



Teachers' perceptions of professional identity: an exploratory study from a personal knowledge perspective

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Abstract

The purpose of this study was to investigate experienced secondary school teachers' ($N = 80$) current and prior perceptions of their professional identity. A questionnaire was used to explore the way teachers see (and saw) themselves as subject matter experts, didactical experts, and pedagogical experts. The teachers currently see their professional identity as consisting of a combination of the distinct aspects of expertise. Most teachers' current perceptions of their professional identity reportedly differ significantly from their prior perceptions of this identity during their period as beginning teachers. On the basis of their current perceptions of their professional identity, five groups of teachers could be distinguished. These groups had different learning experiences throughout their careers for each aspect of expertise. Also, teachers from different subject areas did not undergo the same changes in their perceptions of their professional identity. The differences among the groups in teachers' current perceptions of professional identity were not related to contextual, experiential, and biographical factors that might influence these perceptions. © 2000 Elsevier Science Ltd. All rights reserved.

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1. Introduction

Much of the current research agenda on teaching encompasses craft knowledge, practical knowledge, personal practical knowledge, and pedagogical content knowledge (cf. Fenstermacher, 1994; Hoyle & John, 1995). All these types of knowledge refer to teacher knowledge expressed in practice which is, above all, experiential and implicit (Eraut, 1988). Despite a lack of consensus about definitions of the distinctive types of teacher knowledge in practice (Beijaard & Verloop, 1996), there is some evidence

that the research on this knowledge has led to new insights (Darling-Hammond, 1996). As yet, however, researchers still only minimally understand teachers' processes of interpreting and personalizing theory and integrating it into conceptual frameworks that guide their actions in practice (Eraut, 1994). Developing such frameworks is more problematic for teachers than for professionals in many other fields, because teachers are not so much in a 'knowing' environment as in a 'doing' environment (Clandinin, 1986; Eraut, 1994).

Research on teacher knowledge in practice focuses on many topics. This study concentrates on teachers' knowledge of their professional identity, i.e., how they perceive themselves as teachers and what factors contribute to these perceptions.

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Though identity itself is still a poorly defined concept, an increasing number of researchers are exploring this topic in the field of teaching (cf. Kompf, Bond, Dworet & Boak, 1996). Teachers' perceptions of their own professional identity affect their efficacy and professional development as well as their ability and willingness to cope with educational change and to implement innovations in their own teaching practice.

This exploratory study deals with teachers' perceptions which – in our research – can be defined as representations of their understandings of their own professional identity (cf. Atkinson, Smith, & Hilgard, 1987). From this point of view, we assume that teachers' perceptions of their professional identity reflect their personal knowledge of this identity. We confined the study to experienced teachers in secondary schools. In the study, a theoretical framework was used to operationalize what teachers' professional identity should be taken to mean, including factors that may influence this identity. The study addressed the following questions: (1) How do experienced teachers perceive their professional identity, now and at the beginning of their careers?; (2) what have been, in view of this identity, their most important learning experiences throughout their careers?; and (3) can factors be identified that influence these perceptions of their professional identity? Answers to these questions may, first of all, contribute to a better understanding of teachers' professional self-image and how this self-image comes into being (Knowles, 1992). In the long run, studies like this may also lead to insight into teacher perceptions that may hinder or promote innovations, particularly if factors can be identified that influence these perceptions.

2. Teachers' professional identity and influencing factors

First of all, this section deals with what the concept of identity means in relationship to the teaching profession. Teachers' professional identity will be described in terms of the teacher as a subject matter expert, the teacher as a pedagogical expert, and the teacher as a didactical expert. What follows

is a short review of factors that are assumed to more or less influence teachers' professional identity.

2.1. Identity and teacher profession

In earlier literature (e.g., Erikson, 1968), the concept of identity was often vaguely described in terms of “the self” and one's self-concept (see also Mead, 1934). From this perspective, identity of the self is seen to be established and maintained either through negotiations within social situations, or through social roles that are internalized by the individuals (Wah Tan, 1997). Identity can generally be defined as who or what someone is, the various meanings people can attach to themselves, or the meanings attributed by others (Beijaard, 1995). Nowadays, identity formation is conceived as an ongoing process that involves the interpretation and reinterpretation of experiences as one lives through them (Kerby, 1991). Through self-evaluation, one's identity is continually informed, formed, and reformed as individuals develop over time and through interaction with others (Cooper & Olson, 1996). Both self-evaluation and identity are part of one's self-image. Nias (1989) wrote that people feel threatened when they face changes that influence their self-image and, consequently, their personal identity. To cope with such changes, people often develop strategies as a protection against being forced to perceive themselves in another way. Nonetheless, people are able to further develop, adjust, or even radically change their self-image. There are no reasons to assume that teachers are exceptions to this rule.

Up till now, little research has been done on teachers' professional identity and, except for so-called ‘life-cycle’ research (e.g., Bloom, 1988; Huberman, 1993), the way they develop this identity. However, some research attempts are being undertaken now, but – as was mentioned before – in most cases this research lacks a clear definition of a teacher's professional identity (cf. Kompf et al., 1996). In an earlier research project, we attempted to define this identity on the basis of three distinctive categories, namely: the subject one teaches, the relationship with students, and the teacher's role or role conception (Beijaard, 1995).

Subsequently, each category could be divided into a number of subcategories (14 in total). For each subcategory, teachers were asked to clarify their actual perceptions and prior experiences. This research has led to some interesting results, such as changes found in relevant features of teachers' professional identity as a result of experiences and contextual influences, but it appeared to be difficult for teachers to focus on each subcategory separately. With regard to some subcategories, teachers also found it difficult to clarify their perceptions, which seems to conflict with the relevance they attached to the subcategories as representations of their professional identity. Apparently, several of these categories appeared to be taken for granted by them and immune from reflection.

Against the background of these research experiences, we reconsidered relevant categories that cover a teacher's professional identity. As we were inspired by the work of Bromme (1991), the following statement became the starting point of this research: teachers derive their professional identity from (mostly combinations of) the ways they see themselves as subject matter experts, pedagogical experts, and didactical experts. In European studies and teaching practices, these are common concepts to indicate what a teacher should know and be able to do.¹ These concepts are described below.

2.1.1. The teacher as a subject matter expert

Traditionally, knowledge of subject matter is a relevant part of a teacher's professional knowledge base. Until some decades ago, most people believed that knowledge of subject matter and some on-the-job training was sufficient for being a good teacher (Hoyle & John, 1995). Nowadays, it is widely accepted that such a conception of teaching takes insufficient account of the complexity of teaching, and new conceptions of the teacher as classroom manager, facilitator of learning, etc. are

acknowledged. Teaching is much more than the transmission of knowledge.

One consequence was that subject matter knowledge became a neglected issue in research on teacher knowledge. A renewed research interest in subject matter knowledge, especially its transformation into teachable knowledge, was inspired by the work of Shulman (1987) a decade ago. On the basis of research, Bennett and Carré (1993), for example, strongly argued for programmes in teacher education that allow for self-diagnosis and evaluation of subject matter knowledge. They proposed independent learning units in case of insufficient subject matter knowledge. They found it important for teachers to possess this knowledge so that they can change programmes, develop effective tasks, explain things at a high quality level, and diagnose students' understandings and misconceptions adequately.

It is generally agreed that teachers require a deep and full understanding of the subject area, in other words, an understanding that is characterized by a knowledge of many concepts and their relationships (Calderhead, 1996).

2.1.2. The teacher as a pedagogical expert

Teaching cannot be reduced to a technical or instrumental action that results in learning gains with students. This didactical side of the teaching profession must be related to a pedagogical side with ethical and moral features. One such feature, for example, concerns a teacher's involvement in or engagement with students. This encompasses, among other things, what is going on in students' minds, ways of communicating with and speaking about other people, and personal or private problems students have. Pedagogical aspects like these are relevant to teachers' personal and professional role conception (Beijaard, 1995). Many people believe that present conceptions of the teaching profession pay too little attention to the pedagogical side, while in practice teachers are continually confronted with this (Fenstermacher, 1992; Oser, 1992).

In general, moral and ethical dimensions are more present in teaching than in many other professions (cf. Fenstermacher, 1994). In our post-modern societies, teachers increasingly face moral, social, and emotional dilemmas, such as: How can

¹ In the Netherlands, in other European countries as well, these concepts are relevant components of models and theories of teaching on the basis of which (student) teachers organize their work. There is overlap in meaning between the Anglo-Saxon concept of pedagogy and the European concept of didactics. The former also consists of aspects of the latter, whereas in European countries both concepts have different meanings.

we educate students for uncertainty? How can we educate students with multicultural and different social backgrounds? How should we cope with consequences of a society in which social control has been replaced by strong processes of individualization? How do we deal with “deviant” student behaviour? How should we judge and discuss other sources of information and technologies that are available to students now? How can we diagnose and help students to overcome problems as a result of divorce, sexual abuse, etc.?

Apart from these dilemmas, teachers should be aware of many norms and values involved in their interaction and relationship with students. In fact, all educational choices reflect values (Damon, 1992). Norms and values are a relevant part of teachers’ professional thoughts and actions on which they should reflect and be explicit (see also Goodlad, Soder & Sirotnik, 1990). There is some research evidence that many teachers find the pedagogical side of their profession more important than the didactical side and the subject matter side (Beijaard & De Vries, 1997). There is also research evidence that this part of teaching enhances the quality of students’ learning processes (Oser, 1992). However, these findings need to be underpinned by more research, particularly regarding the school level involved and years of teaching experience.

2.1.3. *The teacher as a didactical expert*

Models of teaching (e.g., Joyce & Weil, 1980) have traditionally had a strong impact on the education of teachers. In general, these models prescribe how the planning, execution, and evaluation of lessons should be done. Through such models, a teacher explicitly learns to consider relevant aspects of teaching. Meanwhile, however, these models do insufficient justice to the reality and complexity of teaching in practice (Beijaard, 1990; Doyle, 1990a). As a reaction to this criticism, a more constructivist view of learning to teach emerged, which emphasized reflection and learning from experiences (cf. Zeichner, 1983). To some extent, this view is under fire now: it insufficiently succeeds in helping (student) teachers to develop consistent and adequate knowledge structures that systematically and progressively guide their actions in practice (e.g., Bennett & Carré, 1993; McIntyre

et al., 1996). Recently, therefore, there has been a renewed interest in offering (student) teachers frameworks based on theory and research findings. These frameworks should not function as prescriptions but as tools for (student) teachers to sharpen their perceptions; it is their own responsibility to what extent they make use of them as rich ideas for thought or reflection.

In recent thoughts about teaching, traditional teacher-centred conceptions of teaching are increasingly being replaced by more student-centred ones with greater emphasis on learning and less on teaching. Influenced by societal developments and new research outcomes in the field of educational psychology, a teacher must be more of a facilitator of learning and less of a transmitter of knowledge; this implies a shift toward the so-called process-oriented instruction which focuses on the learners’ processes of knowledge construction and utilization (e.g., Vermunt, 1995). This shift in conception of teaching has far-reaching consequences for the teacher’s role in general, and for his or her knowledge and skills in particular: the main tasks here are initiating, guiding, and influencing students’ thinking activities, and gradually transferring control over the learning process from the instructor to the learner. Particularly this shift towards another teacher role is expected to affect teachers’ perceptions of their professional identity.

2.2. *Influencing factors*

These days, a great deal of research on teaching focuses on teachers’ teaching contexts, their experiences, and biographies. It is generally assumed that these elements, often in interaction with each other, influence a teacher’s thoughts and actions. In this study, these elements are considered as categories of factors that might influence a teacher’s perceptions of his or her professional identity.

2.2.1. *Teaching context*

A teacher’s teaching context has a strong influence on his or her knowledge base. This context consists of the ecology of the classroom and the culture of the school. As regards the ecology of the classroom: teaching is, to a large extent, event-structured or situational, and can be qualified as

particularistic (Doyle, 1990b). From a situational perspective, teaching takes place on the basis of unarticulated knowledge, which is difficult to codify because it comes into being spontaneously, and functions routinely. Brown and McIntyre (1992) call this professional craft knowledge, which guides a teacher's daily actions in the classroom.

The culture of a school encompasses conceptions, norms, and values shared by the participants involved, which lead to a specific way of working (cf. Nias, 1989). Relevant parts of a school culture are: expectations of the community, students, members of the school board and colleagues; prescriptions based on the curricula used; and the physical and material environment (Duffee & Aikenhead, 1992).

It is possible that more than one teaching culture may be present in a school. Getting familiar with these cultures does not necessarily need to be the result of a socialization process into the school alone; it can also be the result of a teacher's personal development (Feiman-Nemser & Floden, 1986). Teaching cultures and school cultures determine – probably to a large extent – the stories of individual teachers, i.e., the way they perceive their professional identity. Reynolds (1996) wrote about schools as workplace landscapes that are related to teachers' identities by cultural scripts which prescribe what they think and do. According to Yinger and Hendricks-Lee (1993), their knowledge and expertise have too often been studied as a property of the individual; in their opinion it may be more appropriate to consider that knowledge as lying within the interaction of particular contexts and situations. They suggest that, in particular, teachers' working knowledge is as much dependent on the environment in which they work as on the individuals.

2.2.2. *Teaching experience*

The influence of experience on teacher knowledge can only be determined by comparing experienced with non-experienced or novice teachers. Most of these comparative studies assume that experienced teachers are – at least to a large extent – also expert teachers. On the basis of this assumption it can be concluded that the knowledge of experts is: (1) specialized and domain-specific;

(2) organized in more encompassing knowledge units (e.g., metaphors, images, illustrations, etc.); and (3) to a great extent implicit (Carter, 1990). In general, expert knowledge is more extended and better organized in memory than knowledge of a novice; in doing tasks, an expert needs less cognitive exertion; an expert is better able to retrieve relevant information from memory in order to solve a problem, to combine information needed for solving the problem, and to use this information for solving problems in other contexts (Sternberg & Horvath, 1995).

As a result of experience, teachers seem to have developed rich, well-organized knowledge bases that enable them to draw readily on their past experiences (Calderhead, 1996). On the basis of cognitions underlying novice and expert performances in the field of teaching, Berliner (1988) inferred a five-stage model of teacher development from novice to expert. According to Kagan (1992), these stages differ in: (1) the way a teacher monitors classroom events; (2) the degree of conscious effort involved in classroom performance; (3) the degree to which performance is guided by personal experience and the degree to which the teacher can predict events accurately; and (4) the teacher's focus, as student work and academic tasks become the major organizing framework of instruction.

2.2.3. *The biography of the teacher*

Carter and Doyle (1996) described the biographical outlook in the domain of teaching and learning to teach as part of a larger movement toward the personal and the local in understanding human action and social policy. In view of becoming a teacher, they stated that a biographical perspective emphasizes the transformation of identity, the adaptation of personal understandings and ideals to institutional realities, and the decision about how to express oneself in classroom activity.

Researchers who emphasize the personal dimension in teaching are particularly interested in how teachers' personal life experiences in the past interact with their professional lives (e.g., Elbaz, 1983; Clandinin, 1986; Goodson, 1992). Much, mostly narrative, research on teacher biographies and autobiographies focuses on critical incidents,

events, and relevant others which are assumed to shape their work. Examples include one's prior education (e.g., seeing a previous teacher as a relevant model, and the image of self as learner), or family life (e.g., being tolerant towards students as a reaction to being raised in a very authoritarian way). Also dramatic occurrences in one's private life often exert a great influence (Kagan, 1992; Beijaard, 1995).

'Life-cycle' research also needs to be mentioned (cf. Sprinthall, Reiman & Thies-sprinthall, 1996). Huberman (1993), for example, concluded that teachers' tolerance towards students increases when they have school age children themselves. This can be interpreted as an experience from private life that has a profound effect on a teacher's professional life. In this respect, age must also be mentioned; many teachers tend to lose their motivation and commitment as they get older. After years of serving students, teachers might lose their dedication and take their service to students less seriously (Bloom, 1988).

3. Method

Only experienced secondary school teachers ($n = 80$) participated in this research. We will first describe how the data were collected and analysed. We will then give more detail on the participating teachers.

3.1. Data collection

A questionnaire was developed consisting of four parts. The first part encompassed general questions about background variables of the teachers: sex, age, prior teacher education, subject matter taught, years of experience as a teacher, and student classes (upper and/or lower level of the secondary school). In the second part of the questionnaire, the teachers were asked to represent their professional identity by awarding a total of 100 points to the three aspects of this identity (for example, 50 points to subject matter expertise, 20 points to didactical expertise, and 30 points to pedagogical expertise). In the questionnaire, these aspects were presented to the teacher as follows:

- a subject matter expert is a teacher who bases his/her profession on subject matter knowledge and skills;
- a didactical expert is a teacher who bases his/her profession on knowledge and skills regarding the planning, execution, and evaluation of teaching and learning processes;
- a pedagogical expert is a teacher who bases his/her profession on knowledge and skills to support students' social, emotional, and moral development.

The teachers were also asked to clarify why they awarded the above-mentioned aspects of their professional identity the way they did. They then did the same for their period as a beginning teacher (awarding 100 points to the three aspects and clarifying this). Furthermore, they were asked to write down their most important learning experiences for each of the three aspects throughout their careers.

The third part of the questionnaire consisted of 18 control items (six per aspect) based on the theory described above. With these items we wanted to compare the teachers' subjective perceptions of their professional identity with their scores on more objective items that represented this identity. The teachers had to express to what extent the items were applicable to them on a four-point scale (ranging from 1: not applicable, to 4: completely applicable). The following are examples of the kinds of items used for each aspect of professional identity:

- a subject matter item: "The subject I studied determined my decision to become a teacher";
- a didactical item: "In my lessons, I pay a lot of attention to varied learning activities";
- a pedagogical item: "As a teacher, I serve as a model for the way students mix with each other".

The fourth part of the questionnaire also consisted of 18 items, six for each influencing factor described in the theoretical section (i.e., context, experience, and biography). The teachers were asked to what extent they agreed with the items on a four-point scale (ranging from 1: disagreement, to

4: complete agreement). Some examples of the items used:

- a contextual item: “Cooperation with colleagues is important for my work as a teacher”;
- an experience item: “The importance of experience is that I have developed a personal teaching style”;
- a biographical item: “My way of teaching is influenced by one or more good teachers from my own period as a student”.

3.2. Analysis

The data were analysed quantitatively and qualitatively. After an item-total reliability test, we omitted one identity item concerning subject matter expertise, and three influencing factor items (two concerning teaching experience and one on biography). This analysis resulted in scales for each aspect of teachers’ professional identity as well as the influencing factors (see Table 1). Given the number of items and the complexity of the concepts involved, we consider the reliabilities of the scales to be acceptable.

In the qualitative data we tried to find patterns in the teachers’ clarifications of their perceptions of

their professional identity and in their relevant learning experiences regarding the aspects of this identity. In the results section, these patterns will be described and illustrated by representative quotes from the teachers.

3.3. Participants

A questionnaire was sent to teachers from 12 secondary schools in the south-western part of the Netherlands. The teachers were selected with the help of school administrators. The teachers had to have a teaching experience of at least four years. Moreover, it was attempted to equally distribute the teachers over subject areas, i.e.: (1) languages, (2) science and mathematics, (3) social studies and humanities, and (4) arts.

In total, 140 questionnaires were sent out; 80 were returned, which is a response rate of 57%; 27 female and 53 male teachers participated in the research. Their ages varied: 26% were younger than 40; 44% ranged between 40 and 50; and 30% were older than 50. Most of the teachers (52%) had followed teacher training programmes at a university; most of the other teachers did their teacher training at colleges (part time or full time; 33%). The teaching experience also varied: 51% of the teachers had more than 20 yrs’ experience; a relatively small number of teachers fell in the category of 4–10 yr of teaching experience. Almost all the teachers (90%) taught upper as well as lower classes at their secondary school.

We were not able to distribute the teachers equally over the four subject matter areas mentioned above: 40% were language teachers, 33% science and mathematics teachers, 17% social studies and humanities teachers, and 10% arts teachers.

4. Results of the study

This section is structured in line with the research questions mentioned in the introduction. We describe the teachers’ perceptions of their professional identity, relevant learning experiences regarding the teachers’ subject matter, didactical, and pedagogical expertise, as well as factors that may

Table 1
Number of items (*N* items), internal consistency (Cronbach’s alpha), mean item means (*M* items), and mean item standard deviation (SD items) of the scales (all cases: *N* = 80)

Scales	<i>N</i> items	<i>C</i> alpha	<i>M</i> items	SD items
<i>Professional identity</i>				
Subject matter expert	5	0.62	3.13	0.54
Didactical expert	6	0.58	2.84	0.44
Pedagogical expert	6	0.68	3.22	0.46
<i>Influencing factors</i>				
Teaching context	6	0.76	3.12	0.60
Teaching experience	4	0.64	2.41	0.58
Biography of the teacher	5	0.59	2.47	0.56

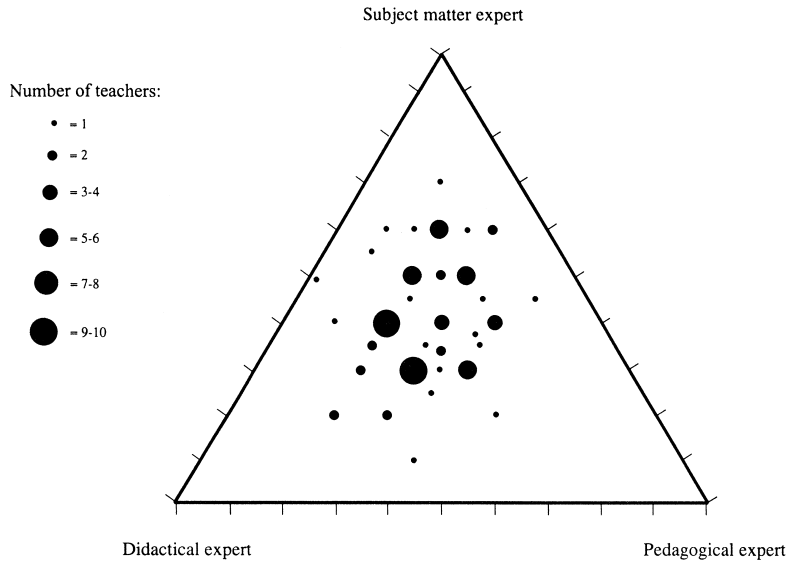


Fig. 1. Representation of the teachers' perceptions of their professional identity ($N = 80$).

influence the teachers' perceptions of their professional identity.

4.1. Teachers' perceptions of their professional identity

4.1.1. Current and prior perceptions

Fig. 1 represents the teachers' current perceptions of their professional identity based on their point assignment to the three aspects of teacher expertise. The principle of barycentric coordinates underlies the construction of the figure.² The figure clearly shows that the teachers' professional identity consists of a combination of the distinct aspects

² The circles in the figure represent how the teachers allocated their 100 points. The closer the circle in the triangle is to a corner, the more points were given to the aspect of teacher expertise that belongs to this corner. Each line of the triangle consists of 10 spots with equal intervals. By drawing lines between the spots on the different lines of the triangle it is possible to locate a teacher in the triangle: this location is where the lines intersect, depending of course on the way the teacher has awarded the 100 points to the aspects. Technically speaking, this is a procedure based on the principle of barycentric coordinates (see also Bromme, 1991).

of expertise. There is a tendency toward the left-hand side of the triangle: most of the teachers see themselves more as subject matter and didactical experts and less as pedagogical experts.

On the basis of the point assignments, it was possible to distinguish the following groups of teachers:

- three groups consisting of teachers who scored high on one aspect (a minimum score of 45 points on one aspect, and higher than the scores on either of the other two aspects), i.e., subject matter 'experts', didactical 'experts', and pedagogical 'experts';
- one balanced group consisting of teachers who gave equal scores to all three aspects (scores of $33 + 7$ or -7 points on all the aspects);
- one group of teachers who scored high and equally on two aspects (a minimum score of 40 points): either on subject matter and didactical expertise, or on subject matter and pedagogical expertise (there were no teachers who scored high and equally on both didactical and pedagogical expertise); we decided to treat both subgroups of teachers as one group, because of the small size of the latter group ($n = 2$).

Table 2

The five groups of teachers' current and prior perceptions of their professional identity ($N = 80$)

Groups of teachers	Current perception		Prior perception	
	<i>n</i>	%	<i>n</i>	%
Subject matter experts	28	35	47	59
Didactical experts	10	12	6	7
Pedagogical experts	3	4	2	3
Balanced group	24	30	12	15
High on two aspects	15	19	13	16

These five groups are presented in Table 2. In this table, the teachers' current perceptions of their professional identity are compared with their perceptions at the beginning of their careers; 31% ($n = 25$) made it clear that their current and prior perceptions had not changed, whereas 69% ($n = 55$) indicated that there had been a change in their perceptions. There appeared to be a significant difference between the teachers' current and prior perceptions of their professional identity ($\Lambda = 0.004$). This difference indicates that, in their period as beginning teachers, many secondary school teachers see themselves above all as subject matter experts. This changes, however, during most of these teachers' careers. It appears that throughout their careers most of the teachers' perceptions of their professional identity particularly shifted from being subject matter experts to the balanced group, and less to be being didactical experts. With regard to the four subject areas, there is a significant increase in the balanced group for all these areas (varying from almost 20% for the language teachers to 100% for the arts teachers).

4.1.2. Influence of background variables

When compared with the other subject areas of teachers, particularly science and mathematics teachers made a shift during their careers from being subject matter experts to being didactical experts and balanced group teachers, respectively. From the beginning, language teachers can be characterized as balanced group teachers more than those in the other subject areas. Social studies and humanities teachers more than the teachers in the

other subject areas have remained subject matter experts throughout their careers. With respect to sex, relatively more male than female teachers currently perceive themselves as subject matter experts; most female teachers see themselves as balanced group teachers. It cannot be inferred from the data that teachers with less than 10 yr of teaching experience particularly see themselves as subject matter experts. This conflicts with findings described earlier about teachers' perceptions of the beginning of their career. Perhaps these relatively new teachers have given a socially desirable response to this issue. It may also be the case that, due to changes in teacher training in the Netherlands in the last decade, new teachers perceive their professional identity at the beginning of their career in a more differentiated way than their older colleagues.³ Instead, many teachers who see themselves more as subject matter experts appear to fall in the category of 16–25 yr of experience. In addition, more teachers with a university background than teachers with a college background perceive themselves as subject matter experts; like teachers who enrolled in part-time teacher training programmes, teachers with a college background see themselves more as didactical experts and balanced group teachers.

4.1.3. Scores on the objective items

As was shown in Fig. 1, all three aspects of professional identity are more or less applicable to the teachers. In order to check their subjective perceptions of their professional identity, teachers' scores on more objective items that represent this identity were calculated. As was mentioned before, for purposes of analysis these items were treated as scales. On the basis of a one-way analysis of variance, we only found a significant difference among the five groups of teachers for the scale of

³ This is particularly true of teacher education at Dutch universities. Since 1987 teacher training has consisted of a post-graduate course of one year. Before that time, it was only possible to attend a 4-month teacher training course during the last years of a university study. This change in length might influence the way beginning teachers perceive their professional identity. Note that 52% of the teachers in this study followed teacher training programmes at universities.

Table 3
Differences in the mean scores of the groups of teachers on the professional identity scales ($N = 80$)

Scales	Subject matter experts ($N = 28$)		Didactical experts ($N = 10$)		Pedagogical experts ($N = 3$)		Balanced group ($N = 24$)		High on two aspects ($N = 15$)		<i>F</i> -value
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Subject matter expert	3.21	0.57	2.82	0.26	3.60	0.20	3.15	0.48	3.20	0.53	1.81
Didactical expert	2.82	0.46	2.90	0.50	2.83	0.00	2.93	0.46	2.69	0.36	0.72
Pedagogical expert	3.29	0.43	3.03	0.59	3.39	0.10	3.39	0.32	2.90	0.51	3.54 ^a

^aLevel of significance: $p < 0.05$.

‘pedagogical expert’ (see Table 3). This difference is particularly caused by the group of teachers who scored high on two aspects of professional identity: these teachers scored considerably lower on the above-mentioned scale than the other groups of teachers. Apart from this difference, it can be concluded that the scores of most teachers on the objective items are consistent with their subjective scores shown in Fig. 1.

4.1.4. Results from the qualitative data

From the qualitative data, we obtained more indications about differences among the five groups of teachers. Teachers who perceive themselves mostly as subject matter experts often clarified this by stating that without expertise in subject matter one cannot be a teacher: they frequently wrote that subject matter is the basis for a teacher’s authority and for being taken seriously by students. For example, two teachers wrote:

What counts is subject matter expertise, followed by didactics, which is closely interwoven with the teacher as a person. I attach great value to the pedagogical side of my profession, but this is certainly not of primary importance for teaching students.

I put my subject first, it is the finest part of my work to trot out the things that really deal with literature and philology. These imply much culture, and reflection on language capacities. I consider didactics part of this. Pedagogical aspects are implied or in a direct line with subject matter, especially literature.

Teachers who perceive themselves mainly as didactical experts frequently clarified this by referring to conditions for student learning and lesson planning as important features of their work, which can be illustrated by the following quotes:

Students must learn. It is important to teach them to learn, to carefully consider what they have to learn, and to be aware of what is going on in their minds. To realize this, one must possess didactical knowledge and skills. The pedagogical aspect is more important than I have expressed by points, but I am not yet good in it. Possibly I am going to find pedagogical affairs more important in the course of years.

Being a subject matter expert is not relevant to me. In general, the teacher knows infinitely more than the student. No, good preparation in terms of choosing adequate student activities is already half of the lesson. Actually, I should also reflect more on my pedagogical qualities: teachers can be incredibly blunt to students without realizing it. In fact, if you have no pedagogical talents you should not become a teacher.

The three teachers who perceive themselves first of all as pedagogical experts also clarified this by referring to the conditions of student learning, including what and how students learn. They also wrote about the importance of preparing interesting lessons. In fact, these teachers do not differ much in their opinions from the teachers who predominantly perceive themselves as didactical experts.

More teachers from the balanced group than from the other groups clarified their perception of their professional identity by referring to the importance of being sensitive to problems, the atmosphere in the classroom, reactions of students, and students' feelings of well-being. For example, a teacher wrote:

As a teacher you must have control over subject matter. This is important, but in secondary schools much of what you know is far off what students should know. It is very important to me that there is a good atmosphere in the classroom, and for that you need all the didactical and pedagogical skills you can get.

The teachers who scored high on two aspects clarified their perceptions of their professional identity as follows. Some teachers who scored high on both subject matter and didactical expertise stated that they do not possess pedagogical skills, or that schools are not meant for social and emotional matters. Most teachers who scored high on both subject matter and pedagogical expertise tended to clarify this by referring to the transmission of knowledge as the core of their work; they did not refer to pedagogical aspects, although they scored themselves high in this category.

In addition to the quantitative analysis of the data, it can be concluded that – when examining the teachers' clarifications of their perceptions of their professional identity – some differences seem to exist among the five groups. These differences particularly apply to the teachers who scored high on only one aspect of expertise and to teachers who scored equally high on all three aspects (the balanced group).

4.2. *Relevant learning experiences*

For each aspect of professional identity, the teachers were asked to describe their most important learning experiences during their careers. Table 4 contains an overview of the experiences of 75 teachers (five teachers did not report their learning experiences). Some of the teachers reported more than one experience per aspect of professional identity. The experiences listed in the table are thickly described by the researchers. For each

aspect of professional identity, all the teachers' experiences are ranked according to their frequency (left-hand side of the table); a ranking of 1 means the highest frequency, etc. The frequency of the experiences that are listed in the table ranged from 23 (the subject matter experience: necessity of keeping pace with new developments) to 2 (the pedagogical experience: students' situation/well-being is starting point for the lessons). Experiences that were only mentioned once were excluded. In total, 64% of subject matter experiences, 51% of didactical experiences, and 59% of pedagogical experiences are represented in the table.

Table 4 also shows the rankings and frequencies of the learning experiences for each group of teachers separately. These figures should be considered carefully because of the great differences in size between some groups (see also Table 2). The overview of learning experiences indicates some similarities and differences among the most important learning experiences of the groups of teachers. There are, except for the pedagogical 'experts', more similarities in the fields of subject matter and pedagogical expertise than in the field of didactical expertise. In the latter field, the didactical experts in particular reported other and, proportionally speaking, more learning experiences.

In the subject matter field of professional identity the teachers of all the groups learned that it is important to keep pace with new developments. For example, a 'subject matter teacher' and a 'balanced group teacher' successively wrote about this as follows:

Learning never stops. Your subject keeps moving, subject matter knowledge must always be functional and up-to-date. During your study you do not learn enough about your subject in order to teach well.

Following new developments and referring to these in your lessons really stimulates my students.

With regard to the importance of subject matter for teaching, as expressed by the experiences ranked in Table 4 in the subject matter field as 2 and 3, the groups differ in their learning experiences. For example, one 'balanced group teacher' wrote:

Table 4

The rankings, including frequencies in brackets, of the most important learning experiences of 75 teachers for each aspect of professional identity and for each group of teachers

Rank	Learning experiences	Subject matter experts	Didactical experts	Pedagogical experts	Balanced group	High on two aspects
<i>Subject matter field</i>						
1 (23)	Necessity of keeping pace with new developments	1 (8)	1 (4)	—	1 (7)	1 (4)
2 (12)	Relevance to students of having a knowledgeable teacher	2 (7)	—	—	3 (3)	3 (2)
3 (8)	Teachers cannot permit themselves to make mistakes	3 (3)	—	—	4 (2)	2 (3)
4 (7)	Subject matter is not the only basis for a teacher	—	2 (3)	—	2 (4)	—
<i>Didactical field</i>						
1 (12)	Importance of taking into account the students' level	1 (8)	—	—	3 (2)	2 (2)
2 (8)	There are many ways to teach and learn the same thing	2 (4)	1 (4)	—	—	—
3 (7)	Importance of students' ways and strategies of learning	—	2 (3)	—	—	1 (4)
4 (6)	Planning and organization are the basis for teaching	3 (2)	3 (2)	1 (2)	—	—
5 (4)	To motivate and interest students by changing learning activities	—	—	—	1 (4)	—
6 (3)	Necessity of being alert by listening and observation	—	—	—	2 (3)	—
<i>Pedagogical field</i>						
1 (20)	Ways of approaching students (positive, open, with respect, etc.)	1 (7)	1 (4)	—	2 (6)	1 (3)
2 (16)	Good/safe classroom climate as a necessary condition for teaching	2 (4)	2 (2)	—	1 (8)	2 (2)
3 (7)	Being alert for signs of students/ showing involvement	3 (2)	—	—	3 (5)	—
4 (2)	Students' situation/well-being is starting point for the lessons	—	—	1 (2)	—	—

I learned that the content of my subject is very relevant, but more important is that students become interested in it, that they themselves are motivated to search for questions and answers.

In the didactical field of professional identity the didactical teachers in particular reported experiences regarding student learning. Two of these teachers wrote:

I learn from every lesson. Through my interaction with the students, I constantly improve my-

self. Students always ask questions, so that they force me to think about how to explain to them the same subject matter in different ways.

I must not give the answers. Instead, I always ask the students for the ways in which they come to the answers. It is important that I pay much attention to their ways of learning and working.

In the pedagogical field of professional identity many teachers have learned that it is important to approach students in certain ways. The following

quotes of a ‘subject matter teacher’ and a ‘didactical teacher’ are illustrative of this view:

Personal interest in students and to demonstrate that you have insight into a student’s situation can be very motivating; it is relevant to search for a positive approach to each student as much as possible, however difficult that sometimes is.

When I approach the children in a fair and open manner, they can be very pleasant and reasonable.

4.3. Influencing factors

In this study it was assumed that teachers’ teaching context, experience, and biography are categories of factors that may influence their perceptions of their professional identity. As was mentioned before, these categories were operationalized in the form of items and for purposes of analysis treated as scales. Based on a one-way analysis of variance we attempted to find differences among the scores of the five groups of teachers on these scales. However, it appeared that the mean scores of the groups on the three influencing factor scales do not differ significantly (see Table 5).

It is not possible to draw conclusions from these findings. To most of the teachers all three types of influencing factors play an almost equal role when related to their perceptions of their professional identity. After a closer look at the separate items, it is worth mentioning that subject matter experts agreed more frequently than the other groups of teachers with the biographical item: “The way

I teach has been influenced by one or more good teachers I had as a student.” These same teachers disagreed more frequently than the others with the biographical item: “Norms and values which I live up to are in keeping with the norms and values which I find important for my students.” The balanced group teachers agreed most with this item.

5. Conclusion

Most of the teachers in this study saw themselves as a combination of subject matter experts, didactical experts and pedagogical experts. Both subject matter expertise and didactical expertise appeared to be most and equally present in the teachers’ perceptions; this was not particularly the case for pedagogical expertise. Although 31% of the teachers said that their current perceptions of their professional identity did not differ from their prior perceptions of this identity, we found a significant difference between how the teachers currently see themselves and their self-image as beginning teachers. In their perceptions of their professional identity, many teachers shifted specifically from subject matter expertise to didactical and pedagogical expertise during their careers. In this respect, teachers in different subject areas did not undergo the same development. In general, most teachers’ subjective perceptions of their professional identity were in line with their scores on the more objective items that represented this identity. It can be concluded that, given our operationalization of professional identity, the teachers were very able to express how they currently see themselves professionally. It is not possible to draw a similar

Table 5
Differences in the mean scores of the groups of teachers on the influencing factor scales ($N = 80$)

Scales	Subject matter experts ($N = 28$)		Didactical experts ($N = 10$)		Pedagogical experts ($N = 3$)		Balanced group ($N = 24$)		High on two aspects ($N = 15$)		F-value
	M	SD	M	SD	M	SD	M	SD	M	SD	
Teaching context	3.08	0.61	3.25	0.57	3.22	0.38	3.19	0.52	3.14	0.63	0.22
Teaching experience	2.51	0.52	2.63	0.89	2.50	0.43	2.27	0.64	2.27	0.30	1.10
Biography of the teacher	2.46	0.48	2.56	0.65	2.87	0.70	2.48	0.52	2.43	0.63	0.46

conclusion for the retrospective data (prior perceptions and learning experiences). Like many other methods, using a questionnaire for the collection of this kind of data has its limitations. In general, asking people to retrieve information from their long-term memory always leads to selective information, influenced over time by new experiences, events, and other people (cf. Ross & Conway, 1986).

On the basis of their current perceptions of their professional identity, five groups of teachers were distinguished. As such, the theoretical distinction between the three aspects of professional identity and the points system together seems to be an adequate procedure for investigating teachers' perceptions of their professional identity. After a qualitative analysis of their clarifications of their perceptions it was possible to gain insight into some differences underlying these groups of teachers. To some extent, but particularly in the field of didactical expertise, the groups also differed in relevant learning experiences throughout their careers. It remains unclear to what extent learning experiences regarding subject matter, didactical, and pedagogical aspects influenced the teachers' perceptions of their professional identity. How such experiences influence teachers' professional identity formation might be an important issue for future research. This may contribute considerably to our understanding of teachers' professional images of themselves.

The differences among the groups of teachers' current perceptions of their professional identity were not related to contextual, experiential, and biographical factors that might influence these perceptions. All the factors were almost equally (dis)agreed upon by all the teachers. It would appear that in future research, other methods will need to be explored to establish clear relationships between these factors and the teachers' different perceptions of their professional identity. From the literature described in the theoretical section it has become clear that these factors are very important to them.

It is important to do research on how teachers perceive themselves, i.e., their professional identity. Their perceptions, plus the influencing factors mentioned above as well as predispositions, strongly

influence their judgments and behaviour (see also Nias, 1989; Tickle, 1999). Our study presented some relevant insights into similarities and differences among teachers' perceptions of their professional identity, including changes in identity and relevant learning experiences throughout their careers. These insights are not only useful for understanding their self-image and helping them to reflect on themselves as teachers, they are also useful for student teachers as part of their orientation on becoming a teacher. Our findings may also be of use for introducing innovations in schools. In general, aspects of subject matter and didactics appeared – in combination – to be highly relevant to the experienced teachers in secondary schools. It might therefore be argued that innovations in (secondary) schools that insufficiently do justice to both subject matter and didactics may fail. Such innovations are not congruent with the teachers' perceptions. This also applies to innovations that focus on pedagogical aspects only.

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