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# Teachers' personal epistemologies and professional development

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## ABSTRACT

This article deals with the personal epistemologies developed by teachers who undergo academic continuing education on an advanced level at a time when conflicting discourses form the basis of teaching in today's school, i.e. academisation on one hand and measurability and accountability in the name of New Public Management on the other. To give the interviewed teachers in this study an opportunity to clarify and become more aware of their epistemologies and to assist in getting started, we initially presented concepts developed in an academic discourse: Hofer's account of different, interrelated dimensions of 'personal epistemologies', clustered in two areas: the *nature of knowledge*, and the *nature or process of knowing*. As a result, we interpret the students' epistemological beliefs through a professional perspective, i.e. as justification of the profession's academisation. In their unhesitating confident trust in practitioners' knowledge, as mainly acquired from experience in the field, they express a vocational habitus. One may thus assume that practitioners possess proven experiences, i.e. experience-based knowledge that they have acquired and that should be recognised and added to the knowledge base of the field in an academic and vertical discourse.

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Personal epistemologies; everyday professional and academic discourse; vertical and horizontal discourse; schoolteacher; Sweden

## Introduction

Under the influence of new public management (NPM), general evidence-based and measurable knowledge has been attributed with great value in policy around the world, leading to increased supervision and control (Hudson 2007; Bergh 2015; Sahlberg 2016). The teacher's freedom has been restricted and their pedagogical professional skills have been subordinated to technical and economic approaches (Brante 2014; Hansson 2014). Bergh (2015) contends that accountability in systematic quality work has transformed the view of knowledge. During the 1990s, the epistemology in education policy shifted from something socially, historically and culturally designed to something quantifiable and assessable. In line with Hofer (2000), we define the dimensions of personal epistemology as the nature of knowledge (what one believes knowledge is) and the nature or process of knowledge (how ones come to know).

At the same time, the academisation of teachers is an international trend in educational policy and found in Scandinavian and European countries (Caena 2014; Cain 2015; General Teaching Council for Scotland, 2012; Lunenberg, Ponte, and Van den Ven 2007; Sahlberg 2016; Skagen 2006). For example, provisions of the Swedish Education Act of 2010 (SFS 2010: 800) placed substantially higher academic demands on teachers in Swedish schools. In authoritative terms, the policy asserted that education on all levels should 'rest on scientific grounds and proven experience' (5§).

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In the role of policy implementer, by mixing the two discourses the National Agency for Education in Sweden asserted the view that 'scientific grounds and proven experience' are comparable to evidence-based teaching and that teachers' experience-based knowledge, as a value, should be verified by several teachers (Swedish National Agency for Education, 2013). The Agency's interpretation of 'scientific ground and proven experience' (SFS 2010:800) has reduced the complexities and facilitated a top-down regulation of teachers' epistemological agency and professional judgment (Larsson and Sjöberg 2021).

Schoolteachers in Sweden are thus challenged to adapt their professional thinking and practice to these contradictory movements. They often face conflicting discourses related on one hand to the academisation of teaching and, on the other, to measurability and accountability. As this paper demonstrates, ongoing professional development and learning is essential to enable educators to develop their understanding and knowledge for this changing context. The findings of our exploratory study reveal the differing knowledge – or personal epistemology – with which teachers approach their teaching, and how participation in a master program permits them to expand their personal epistemology.

### Teacher's work and teachers' knowledge

The overriding responsibility of any teacher is to teach and create conditions for learning. In contrast with the coherent, explicit and systematically principled structured 'vertical discourse' in a scientific setting at universities, teachers develop their experience-based knowledge-building in a context-dependent and specific, and multi-layered 'horizontal discourse' (Bernstein 1999). Even though teachers in Sweden are academically educated, teachers in school do not, and are not expected to, explicitly relate to epistemological issues (Englund 2005; Gustavsson 2000). In national policy texts teachers are rather constructed as uncritical enactors of epistemic theories and methodologies devised elsewhere, i.e. as consumers of science and deliverers of educational services (Larsson and Sjöberg 2021).

On the one hand teachers of various school subjects represent different view of knowledge, which in turn arise from different scientific fields and academic disciplines (cf. Becher 1994). The extent to which teachers in secondary schools believe the subject they teach is a well-defined body of knowledge and skills varies between teachers of different subjects. Beliefs about subject matter formed during higher education are critically important for prospective teachers, Stodolsky and Grossman (1995) claim. For example, English teachers more strongly view the knowledge in their field as changing, while maths teachers tend to see their subject as less dynamic.

Teachers' knowledge is also about planning, implementing and following up teaching with a focus on creating the conditions to help students develop their knowledge as well as assessing the students' knowledge (Lundahl, L. 2005). Assessment knowledge is an obvious part of subject knowledge and constitutes a separate field of practice-bound knowledge.

On the other hand, teachers' personal epistemologies are challenged by reforms and systems of governance (Erixon Arreman and Holm 2011; Lindblad 2002; L. Lundahl 2005). For example, a growing body of research raises questions about NPM, defined as a doctrine of governance of the public service sector, based on control of the outcome and emphasis on measurable knowledge and evidence-based research as all-purpose keys to improving it's quality (Sahlberg 2016). NPM has been criticised for both causing the teaching profession's de-professionalisation and a knowledge deficit (Biesta 2010; Goodson and Lindblad 2011; Seltzer and Bentley 1999), while also limiting teachers' professional autonomy (Stenlås 2011). According to Brante (2014), this involves cognitive control in the form of utilisation and mechanisation of the profession's knowledge base (cf. Noordegraaf 2011; Saks 2012). These discursive shifts on the policy level and the ways in which the school have been governed have also affected the teacher's epistemology.

## Theoretical perspectives

From a socio-cultural perspective, we regard knowledge as being constituted in the flow of meaning produced between knowledgeable people while they communicate together in a 'community of practice' (Wenger 1998; Wertsch, Del Rion, and Alvarez 1995) or a discourse community (Swales 1990). The theoretical perspectives we further draw upon are *everyday, professional and academic discourse* (Northedge 2003), vertical and horizontal discourse (Bernstein 1999), *epistemological beliefs* (Hofer 2000) and 'vocational habitus' (Colley et al. 2003).

We study how teachers' personal epistemologies and process of forming concepts can be developed through a master's program, i.e. their view on the nature of knowledge and nature of the process of knowing (Hofer 2000, 380). In the interaction between school and university, there is an exchange of ideas and a dialogue about epistemology that may encourage teachers to develop their personal epistemology. The master's program aims to ensure that as part of their work teachers can actively relate to and put into words how they view science, research and knowledge in shared procedures with peers, tutors and us researchers. The challenge for them is to articulate their epistemological positions on the nature of knowledge in an academic discourse (Hofer 2000).

Northedge (2003) distinguishes between *everyday, professional and academic discourse*. Academic continuing education courses deal with issues that many students are already frequently involved in, using different terms at work and outside of work in an everyday world and 'everyday discourse' to discuss them. *Everyday discourse* whether at the public level in the mass-media, or locally in home and community, functions 'tribally' and works by constructing group loyalties, assuming common perceptions, and less so through analytical reasoning or considering alternative viewpoints. Meanwhile, they are participating in a professional community whose discourse is pragmatic, controlled and defensive (Northedge 2003). A *professional discourse* places emphasis on ethics and social solidarity, but also express the values and policies the institution espouses. Any debate is expected to take place with the proper authorities in charge. As students, they enter a third discursive universe where they are expected to set both public and professional rhetoric aside, and to some extent stand apart from their own actions as teachers. In *academic discourse*, nothing is to be taken for granted; participants address themselves within measured, reflective written exchanges and a speaker's arguments are separated from their social position, personal loyalties and immediate crises, with an overarching aspiration for theory-building and research.

Bernstein (1999) differentiates two fundamental forms of complementary *discourses: horizontal or everyday and vertical or scientific*. Horizontal discourse is typified as every-day or 'common-sense' knowledge and includes both what Northedge (2003) calls everyday and professional discourse. Well-known features include that it is likely to be oral, local, context-dependent and specific, and multi-layered. A vertical discourse takes the form of a coherent, explicit and systematically principled structure, hierarchically organised, like in the sciences, or takes the form of a series of specialised languages with specialised modes of interrogation and special criteria for the production and circulation of texts, like in the social sciences and humanities.

According to Hofer (2000), personal epistemological theories are made up of somewhat discrete, and interrelated, dimensions. The dimensions of personal epistemology cluster into two areas: the *nature of knowledge* (what one believes knowledge is) and the *nature or process of knowing* (how one comes to know). Within these, there are two dimensions each. Under the nature of knowledge, there are the dimensions *certainty of knowledge* and *simplicity of knowledge*, and within the area of the nature of knowing two more dimensions, *source of knowledge* and *justification of knowledge* (Hofer 2000, 380). *Certainty of Knowledge* concerns the degree to which one sees knowledge as fixed or more fluid. On lower levels, absolute truth exists with certainty. On higher levels, knowledge is tentative and evolving. *Simplicity of knowledge* is viewed on the lower level as discrete, concrete, knowable facts; on higher levels, individuals see knowledge as relative, contingent and contextual. As concerns *Source of knowledge* on the lower level, it originates outside the self and resides in external authority; in the higher stages, the knower has moved from spectator to an active

constructor of meaning. *Justification for Knowing* involves the dimension of how individuals evaluate knowledge claims, including the use of evidence. Individuals on lower levels justify their beliefs through observation or authority. In higher stages, individuals use rules of inquiry and begin to personally evaluate and integrate the views of experts.

Further, we use 'vocational habitus' as a theoretical concept to decipher the impact of learning cultures in vocational education on student attitudes and ways of thinking, including the reproduction of feelings and morals in line with the workplace (Colley et al. 2003).

## Aims and research questions

The specific aim of our study was to investigate which theories and beliefs about knowledge are developed by teachers who have completed 2 years of part-time study in a research and development master's program. The focus is on 'knowing' and how teachers develop, based on their own practice, beliefs and expectations, different ways to comprise issues of epistemology when offered Hofer's (2000) dimensions of 'personal epistemologies', that cluster into two areas: the *nature of knowledge*, and the *nature or process of knowing* (p 380). Our aim is broken down into two research questions:

- (1) How do the teachers view the nature of knowledge in terms of the issues of the certainty and simplicity of knowledge?
- (2) How do the teachers view the nature of knowing in terms of the issues of the source and justification of knowledge?

## Method

For this study we adopted a qualitative method to explore which personal epistemologies teachers possess and develop when they are taking advanced-level academic courses concentrated on research-based development work in school. The study was conducted in a Swedish municipality that had adopted a local strategy aimed at meeting the scientific requirements for teaching at school, namely, that it be based on scientific grounds and proven experience. The participants were eight schoolteachers who had completed a four-year master level continuing education program, parttime.

The master's program was thus jointly developed by representatives of school and university. Teachers and researchers from the university represented the discipline of pedagogical work, which is a practice-oriented discipline connected to teacher education (Rönqvist and Vinterek 2008) and hence belongs to the fourth cluster of 'soft' applied sciences (Becher 1994). The program addressed issues of experience-based knowledge, the production and nature of producing such knowledge, the practice-based research tradition, integrating methods for R&D into school practice etc.

The purpose of the master's program was to enable teachers who have completed it to integrate their studies into their teaching, undertake practical analyses of practical work, participate in joint research projects and/or serve as support for the school leader and colleagues in efforts to integrate research and development into their schools. As part of their studies, they were expected to reflect upon theories and methods in the field of educational science as well as issues of research and knowledge.

Altogether, eight semi-structured digitally recorded interviews, lasting between 40 and 60 minutes, were conducted on the local school administration's premises. All participants (Table 1) commenced their master's in August 2016 and undertook their interview 2 years later in October 2018. The interviews started with a reminder of the requirements found in the Swedish Education Act (SFS 2010: 800) and what they mean for them as teachers. This initial subject was followed up by questions connected to issues of epistemology based on Hofer's concepts (2000), we asked questions about the science-knowledge relationship, important or secure knowledge in their daily practice, the nature of

**Table 1.** Interviewed teachers.

Teachers interviewed (pseudonym)	Gender	Position	School subject/ pedagogical assignment
1. Eva	F	Special pedagogue	To promote and support pedagogical development and students' learning
2. Tyra	F	Teacher, years 7–9,	Natural science, maths and sloyd (a Swedish school subject)
3. Sigbritt	F	Pre-school teacher	To lead the work of developing teaching with a focus on children's development and learning
4. Nina	F	Teacher years 7–9	Social science and Swedish
5. Tina	F	Pre-school teacher	To lead and develop teaching, focus on children's development and learning
6. Emelie	F	High school teacher	Religion and Swedish
7. Tove	F	Teacher years 7–9,	Social science and Swedish
8. Fredrik	M	High school teacher	Music

knowledge (constant or changing), if and when they had started to think differently about the nature of knowledge etc. In the interview, we tried not to use the word 'epistemology' too often. All phases of the research process comply with the Swedish Research Council (2017) ethical guidelines for social research (oral and written information, voluntary participation, right to withdraw at any time, and anonymity). Both authors contributed equally to the study design, data collection, and analyses.

Data were analysed based on a mix of different qualitative content analysis methods: content condensation and narrative analysis (Bergström and Boréus 2005; Kohler Riessman 2008). First, the transcripts were read using an inductive approach in order to reach an overall understanding of the content. Second, the meaning units were identified, read, condensed and coded with keywords based on the content; similarities and/or differences between the teachers' narratives. Third, the content was edited, condensed and thematised.

## Results

In response to our *first research question*, concerning how teachers view the nature of knowledge in terms of the issues of certainty and simplicity of knowledge, we find it is not an issue the teachers reflect on very much, while for them it is mainly connected to 'science', i.e. an academic discourse. No teacher expresses a view of knowledge where it is regarded as something 'concrete' or simple 'facts'. Instead, their unanimous view is that it is contextual, fluid and 'constantly changing'. They express critical perspectives on the issue of knowledge and have great confidence in their own competence and view of knowledge, regarded as equally important, practice-bound and built on their experiences as teachers.

In response to our *second research question*, concerning how teachers view the nature of knowing in terms of the issues of source and justification of knowledge, they stress that knowledge is mediated through language and linked to perspectives. To some extent, they attribute knowledge to researchers, an 'authority', that they trust. But, in order to be relevant, research must be close to their own 'observations' and proven experience. They also tend to emphasise their own proven experiences, experience-based knowledge, that distance themselves from external knowledge that is not in line with their own opinion and proven experiences.

### *The nature of knowledge – certainty of knowledge*

The nature of knowledge with a focus on 'certainty of knowledge' is about the degree to which one sees knowledge as fixed or more fluid. Hofer (2000) comprehends this as a continuum that changes over time, moving from a fixed to a more adaptable view. On lower levels, absolute truth exists with

certainty; on higher levels, knowledge is tentative and evolving. While asking Emelie, she claims that it is an issue that she has not reflected upon that much:

I have never really decided what I think; I have never reflected so much on the issue. (Emelie)

Likewise, Tove declares that questions about epistemologies are hardly questions one has time or reason to discuss with one's colleagues at school. Knowledge issues are about 'more down to earth things' in a school context:

Rather, there are knowledge requirements connected to subject matter. Never so big like 'what is knowledge?' (Tove)

As teachers in school, and members of a professional community of practice, concepts like epistemology are alien and intimately connected to academic rather than professional discourse (Northedge 2003). In their professional discourse, issues of epistemology relate to teaching and content issues in school subjects.

Still, none of the eight students imagines that knowledge is fixed and absolute. Instead, 'changeable over time' is an expression most of them use (Sigbritt, Nina, Tina, Emelie, Eva) while tentatively addressing the issue. Nina:

I think it is changeable; there is no knowledge that is constant. History changes all the time because knowledge about history changes/ ... /from a personal point of view, your knowledge also changes from things you are involved in and experiences you get. And then society changes all the time. So, if knowledge would have been constant, then you are probably quickly removed from the world of school at least. (Nina)

Historical, social and personal points of departure change our view on knowledge. In that respect, the teachers seem to see a parallel between, on one hand, how they themselves as teachers acquire new experiences and thus knowledge and, on the other, how science develops based on of new findings and methods. They thus connect the knowledge issue to both the teaching content in school as well as their knowledge and experiences from teaching.

The issue of the nature of knowledge is for Fredrik also naturally linked to the activities of the school as a teacher:

On one hand, knowledge is something the student already has and knowledge that the school has, and it must correspond. And it is only when it corresponds that it becomes real knowledge for the student. So, we have to see the individual in our teaching situation. (Fredrik)

In order to become knowledge, from a socio-cultural perspective, and in order for the students to appropriate knowledge, Fredrik claims there must be a correspondence between the students and the knowledge that is taught. Knowledge is seen as constituted in the flow of meaning produced among knowledgeable people when they communicate together in a 'community of practice' (Wenger 1998; Wertsch, Del Rion, and Alvarez 1995).

Tina distinguishes 'knowledge' from 'science':

The difference between 'knowledge' and 'science' is that 'knowledge' is mine; but it is closer to me than I would say than the term "science" is. But there is definitely nothing that is fixed like that, but it is changeable, I think. (Tina)

In a horizontal discourse (Bernstein 1999) Tina expresses her professional perspective on the issue of knowledge, and connects the concept of epistemology to scientific activities, something she indirectly here marks a distance from. This may conceivably illustrate her sense of being outside the academic discourse. Therefore, she does not really address the question of the nature of knowledge. Her position is close to Toves' position noted above, i.e. that the question of the nature of knowledge is linked to the knowledge on which school teaching is based, and that the question is about how school can be developed on a scientific basis.

Eva implies that there is also a type of knowledge she calls 'foundation' (knowledge) to lean against:

But, on the other hand, I think that there are things that I lean back on as a basis, but how I look at things around, that's changing. (Eva)

In Eva's reasoning about 'foundation', she seems to, without using the terms, refer to something that is close to the nature, origin, and limits of how we obtain human knowledge, i.e. epistemology. Her view is stable in this respect. What changes is located on another level.

The issue of the 'nature of knowledge' and its 'certainty' is not an issue that teachers reflect on very much within the frames of the school. This is in harmony with both Englund (2005) and Gustavsson (2000) who claim the concept of knowledge has rarely been reflected upon by teachers. In a professional discourse teachers develop their experience-based knowledge building in a context-dependent, specific, and multi-layered 'horizontal discourse' (Bernstein 1999). It is conveyed in the school's teaching in the various school subjects, and especially considering the requirements of the Swedish Education Act it should have a scientific basis. Moreover, their view on knowledge is tentative and evolving; it is not fixed but fluid, growing, and adopting to new perspectives. At the same time as some of them claim there is a 'foundation', something to lean back on – a basic view on how to obtain knowledge when things around are changing. Overall, they express critical perspectives on the issue of knowledge and use Hofer's concepts as a kind of supportive structure in their thinking. The students also seem to have great confidence in their own competence and view of knowledge; they evaluate their own knowledge, which is not the same, but regarded as equally important, practice-bound and built on their experiences as teachers.

### *The nature of knowledge – simplicity of knowledge*

The nature of knowledge and with a focus on the 'simplicity of knowledge' is about whether knowledge is regarded as something concrete, facts or as relative and contextual. Similarly, within other schemes, the lower-level view of knowledge is seen as discrete, concrete, knowable facts; on higher levels individuals see knowledge as relative, contingent and contextual (Hofer 2000, 381). Like before, questions about the origin of knowledge also raise questions about science. The concepts are intimately connected with each other. Tina is straight to the point:

I say it is definitely not simple and it is not fixed, and it is definitely fluid, and I would also say that it is dependent on context. Because it is difficult to pick out knowledge without having a connection to it. Because then you do not understand it. And sometimes I think that it makes science a little difficult and you try to lift it out a little. But you have to have a context and an understanding around it, in order for you to understand what it is about. (Tina)

Tina perceives scientific knowledge as abstract and decontextualised, which she believes makes it difficult for a teacher to understand scientific knowledge. From a socio-cultural perspective, Tina seems to suggest that academic researchers who conduct school research lack professional experience and thus their findings overlook teachers' professional contexts. She also highlights proven experience as an important form of knowledge. You need to understand the context, for example the school, in order to understand the issues, you are investigating.

Some of the master students define themselves vis-à-vis natural science disciplines that, according to Paulsen & Wells (1998), are characterised by disciplinary consensus, i.e. when students are more likely to believe in absolute knowledge than their Social Science and Arts counterparts, and North (2005) who claims that Natural Science students stress the need to understand facts and figures and to describe experiments. Sigbritt is married to a natural scientist, and she compares his knowledge views with her own:

If I were to think that is was either true or false I would think more like a natural scientist; that it is measurable and that it goes like putting your finger on it, it is black or white. (Sigbritt)

Based on her own view of science, Sigbritt notes that she belongs to a 'tribe' other than the natural sciences (Becher 1994). In so doing, she seems to identify herself with an academic discourse



(Northedge 2003). Tina also refers to her teaching experiences in a horizontal discourse (Bernstein 1999) while she is talking about the nature of knowledge. In this context, like Sigbritt she criticises methods that should be repeatable if they are to be considered as science.

I don't believe that they do in the natural sciences – that nothing changes, and you can do things over and over again. And especially not within my area because I see just that if I do an exercise with my children one day, then I have these other three children and the next day I have another three children. So, there can be completely different things, though I do about the same thing. It has to do with how it is received by my children. In the same way, I look at knowledge. Who I discuss it with, where it comes from and what context it is in? (Tina)

Natural Sciences methods do not fit with Tina's field, she claims. Instead, she highlights that the groups and contexts are so different and that different types of knowledge develop in varying contexts or discourses. This is another way of talking about professional and academic discourse, respectively.

While for Sigbritt the issue of knowledge is not a matter of true or false, Eva believes there is a form of knowledge that is measurable:

Yes, but factual knowledge can be measured. How many members are there in the Swedish Parliament? Yes, that's just a true answer. But then there is other knowledge that is not measurable. (Eva)

Regarding the issue of the 'simplicity of knowledge', we find that none of the teachers view knowledge as something 'concrete' as simple 'facts'. Rather, their unanimous view is that it is contextual, fluid and 'constantly changing', in contrast to the epistemologies, according to them, held by natural scientists. In this way, they continue to lean towards Hofer's concept, finding that their own notions are relevant for the issue of epistemology.

### *The nature of knowing – source of knowledge*

The nature of knowing and more specifically the source of knowledge concerns whether knowledge exists outside ourselves, as expert knowledge, or if we ourselves can construct knowledge. On the lower levels of most models, knowledge originates outside the self and resides in an external authority from which it may be transmitted. The evolving conception of self as knower, with the ability to construct knowledge in interaction with others, is a developmental turning point of most models reviewed.

In her response, Nina connects to professional discourse and the teacher's job; to be a cog in a system, and that knowledge as politically sanctioned does not always align with her own view of relevant knowledge:

Yes, it is difficult, yes, I think it is both and I think – but then I am politically controlled, it will be beyond myself that knowledge. They have decided what knowledge we need as teachers; I think. That knowledge develops outside the self, I think. But then there is a part of the self also because I have somewhere, what should I say, cultural history what I think is important knowledge. (Nina)

Nina is aware of that a teacher's work is politically steered and controlled, and she has her own view on that. Nina distances herself from external knowledge from the 'outside' and appears to take a critical perspective on the directives, influenced by neoliberal notions embedded in their professional discourse from the National Agency for Education. In that sense, she has not fully taken over and incorporated concepts and governing logics from the economic and bureaucratic discourses that have invaded her professional discourse (Brante 2014). She has her own view of knowledge, partly in contrast to the view of knowledge conveyed by the National Agency for Education. Yet, as a teacher in a professional discourse, she must absorb, accept and obey (Northedge 2003). She stands up to this but does not openly criticise it.

Sigbritt seems to have reached a developmental turning point when she claims she is a knower, with the ability to construct knowledge in interaction with others:

That it originates from within me, more than it comes from outside, I think. And that it only becomes knowledge when I test it with others and I reflect / ... / I think that I contribute with knowledge. Thus, to reflect highly and together with colleagues as well as in other contexts – that's how you create knowledge! (Sigbritt)

Together with colleagues Sigbritt reflects upon and produces, or as she herself stated 'contribute with knowledge'. This insight appears to have arisen when encountering academic discourse in Hofer's (2000) concepts. Tyra adds another aspect of knowledge while emphasising that we are in a mediated relationship with reality, which always includes perspective and interpretation

But somewhere the knowledge formation is outside of me and the knowledge storage in me. You are probably part of everyone's knowledge building. (Tyra)

Tyra here reflects on the fact that we have an indirect relationship with reality and that, for us to reach the world, it must be mediated. In addition, Fredrik admits that knowledge depends on perspective and mediation:

It has to be processed. I think it will be new knowledge only when I mix what is outside and what is inside. When mixed, it becomes new knowledge. Because then I can also add myself to the outside world. (Fredrik)

Likewise, Fredrik claims that one cannot talk about knowledge until it has been 'processed' or as we interpret it, appropriated; it must become part of oneself. Tina holds the same opinion:

I would say that it lives inside me, at least my knowledge. But it affects everyone around me and all the impressions I get. But I think in order for it to be mine, I have to make it mine. So, I have to have an opinion and I have to think about what it (knowledge) means to me. (Tina)

In various ways, it emerges that not only does knowledge include perspective but also critical reflection. Emelie has the same view on the issue:

But for it to become my knowledge, I feel that I must somehow internalise it, in order for it to become part of me. Not only can I be a container that receives knowledge from the outside, but it must be mixed with what I already have. And that is what happens when I try to critically consider or reflect on what I do from the outside and make it mine. And that is what makes it constantly changing. (Emelie)

Emelie also stresses that knowledge must be appropriated or, as she herself says, internalised in order to be counted as knowledge. Here, Emelie speaks based on a critically reflective academic discourse:

Sometimes knowledge grows as I reflect on my own actions, and then something comes from within. But sometimes I have to seek knowledge from outside.

Regarding the issue of 'source of knowledge', the students unanimously believe there is knowledge that resides and originates outside us, but also that they are knowers with the ability to construct knowledge, based on their proven experiences as teachers. They reflect on the source of knowledge with the help of Hofer's (2000) concepts and in line with Bernstein's (1999) vertical discourse. In doing so, they also transcend the professional discourse. We find that in this respect the students oscillate as teachers between a professional and as students an academic discourse (Bergmark and Erixon 2020).

### *The nature of knowing – justification of knowledge*

The dimension of personal epistemology involving the nature of knowing and justification of knowledge includes how individuals evaluate knowledge claims, such as the use of evidence; the use they make of authority and expertise; and their evaluation of experts. Individuals on lower levels justify beliefs through observation or authority, or based on 'what feels right', when knowledge is uncertain. Only at higher stages do individuals use rules of inquiry and begin to personally evaluate and integrate the views of experts (Hofer 2000, 381)

Building on the above, we find that the teachers value and critically examine knowledge formulated by various experts, such as researchers and the National Agency for Education:

If it [knowledge] is too far from what one stands for, then it is easier to question. But if it is very close to the truth that you yourself think you have in your head, then it will be easier to absorb it. (Tyra)

Tyra uses rules of inquiry and is beginning to personally evaluate and integrate the views of experts (Hofer 2000, 381). Concerning the issue of justification of knowledge, observations are emphasised at the expense of authorities. Authorities are accepted if their thinking is not too far from the teachers' professional discourse.

In the same way, Fredrik claims there must be 'some kind of recognition factor' in research in order for it to be assimilated. There are 'important persons' behind important texts because 'they have had time' to write and develop their thinking, Tyra claims. Yet Tyra and Fredrik both feel they must have support in their own practical experience in order to be able to absorb research results, or it should hold some value for them. Their own experiences must be in line with research results if they are to be relevant for them.

In summary, we find that regarding 'justification of knowledge' the students to some extent attribute knowledge to researchers, an 'authority', that they trust. But in order to be relevant for them, research must be close to their own proven experience. They tend to stress their own proven experiences. They know their place and accept and obey as professional teachers, but also reflect critically in line with an academic discourse (Northedge 2003) upon external knowledge that is not in harmony with their own opinion and proven experiences which they wish to incorporate into a knowledge structure in a scientific and vertical discourse (Bernstein 2000).

## Discussion

While the teaching profession is intimately connected with issues of knowledge (Carlgren 2015), epistemology is not a concept teachers use in discussions with colleagues at school. Knowledge issues are more about 'down to earth things' at school and primarily connected to their own profession as a teacher. Teachers live and work in an everyday world and 'everyday discourse' in which their work is regularly discussed among friends and in the mass media (Northedge 2003). Meanwhile, they are participating in a professional community, and a professional discourse, which is pragmatic, controlled and defensive and in which they are expected to position themselves within a task-orientated universe, where decisions are taken in the context of established policy (Northedge 2003). Different reforms and systems of governance (Lindblad et al. 2002) have led to increased pressure on teachers to take a reflexive attitude to themselves as well as their own knowledge formation (Ball 2003; Biesta 2010). Still, this does not mean that they hold what Hofer (2000) calls a 'simple' epistemology. Instead, knowledge exists within the frames of a professional discourse, contingent and contextual, and connected to both the teaching content in school and their knowledge and experiences from teaching. In all of this, the teacher's view on knowledge is tentative and evolving, and changes due to historical, societal, professional and personal development, i.e. it is not fixed but fluid, because their experience-based knowledge is increasing over time, i.e. growing. It is important to recognise that some teachers may take a stand against views on knowledge connected with the natural sciences.

As students in higher education entering an 'academic discourse' universe, they are expected to be helped to be conscious and open up both their everyday and professional based rhetoric, i.e. a horizontal discourse (Bernstein 1999), and to somewhat stand apart from their own actions as teachers. While their lockout point is based on their 'vocational habitus' (Colley et al. 2003), as students and teachers they display three kinds of discourse: everyday, professional and academic (Northedge 2003).

By entering the academic discourse, the teachers' ambition is to contribute to developing the everyday and professional discourse invaded by NPM with the help of the academic, or by pointing out similarities and enhance the form of knowledge they themselves have acquired and represent, based on proven experiences. In the school–university interaction, there is an exchange of ideas and a dialogue about epistemology that seems to encourage teachers to develop their personal epistemology as well as a somewhat novel 'academic and epistemological agency' (Larsson and Sjöberg 2021).

The teachers see a parallel between, on one hand, how they themselves as teachers acquire new experiences and thus knowledge and, on the other, how science develops based on new findings and methods. As students, they mirror their professional and horizontal discourse in a vertical discourse that takes the form of a coherent, explicit and systematically principled structure, hierarchically organised, like in the sciences (Bernstein 1999). In their reasoning, they tend to oscillate between a professional discourse on one side and an academic discourse on the other (Bergmark and Erixon 2020).

The teachers' epistemologies thereby become embedded and rooted in both school and university – involving their visions and hopes, and what they see as possible and desirable relative to the academisation of teachers' work as part of their personal epistemology. In so doing, they challenge both their professional and academic discourse (Bergmark and Erixon 2020).

It is thereby assumed that the teachers possess knowledge which they have acquired and should be recognised and added to the knowledge base of the field in a vertical academic discourse (Bernstein 1999). Hofer's (2000) account of the different dimensions of 'personal epistemologies' as mediating tools has in this way helped the students to expand the limits of their professional discourse into something close to a hybrid discourse, adjacent to the fourth cluster of 'soft' applied sciences such as Teacher Education (TE) (Becher 1994). In doing so, as we see it, they are deconstructing the neoliberal discourse and the governing logic of new public management. This enables the master's students to problematise, communicate and define matters of what they in their community of practice believe is important knowledge and what both academisation and research-based knowledge teachers need for professional development

The relatively small participant number is appropriate for this exploratory study of individuals' learning and understanding. They offer deep insights into the different ways in which teachers develop personal epistemologies.

Further, the people initially involved in developing the programme later participated in teaching the programme, including the two authors of this article. The power relations that prevail between academically trained teachers on one hand and student teachers on the other, especially when the research is partly about research into one's own practice, should be considered as an aspect of the limitations of this study. Moreover, there is always a risk that with interviews, in order to please, you receive answers the interviewees think you want to hear.

Therefore, and initially, we told the teachers to be interviewed that we ourselves regarded the issues of knowledge as complex, and that we were not interested in ready-made answers. We were also keen on conducting the interviews at appropriate times, without risking that our questions might be seen as part of the course assignment. The teachers' participation deepened our understanding of their understanding.

## Conclusion

The interviewed teachers in this study have undergone an academic education for four years, part time. Questions concerning epistemologies have, been recurring elements in the education, and a support when teachers verbalise their personal epistemologies. Time is an important factor in this regard. All of this points to the significance of the context.

We claim that questions about epistemologies are not merely an academic issue, but that it fundamentally affects the activities at school. The view of knowledge and its origin is important for how teaching is set up and how it is assessed, as well as for preparing students for adult life.

Based on the results, we find that the academic discourse provides teachers with new mental and intellectual tools both to expand the everyday discourse at school and to strengthen the professional discourse. The fact that teachers, in their own words, can talk about and critically reflect on their epistemological assumptions, can be extremely useful. Firstly, as a prerequisite for being able to strengthen the professional discourse, and secondly, to be able to question and problematise seemingly obvious and self-evident economic and bureaucratic logics that has come to dominate everyday discourse.

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## References

- Ball, S.J. 2003. "The Teacher's Soul and the Terror of Performativity." *Journal of Education Policy* 18 (2): 215–228. doi:10.1080/0268093022000043065.
- Becher, T. 1994. "The Significance of Disciplinary Differences." *Studies in Higher Education* 19 (2): 151–161. doi:10.1080/03075079412331382007.
- Bergh, A. 2015. "Local Quality Work in an Age of Accountability – Between Autonomy and Control." *Journal of Education Policy* 30 (4): 590–607. doi:10.1080/02680939.2015.1017612.
- Bergmark, U., and P-O Erixon. 2020. "Professional and Academic Knowledge in Teachers' Research: An Empowering Oscillation." *European Educational Research Journal* 19 (6): 587–608. doi:10.1177/1474904119890158.
- Bergström, G., and K Boréus. 2005. *Textens Mening Och Makt. Metodbok I Samhällsvetenskaplig Text- Och Diskursanalys* [The Meaning and Power of the Text. Method Book in Social Science Text and Discourse Analysis]. Lund: Studentlitteratur.
- Bernstein, B. 1999. "Vertical and Horizontal Discourse: An Essay." *British Journal of Sociology of Education* 20 (2, June): 157–173. doi:10.1080/01425699995380.
- Bernstein, B. 2000. *Pedagogy, Symbolic Control and Identity: Theory, Research, Critique*. London: Taylor and Francis.
- Biesta, G. J. J. 2010. "Why 'what Works' still Won't Work: From Evidence-Based Education to Value-based Education." *Stud Philos Educ* 29: 491–503.
- Brante, T. 2014. *Den professionella logiken. Hur vetenskap och praktik förenas i det moderna kunskapsområdet*. Stockholm: Liber.
- Caena, F. 2014. "Teacher Competence Frameworks in Europe: Policy-as-Discourse and Policy-as-Practice." *European Journal of Education* 49 (3): 311–331. doi:10.1111/ejed.12088.
- Cain, T. 2015. "Teachers' Engagement with Published Research: Addressing the Knowledge Problem a." *The Curriculum Journal* 26 (3): 488–509. doi:10.1080/09585176.2015.1020820.
- Carlgren, I. 2015. *Kunskapskulturer Och Undervisningspraktiker*. [Knowledge Cultures and Teaching Practices]. Göteborg: Bokförlaget Daidalos.
- Colley, H., D. James, M. Tedder, and K. Diment. 2003. "Learning as Becoming in Vocational Education and Training: Class, Gender and the Role of Vocational Habitus." *Journal of Vocational Education and Training* 55 (4): 471–498. doi:10.1080/13636820300200240.

- Englund, T. 2005. *Läroplanens Och Skolkunskapens Politiska Dimension*. [The Political Dimension of the Curriculum and School Knowledge]. Göteborg: Daidalos.
- Erixon Arreman, I., and A.-S. Holm. 2011. "Privatisation of Public Education? The Emergence of Independent Upper Secondary Schools in Sweden." *Journal of Education Policy* 26 (2): 225–242. doi:10.1080/02680939.2010.502701.
- Goodson, I., and S. Lindblad. 2011. *Professional Knowledge and Educational Restructuring in Europe*. Vol. 4. Rotterdam/ Boston/Taipei: Sense Publisher.
- Gustavsson, B. 2000. *Kunskapsfilosofi: Tre Kunskapsformer I Historisk Belysning*. [Philosophy of Knowledge: Three Forms of Knowledge in Historical Lighting]. Stockholm: Wahlström & Widstrand.
- Hansson, K. (2014) "Skola Och Medier. Aktiviteter Och Styrning I En Kommuns Utvecklingssträvanden [School and Media. Activities and Governance in a Municipality's Developmental Endeavours]." PhD Thesis, Umeå university, Sweden.
- Hofer, B. K. 2000. "Dimensionality and Disciplinary Differences in Personal Epistemology." *Contemporary Educational Psychology* 25 (4): 378–405. doi:10.1006/ceps.1999.1026.
- Hudson, C. 2007. "Governing the Governance of Education: The State Strikes Back?" *European Educational Research Journal* 6 (3): 266–282. doi:10.2304/eeerj.2007.6.3.266.
- Kohler Riessman, C. 2008. *Narrative Methods for the Human Sciences*. Los Angeles: SAGE.
- Larsson, C., and L. Sjöberg. 2021. "Academized or Deprofessionalized?– Policy Discourses of Teacher Professionalism in Relation to research-based Education." *Nordic Journal of Studies in Educational Policy* 7 (1): 3–15. doi:10.1080/20020317.2021.1877448.
- Lindblad, S. 2002. "Education Governance in Transition: An Introduction." *Scandinavian Journal of Educational Research* 46 (3): 237–245. doi:10.1080/0031383022000005652.
- Lundahl, L. 2005. "A Matter of Self-Governance and Control. The Reconstruction of Swedish Educational Policy." *European Education* 37 (1): 10–25. doi:10.1080/10564934.2005.11042375.
- Lunenberg, M., P. Ponte, and P. Van den Ven. 2007. "Why Shouldn't Teachers and Teacher Educators Conduct Research on Their Own Practices?: An Epistemological Exploration." *European Educational Research Journal* 6 (1): 13–24. doi:10.2304/eeerj.2007.6.1.13.
- Noordegraaf, M. 2011. "Remaking Professionals? How Associations and Professional Education Connect Professionalism and Organizations." *Current Sociology* 59 (4): 465–488. doi:10.1177/0011392111402716.
- North, S. 2005. "Different Values, Different Skills? A Comparison of Essay Writing by Students from Arts and Science Backgrounds." *Studies in Higher Education* 30 (5): 517–533. doi:10.1080/03075070500249153.
- Northedge, A. 2003. "Rethinking Teaching in the Context of Diversity." *Teaching in Higher Education* 8 (1): 17–32. doi:10.1080/1356251032000052302.
- Paulsen, M. B., and C.T. Wells. 1998. "Domain Differences in the Epistemological Beliefs of College Students." *Research in Higher Education* 39: 365–384.
- Rönqvist, C., and M. Vinterek. 2008. *Se Skolan: Forskningsmetoder I Pedagogiskt Arbete*. [See School: Research Methods in Pedagogical Work]. Umeå: Umeå universitet.
- Sahlberg, P. 2016. "The Global Educational Reform Movement and Its Impact on Schooling." In *Handbook of Global Education Policy*, edited by K. Mundy, A. Green, B. Lingard, and A. Verger, 128–144, Chichester, West Sussex, UK: John Wiley & Sons.
- Saks, M. 2012. "Defining a Profession: The Role of Knowledge and Expertise." *Professions and Professionalism* 2 (1). doi:10.7577/pp.v2i1.151.
- Scotland G.T.C. 2012. *The Standards for Registration: Mandatory Requirements for Registration with the General Teaching Council for Scotland*, 5–18. G.T.C Scotland: Edinburgh.
- Seltzer, K., and T. Bentley. 1999. *The Creative Age. Knowledge and Skills for the New Economy*. London: Demos. SFS. 2010800. *Skollagen*. [Swedish Education Act]. Stockholm: Nordstedts.
- Skagen, K. 2006. "Norsk Allmaenlaeraruuddannelse I Forandring [Norwegian Teacher Education in Change]." In *Laeraruuddannelsen I Norden* [Teacher Education in the Nordic Countries], edited by K Skagen, 71–89. Kristiansand: HøyskoleForlaget.
- Stenlås, N. 2011. "Läraryrket Mellan Autonomi Och Ståtliga Reformideologier [The Teaching Profession between Autonomy and State Reform Ideologies]." *Arbetsmarknad & Arbetsliv* 17 (4): 11–27.
- Stodolsky, S S., and P L. Grossman. 1995. "Subject-Matter Differences in Secondary Schools: Connections to Higher Education." *New Directions for Teaching and Learning* 1995 (64): 71–78. Winter. doi:10.1002/tl.37219956411.
- Swales, J.M. 1990. *Genre Analysis: English in Academic and Research Settings*. Cambridge: Cambridge University Press.
- Swedish National Agency for Education. 2013. *Forskning i klassrummet. Vetenskaplig grund och beprövad erfarenhet i praktiken* [Research in the Classroom. Scientific Ground and Proven Experience in Practice]. Stockholm: Skolverket.
- Swedish Research Council (2017). "God Forskningsssed [Good Research Practice]." [https://www.vr.se/download/18.2412c5311624176023d25b05/1555332112063/God-forskningssed\\_VR\\_2017.pdf](https://www.vr.se/download/18.2412c5311624176023d25b05/1555332112063/God-forskningssed_VR_2017.pdf)
- Wenger, E. 1998. *Communities of Practice: Learning, Meaning, and Identity*. Cambridge: Cambridge University Press.
- Wertsch, J. V., P. Del Rion, and A. Alvarez. 1995. *Sociocultural Studies of Mind*. Cambridge: Cambridge University Press.