the new member, motivating comparison and mutual exchange: the socialisation of knowledge allows the construction and sharing of solutions, the acquisition and use of specific terminology, mutual support and the exchange of suggestions and ideas.

The analyses conducted by Goodwin (1994) on the participation of newcomers in the expert practices of different types of communities are located in this direction. The author performs an exciting study on the analysis of learning the “professional vision” of an archaeologist apprentice. During the discursive negotiation that takes place continuously in the operational phases of the excavation, the expert archaeologist helps the apprentice to “see” the difference between the “cultural” material compared to the “natural” material present in the debris. This discrimination occurs through an articulated visual, gestural and verbal interaction between the two archaeologists of different competence.

Goodwin (1994) notes three strategies used to encourage learning professional practice:

- The coding schemes: consists of external stimuli organised into categories and events relevant for professional work. Through this process, it is possible to organise and facilitate the learning process, circumscribing and delimiting what needs to be examined.
- The highlights: makes what is deemed relevant for the specific activity visible to others.
- The graphic representations: detects and organises the collection of a wide range of aspects in a single model, such as graphics, photographs and inscriptions.

The centrality of the newcomer's learning path in community practices allows us to understand how knowledge and innovations circulate within the community. It could help the whole educational institution better organise the integration and adaptation stage of the teacher and the development of the community of teachers.

1.3.1 From the Research: *French Teacher-Student in Classroom*

In this section, research in the French context is proposed. At the end of the obligatory middle school, students can choose between the vocational high school, for professional and technical learning, or humanistic and technological high school. It takes two years to prepare for The Professional Skills Certificates, called CAP, and three years for the Bachelor Professionals, called Bac Pro. These qualifications attest to the acquisition of knowledge and skills in an industrial or tertiary professional field.

To teach in high schools, teachers must hold a master degree called “*Métiers de l'enseignement, de l'éducation et de la formation*” (MEEF) provided by their university, and pass a national examination. In this way, the teacher gains the so-called ‘*Le Certificat d'aptitude au professorat de lycée professionnel*’ to be able to teach. Since the 2013 academic year, the Higher Schools of Teaching and Education have provided initial teacher education. French teacher education has a long theoretical and vocational tradition.

The current structure of teacher education aims to achieve a double objective:

- complete the process of ‘universalisation’ of initial teacher education (undertaken by the reform of 2009);
- establish an integrative approach between theory and practice during the master programmes.

The student teachers can gradually enter into the profession. In the first year, teacher students follow a primary pedagogical and disciplinary curriculum. In the second year, the teacher-students admitted to the national evaluation, have the status of ‘official trainees’ and can undertake practical experience in a school, corresponding to the equivalent of part-time teaching service. The stage enables students to acquire knowledge and build the skills necessary to become a professional teacher. At the same time, they gain the ability to do their job by applying traditional methods and approaches and designing appropriate education schemes for each student, taking into consideration any difficulties related to students’ social status. The aim is to reach a common foundation of knowledge and skills for all student teachers, making them capable of acquiring a professional qualification.

As in different countries, teacher education in France is always in evolution due to political reforms. For example, teacher education is organised as follows – a situation that it will evolve in the future:

- In the first year of the master’s course (M1), the practical experience consists of activities of observation, aimed at the construction of the teaching early skills. The teacher students have to: (a) actively participate in teaching sequences, considering the respective subject area and grade level; and (b) assess the effectiveness of choices. The goals are achieved with strict collaboration between the teacher education teaching staff and the guided scholastic supervision.
- In the second year of the master’s course (M2), the practical experience allows each teacher-student to work in the teaching profession under appropriate monitoring and scaffolding supervision. The student-teacher participates in all activities concerning the life of a school, in terms of teaching (preparing lessons, teaching lessons, assessment, etc.), academic support (participation in academic life) and institutional involvement (involvement in the school project, relationship with stakeholders, etc.).

In the following section is an example of a student-teacher’s learning trajectory during the practical experience (for more details, see the two full papers of Cheneval-Armand & Impedovo, 2016; Impedovo & Cheneval-Armand, 2016). To understand the student-teacher’s learning trajectories, we observed and analysed three video sessions. The first video recorded the student-teacher in a real classroom at a vocational high school in Electronics, Energy and Communicating (ELEEC). Twelve boy students attended the lesson, with an average age of 17, enrolled in the last year of vocational high school. The second video recorded a meeting between the student-teacher and the university trainer, while the third video shows a meeting with the senior teacher. The videos and field notes were collected and qualitatively analysed by two researchers. This analysis gives an account of the learning trajectory of the student-teacher toward her teacher professional development.

The research presented here concentrates on the comparison of three sessions (see Table 1.1), in which the focus is on the teacher-student, first in the classroom and then in discussion with the trainer and the teacher. From the qualitative data collected, we have identified eight indicators grouped into three dimensions in the three sessions:

Table 1.1 Dimensions and indicators of the process of a learning trajectory for the student-teacher (Impedovo & Cheneval-Armand, 2016)

Dimension	Indicators
Pedagogical expertise	Object-oriented activity Questions Individualised support
Educational expertise	Rules Responsibility for student’s learning Meaning of learning
Subject matter expertise	Situated learning Correct content

- a. Pedagogical expertise;
- b. Educational expertise;
- c. Subject matter expertise.

The analysis of the three dimensions reflects those identified by Beijaard et al. (2004).

In the first session, it emerges a vision of a teacher who plays a very central role in conducting activities, trying to keep control through the use of artefacts and a highly structured task. During the lesson, the student-teacher tried pedagogical and teaching strategies, such as scaffolding. The techniques repertoire is enriched in the session, but the user remains highly circumscribed and contradictions (Fig. 1.2).

The comparison between the expertise and the novice takes place during the two sessions. With the university, the trainer emerges from the educational dimension, while the teacher focuses on the content, with the need to deeply anchor it in the context. Both the experts in their discussions focus directly on trainee’s omissions or trainee’s non-appropriate choices. We can identify an acceptance attitude by

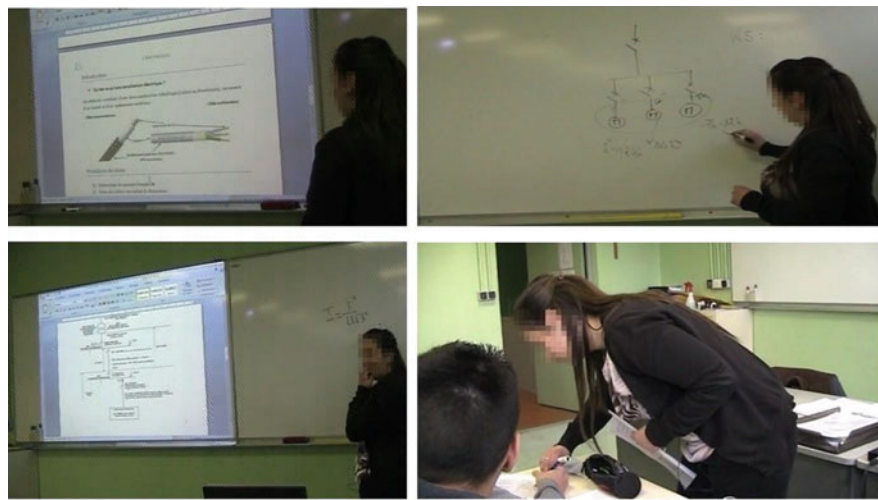


Fig. 1.2 The teacher-students in her first lesson (photos by the author, published in Impedovo & Cheneval-Armand, 2016)

the senior teacher (probably for the preview relationship as supervisor) and formal and distant communication by the university tutor, due likely to the “academic” institutional role. From the teacher-student answers during these confrontations, we can trace forms of resistance to change but also a progressive awareness. Expertise finds flexible and contextualised solutions, optimising effort and specific knowledge (Scribner, 1984).

For this reason, we believe that a real practice for student teachers during teacher education is a crucial moment to gradually entering the teacher community. It can particularly be useful if supported by reflection shared with an experienced educator aimed at finding new meaning and alternative scenarios. This support should also provide positive and constructive feedback, taking into consideration also the emotional side of the role of counselling. Indeed, expertise is a tricky quality to achieve. Still, the right support with a positive attitude by peers affects the development of teacher professional identity (Akkerman & Meijer, 2011) and professional development. Observing how this happens provides useful guidance for structuring targeted interventions to improve student teachers’ development. The articulation of teaching for the acquisition of knowledge, the building of competence, and the balance between the different experiences are vital issues in professional development.

1.3.2 *In Practice: The Teacher-Student Master Dissertation*

In France, the teacher education curriculum condenses different discussions about the link between professionalism and theoretical knowledge. It is proposed to articulate scientific and pedagogical professional knowledge; the practice of the profession but also the integration of educational research.

Fabre and Lang (2000) distinguish three constitutive tensions about the thesis in the teacher-education master: (a) the adhesion to the paradigm of the apprentice researcher or to that of the reflective practitioner; the tension between the research report and the trace of an adventure of awareness; the tension between a personal trajectory and professional socialisation. The writing process testifies in different ways to a path of identity development, strengthened by research and reflection on the professional practice in question. The dissertation becomes such a new genre (Crinon et al., 2005), which testifies the teacher figure’s complexity, from theory to action. Proposed also as a collaborative activity, the writing group process let the articulation of a joint reflection. Here are some extracts by French teacher-students about the online and in-person articulation of the collaborative writing process experienced during the dissertation:

Extract 1:

The face to face discussion in the group helps the development of a general understanding of what is required to advance. Online, except for the work done to meet the deadlines, the time can be badly exploited or the work postponed until the last minute.

Extract 2:

When developing the research question, the hypothesis and the design of the data collection it is, I think, essential to be face-to-face in a group to be able to really bring out all the ideas and discuss freely. For the drafting and analysis of the results, remote work is largely feasible insofar as the group communicates easily with interfaces like Microsoft Teams where all the work is shared and automatically updated.

1.3.3 The Idea to Explore: The Indirect Method of Instructions

The indirect method of instructions is a modality to collect data which was used in the 1970s in car production. The work psychologist Ivar Oddone designed this analysis device. It consists of an explanation process of one's own work modality to another one interlocutor, called the "double". The instruction is so formulated: "Let us imagine that I am similar to you. Tomorrow I have to replace you at your workstation: tell me now what I have to do so that no one notices the substitution". The working modalities are so shared, and the interlocutor has all the instructions to act in replacement. The activity is performed in front of a group of peers. The process is aimed to show the folds of habits, and automated gestures condense in action. The focus is on the story to be performed by the interlocutor, so it must be straightforward and easy to understand. This method was adopted by Clot to be deployed in many formative situations. This device turns out to be a real experience of the visibility of everyday work. Kloetzer (2015) applied this method in the analysis of the tutoring learning process, showing the importance for the tutor to know how to analyse their own activity but even more to learn to analyse the apprentice's activity.

1.3.4 Professional Insight: Teacher Standards and Epistemic Synthesis

In a hyper-connected world, initial and continuous teacher education proposed by higher institutions remains generally limited to national borders. More, an increasing number of professional standards describing competencies for teaching staff have appeared in different states around the world. For example, there is in Australia the National Framework for Professional Standards for Teaching 2003; in England the Training and Development Agency for Schools 2007 and in the USA the National Board for Professional Teaching Standards 2001. As discussed by Goodwin (2020), the globalisation and its pervasive neoliberal ideologies have contributed to the rise of teacher "standards", a crystallisation of cultural, political and social perspectives in a sort of "tick-box professionalism" (Goepel 2012, p. 489).

The idea of accessible tools for easy identification of teachers’ skills is highly seductive for the evaluation system. At the same time, the teacher professionalism brings internal contradictions: for example, democratic versus managerial professionalism (Whitty, 2008); individual versus institutional (Wermke & Höstfält, 2014); external versus internal accountability (Fullan et al., 2015). Labaree (2003) claims that teacher culture is characterised as practicality oriented, limited to normative thinking and anti-intellectual rather than trained to be an inquirer or a free thinker. Choi (2020) shows a personal confrontation with the anti-intellectual mindset, as most teachers stay in their comfort zone and resistant against complex higher-order thinking.

An example is seen in Table 1.2 with the French Educational Minister teacher standard (2013). The French reference is organised in “Shared competences to all teachers and education staff” with 14 skills. Each competence is detailed with a description and two operational sets of indications.

Table 1.2 French standards (translation by original French official public version online)

Shared competences of all teachers and education staff	Competencies common to all teachers
<div>1. Share the values of the Republic</div> <div>2. Include its action within the framework of the fundamental principles of the education system and within the regulatory framework of the school</div> <div>3. Teachers and education staff, pedagogues and educators at the service of the success of all students</div> <div>4. Know the students and the learning processes</div> <div>5. Take into account the diversity of students</div> <div>6. Support students in their training path</div> <div>7. Act as a responsible educator and according to ethical principles</div> <div>8. Master the French language for communication purposes</div> <div>9. Use a modern foreign language in the situations required by his profession</div> <div>10. Integrate the elements of digital culture necessary for the exercise of his profession</div> <div>11. Cooperate within a team</div> <div>12. Contribute to the action of the educational community</div> <div>13. Cooperate with the parents of students. Cooperate with school partners</div> <div>14. Engage in an individual and collective process of professional development</div>	<div>1. Master the disciplinary knowledge and their didactics</div> <div>2. Master the French language as part of its teaching</div> <div>3. Build, implement and animate teaching and learning situations taking into account the diversity of students</div> <div>4. Organize and ensure a group operating model that promotes learning and socialization of students</div> <div>5. Evaluate the progress and the acquisitions of the pupils</div>

Another recent example of a teacher's standard is the Bhutan Professional Standards for Teachers (BPST). It categorises teachers into four career stages – beginning, proficient, accomplished and distinguished. Teachers' base salary compensation will reflect their categorisation, and not anymore only the compensation based on seniority. The categorisation would be found on the seven standards, which are further divided into 37 focus areas. The seven criteria include the diversity of learners, learning environment, content knowledge and pedagogy, planning and teaching, assessment and reporting, personal growth and professional development, and professional engagement and Bhutanese values.

The analysis of teacher standards can give information about the teachers' representation and the features attributed to it. An example of research is done by Goodwin (2020) on US, Australian and Hong Kong teacher standards to find teacher representation and influence of globalisation.

In another study, Ceulemans et al. (2012) reports on a pilot study that applies a socio-technological 'lens' to examine this standardisation process in Flanders' educational policy. As they propose from the analysis:

The reshaping of the list of competencies, and the accompanying processes of identification and differentiation by teacher training programmes, then, are not signs of failed standardisation but signal that the core competencies actually start to 'work' as standards. As in Latour's (1987) 'immutable mobiles', the core competencies themselves do not change, as they are defined in the Decree. Rather, they are mobile; they are taken on in many forms, e.g. across different training programmes, by different teachers, and in different teaching contexts. (p. 43)

To keep open a dialectic reflection on references standards, it means to start a genuine negotiation on teacher education and the teacher role with all the tensions, contradictions and ambiguities embedded. The multiple inconsistencies in teacher education and the teacher role have to be addressed in a personal and collective professional epistemic synthesis.

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