

## Implicit Knowledge – a New Phenomenon in Teacher Education

### Abstract

This paper draws attention to the significance of implicit pedagogical knowledge in the educational process of future teaching staff. Implicit pedagogical knowledge is here understood to be the “hidden” knowledge of students of teaching, which originates on the basis of their prior experience, is derived from a student’s implicit theories of learning and teaching, is interlinked with their explicit knowledge – and which influences the behaviour of the student in a pedagogical situation.

In the process of creating and developing implicit pedagogical knowledge, the author considers the following to be key elements: self-reflection and the publicising and sharing of pedagogical experience. He indicates that it is absolutely essential that the traditional understanding (such as has been handed down to-date in the literature) be enriched by a new dimension – and especially by the dimension of one’s personality. He offers a newly-coined term “pedagogical condition”, which is understood to describe the ability and flexibility of a student to behave proactively under a variety of pedagogical situations.

**Key words:** *implicit pedagogical knowledge, student teachers, experiential learning, authentic experience, self-reflection, sharing of experience, pedagogical condition.*

### Introduction

From the dawn of time, knowledge has belonged to the fundamental pedagogical categories. Over the past decade, this category has become a phenomenon which has promised not only pedagogues and economists significant changes in the fields of education and culture, but also in the life of society as a whole. Why

do they see in knowledge the source of changes in societies and in education? The answer to this question is not simple and obviously depends upon the fact that knowledge is finding its validation in production, business dealings, education, management and other spheres of communal social life, and is becoming the source of new manufacturing processes and procedures, of innovation, new information technologies, etc. All the above have as their consequence the contribution to economic effects, which cannot always - even today, be calculated.

People absorb knowledge through various forms of education. For this very reason, great emphasis is placed today upon the practicality of knowledge acquired not only in schools but also in other further educational establishments. The search is on for the content of education and it is closely investigated, which - while basing itself on contemporary extant knowledge and observations in the science and technical fields, etc., is also currently evolving ever more towards a trend to implement and exploit it in everyday practice.

This is, however, only one face of knowledge. We consider the process of acquiring knowledge to be of even greater importance. Even this hitherto less known face is not completely unknown to contemporary pedagogy. Even constructivist approaches to teaching and learning emphasise that people construe new knowledge in the light of their prior experience.

Knowledge is demonstrated in the course of the resolution of problems and situations, and can be observed in the behaviour and actions of an individual. For this very reason, we talk about explicit, demonstrated knowledge. It is beginning to be shown that the term "explicit knowledge" intermingles and merges to a significant extent with the classical term - knowledge. This is to mean knowledge which we ascertain or determine in the course of a variety of performance tests for instance. However, it is obvious that the explicit, observable performance of an individual is dependent upon their internal disposition, i.e. upon their experience, skills and abilities, motives, etc. In the literature this kind of knowledge is referred to by the term implicit knowledge (also known as tacit knowledge).

## **The theoretical framework**

The origin of the general term implicit knowledge (or tacit knowledge) is most frequently associated with the works of M. Polanyi (1967), who developed the theory of the so-called *personal knowledge* on a philosophical basis. It is based upon the fact that the knowledge produced and used by people is public, but also to a significant extent also highly personal. These are construed subjects which, apart from the cognitive elements, also include emotional elements. They thus depend

in part upon the creation and development of implicit knowledge and the internal potentials within the subject – i.e. with both the cognitive and the dynamic elements of their personality. This means that, apart from observational abilities and skills and experience, the motives, interests and needs of the subject are a significant source for the validation and development of implicit knowledge.

When considering implicit knowledge, we cannot avoid its relationship to explicit knowledge. A whole range of authors believe that implicit knowledge lies beneath explicit knowledge (e.g. Sveiby, 1997). This means that the behaviour of a subject in social situations – which is observable (i.e. explicit), has an implicit basis. R. J. Sternberg (1999, p. 232) emphasises that implicit (tacit) and explicit knowledge interact together and thus that implicit knowledge can therefore become explicit knowledge.

“This type of tacit, hidden knowledge is obviously highly important in every phase of (a person’s) life. Without this hidden knowledge, general knowledge would have no sense at all. When we speak, the majority of the meaning is implicit or tacit. In the end, even when thinking (despite the fact that thinking may be made explicit, through the creation of pictures), the actual activity of thinking is tacit. We are unable to say just how we do this. When we want to cross the room, we are also unable to say how this happens. It develops in a tacit manner.” (Bohm, 1992, p. 24).

Implicit knowledge is a more general term and it can be assumed that it finds its validation to differing degrees in various professions. Among these, for instance, are professions like lawyers, managers, doctors, teachers, etc. (Sternberg, 1999). This has to do with professions whose content is communication with other people – for instance, with clients, patients, colleagues, pupils and students. In this paper, we will concentrate upon implicit knowledge in the education of future teachers.

We base upon the premise that implicit knowledge creates the behaviour and interactions of the student of teaching in pedagogical situations. In the literature, this kind of pedagogical knowledge is often described by the term “the (personal) practical knowledge” of teachers or student teachers. A range of authors agree upon the point that these forms of knowledge are derived from the personal experience of the subject, i.e. knowledge which is present in their past experience, current thinking-processes and behaviour (in “here-and-now” situations), and in their plans for their futures, and anticipated activities (e.g. Connelly, Clandinin, He, 1997). Some authors believe that a significant element of practical knowledge is made up of the assumptions or personal theories held by the subject - which represent their past experience and are often oriented on the future. These assumptions actively enter into the thinking and behaviour of subjects and are thus expressible using

everyday language as well as reflected in their practical activities (cf. Johnston, 1992). For this very reason therefore, metaphors can have something succinct to say about such assumptions and personal theories. The metaphorical language used by teachers for instance in conversations and discussions about their teaching often reveal just how much significance they place upon what happens in their classrooms as well as how they see their role and that of their pupils (Marland, 1995, p. 134).

Let us therefore attempt to summarise the basic characteristics of implicit pedagogical knowledge:

- a) There are “hidden” types of knowledge which influence the behaviour of subjects (e.g. student teachers or teachers) in pedagogical situations.
- b) They arise on the basis of the experience of the subject.
- c) They develop from the implicit, subjective theories of the subject and are created from the combination of their experience, and the resolution of practical situations.
- d) They are linked with explicit pedagogical knowledge and we may hypothetically theorise about their interconnectedness with other internal assumptions and presumptions of the subject (i.e. their skills and abilities, motives, needs, etc.).

### **The experiential learning as a starting-point for the creation of implicit knowledge of student teachers**

In earlier studies (Švec, 2004), we described the results of qualitative research which demonstrated that the source of the practical pedagogical knowledge of student teachers is their own experience – which they may have already acquired in their first year of studies at the faculty, for instance in general didactics, the theories of education, pedagogical psychology, etc. We obtained these research results within the framework of the teaching of general didactics, which is a subject in the second year of teacher training studies. Among other things, we came to the conclusion that in order for students to be able to master practical pedagogical knowledge on the basis of their own experience as early as in this phase of their professional preparation, two basic conditions must be fulfilled, that:

- a) Experience is gained in a realistic pedagogical environment (e.g. in the didactic resolution at the faculty’s Basic school through the use of micro-teaching).
- b) Experience becomes the subject of a student’s self-reflection.

In this research study, we also discovered that the process of creating and the development of practical pedagogical knowledge depend upon the individuality

of the student and is derived from and builds upon subjective, implicit theories of learning and teaching. We presumed that this practical knowledge of the student has an implicit character. We were able to confirm the above-mentioned assumption through a series of subsidiary research studies conducted at selected departments of several universities in the Czech Republic: i.e. the Departments of Pedagogy of the Pedagogical Faculties in Brno and České Budějovice, the Department of Education Science at Tomas Bata University in Zlín, and the Department of Creative Writing and Pedagogy at the Theatrical Academy of Musical Arts in Prague (Švec, 2005a).

The research outcomes described in the aforementioned studies (Švec, 2005a) confirmed that the chief source of students' implicit pedagogical knowledge is their **authentic experience**, supported by self-reflection. This has to do in fact with a certain form of experiential learning (Švec, 2000b).

An important element, or mechanism in the process of processing pedagogical experience is **self-reflection**. This is not simply turning to the past (to what the student had done) – as is often emphasised in a whole range of works, but predominantly it has to do with turning oneself to the future. Nor is it the turning of the subject inwards upon themselves – as is understood in certain models of reflexive teacher training programmes, but rather (and above all) the turning of oneself outwards, to the external world, to the relationships in which we find ourselves. The distinguished Czech philosopher Jan Patočka (1995, p. 69) expresses this very succinctly – as follows: “Reflection upon one’s own experience leads to inconsistency and dissension, to a duality between the experienced and the person experiencing it, to a falling into the antithesis between the person going through something and the thing that they are going through. If I were to look at myself – I would indeed be me, but that (the person) at which I would be looking, it is clear is not the same me, who is looking at me ... Such a view turned against oneself certainly also belongs to ourselves, but our own being has an a priori access and approach to itself. The ways in which our original own existence is accessible to ourselves, is in that we must make, create, and act our own being ... that we are not indifferent to our own being, that, in our own presence, we already anticipate and timetable something which we are yet to be ... It is not therefore that we are, and then we do something, (it is) in that doing that our whole being is played out.”

When a student is met with a pedagogical situation, it is clearly not in place for them in the first instance to analyse the situation in their thoughts, to mediate upon the issues, but rather and above all, that they **act** to it. In their behaviour, the student expresses their expressions reflecting their real relationship to the triad of the student teacher – content – pupils.

**Experiential learning** thus represents the student's path from pedagogical experience to implicit knowledge (Švec, 2005b). On this path, the student *seeks out contrasts* between what they are able to do and what they are not yet able to do. In these contrasts lies the **dynamics of the student's behaviour**, which is comprised in the comparison of the state between that which the student knows, knows how to do, is able to do and that which in a given situation is still unknown to them – i.e. that which they must discover and find out. This dynamics is also the source of the *hypotheses of the student* (i.e. how to overcome their “ignorance”), which is then verified by further attempts.

*Student attempts* to act in pedagogical situations should be **publicised** in a group of colleagues and university teachers (e.g. teachers of general didactics). Within the group, the **sharing** of acquired experience occurs through the use of feedback from these colleagues and university teachers. In sharing the pedagogical experience of the student or beginner teacher with their more experienced colleagues in the course of which the creation of mutual knowledge occurs, is a phenomenon pointed out by B. Torff (1999) for instance. The student repeats their attempts in response to the **responses** of members of the group as well as through self-reflection. This *repetition*, however, is not the mere reproduction of previous attempts. These are not the same repetitions but rather certain movements ahead, *changes in the quality of the student's behaviour*.

Developing implicit pedagogical knowledge depends upon what conditions for learning to teach are created for the students by the teacher of budding future teachers (e.g. in the training sessions, in their pedagogical practice, etc.). The development of implicit knowledge, however, also depends upon to what measure the student is aware of implicit knowledge. This awareness – in making it explicit – obviously does not occur automatically in the course of resolving pedagogical situations. We can therefore pose ourselves the question, whether or not it would be possible to set up – figuratively speaking – a mirror before the student, in which they would be able to see their explicitly expressed behaviour in a certain pedagogical situation (for instance, when discussing issues with pupils) and for them to understand why they behaved just as they did. It can be anticipated that this turnaround, that is to say this **rendering explicit** of implicit knowledge can be mastered by the student with the open-minded support of the teacher trainer or another experienced (and pre-prepared for encouraging such a turnaround) teacher, as has already been indicated by some research studies (e.g. J. R. Hall, S. Hall, 1986).

In the literature, we can find further possibilities as to how to support the development of students' implicit pedagogical knowledge, through:

- The actions of the student in *the environment* in which their implicit knowledge and experience will later be used (Sternberg, 1999).

- The preliminary “*embedding*” of the student into everyday school practice, even before their own pedagogical practice combined with self-reflection upon the experience so acquired (Torff, 1999).
- Deeper *self-reflection* on pedagogical experience (Kettle, Sellars, 1996).
- Encouraging the student to become aware of the restrictions imposed by their (limited – i.e. student’s) conception of learning and teaching, and the creation of the *meta-cognitive skills and abilities* of the students (Marland, 1995).
- Engaging the student (teacher) in *investigating their own activities*, experimentation and reflection (Richardson, 1996), in action research (Jofili, Watts, 1995).
- Resolving less common, *non-standard situations* (Sternberg, 1999).

## The character of pedagogical implicit knowledge

In our research endeavours, we have up until now come to the preliminary conclusion that cognition of knowledge does not occur only in the head of a student, but rather that it already occurs in their body and in their preconceptions and assumptions and that the education of future teachers should include their preparation for the mastery of pedagogical situations through the imposition of their own personalities. This conclusion is also confirmed by the responses of two 4th year students of the pedagogical faculty – Honza and Libor – who were taught general didactics by the author of this paper at the Brno-based Pedagogical Faculty and who went on to work with him on research studies. Both students requested that they teach Czech Language (the subject of their approbation) at the faculty school and they took turns in filming their behaviour in class and they also noticed the reactions of the pupils to their behaviour. Upon completion of these lessons, the author discussed the resulting video-recordings with Honza and Libor (Švec, 2006). First of all, they viewed the recording of Libor’s lessons together and reacted to them (V.Š. designates the author of this contribution):

**Libor:** ...*in the beginning I noticed or became aware of what I had often been told off for – i.e. my intonation, and the fact that I am absolutely unable to lower my voice at the end of a sentence ... and that this may sometimes have an unpleasant effect upon my listeners if they have to listen to this throughout the whole lesson ...*

**Honza:** *It didn’t really bother me – but maybe that’s because I know you ...*

**V. Š.:** Do you feel that you were successful in making contact with the pupils?

**Libor:** ...*I have mixed feelings about that, I had the impression that I didn’t really succeed in making contact, that they didn’t cooperate much with me ...it was my first time there...*

**Honza:** ...*Libor could have moved out into space (classroom) a bit more ... I also have problems doing so sometimes ...*

**Libor:** ... *I became aware that I had stood leaning against that chair for almost the whole lesson ... next time; I would probably think a lot more about that...*

**Honza:** ...*but behind the desk and on that podium is a “safe space”, I attempted a mini trip out among the pupils, but then I went straight back ... up that podium, in front of those children, I had a more secure feeling...*

**V. Š.:** It just needs more time, until a person acquires the requisite conditioning ... for me (personally) that podium bothers me...

**Libor:** ...*when I had taught maybe six hours, then it was different there, I was much more relaxed there ... I moved about...*

This was followed by the projection of Honza's lessons:

**Honza:** ...*I'm completely devastated by how I can't be understood...*

**V. Š.:** Honza, did you feel a response from the children? Can you see them now in the video?

**Honza:** *I felt their response in the lesson ... sufficiently ...but now, looking at myself, how I can't break myself from that mumbling ...I went into the lesson full of great fear, but I relaxed fairly quickly ... and I felt good in that lesson ...*

**Libor:** *I had the feeling that the response in my lesson was minimal, but when I looked at it in the video, then I discovered that it hadn't been so bad...*

**Honza:** *The video could be a good aid ...for the permeation of theory and practice ... to break it down in a real lesson, not a recorded lesson...by watching Libor's lesson I want to see my own faults in the light of someone else ...that which they do well, and again maybe the opposite ...*

Later, the author showed Libor and Honza some video-recordings of studies of female students of the 2nd year – i.e. their two year younger colleagues, which he had taken in seminars in general didactics.

**V.Š.:** *In what do your approaches in lessons differ from those of your colleagues?*

**Honza:** *Well, decidedly in orientation, I mean that the lesson is conceived with an aim ... with them, the majority of the time it was only about talking in front of someone so that they would “get something out of it” ...*

**V. Š.:** ... *and then – your lesson had a more rounded-off pedagogical shape ... Did you notice anything that their and your efforts had in common, what makes the axis of teaching...?*

**Libor:** *Well, maybe regarding the posture of the bodies, that was very similar (between us all)...as Honza said ... some kind of mini trips out among the pupils. But otherwise we both more-or-less stood leaning upon the table ... and in the same way, the girls stood up and stood there...*

**Honza:** ...*with regard to movement, I would say unnaturalness ... When I remem-*



*ber the teacher trainer, how naturally she spoke, and how she walked the same way ... we were so uptight ... I stood there like a goalpost... so you were right back there in the second year when you told us, that everything is expressed in that body ...*

Both students, on the basis of reflection, became aware of their behaviour recorded in the video-recording that to act means **to face up** with their whole bodies to a pedagogical situation that has arisen. A significant factor in such situations is not only the thought processes of the student teachers, but also their voice, speech and bodily activity.

We have mentioned the “adaptability and flexibility” of the student to pedagogical situations – where it is a presumption that the student will act creatively and authentically in such situations. This adaptability and flexibility is designated by Ivan Vyskočil of the Department of Creative Writing and Pedagogy at the Prague-based Theatrical Faculty of Musical Arts, by the term “the psychosomatic condition”. Condition is, according to him: “a certain maturity, level of preparedness, readiness to react quickly and sometimes even the need, taste, impulse to appear in public, to act upon things, to behave in certain ways, to experience things directly, without barriers and preconceptions, spontaneously, creatively and productively, free-willed and responsibly; in feedback loops in a fully high quality way.” (Vyskočil, 2000, p. 7).

Should we consider the adaptability and flexibility of the student to act in a pedagogical situation, we can use the term “the pedagogical condition”. The **pedagogical condition** is “something more” than a simple set of mastered pedagogical knowledge. It thus represents the orderliness of bodily, spiritual, but also even the moral disposition of the student of the teaching profession (Vyskočilová, 2002). We can understand as it the preparedness of the student to perceive the holistic pedagogical situation. It is the *seeking of balance, the fine-tuning of the poles: teacher – content – pupils* in the existing context. In the situation where a student endeavours (if they are appropriately encouraged to do so) to notice how well they are doing – or on the other hand, how badly they are doing. In so doing, they are actually adapting even more flexibly to the situation, they are fine-tuning.

The condition may change – we are not always “in condition”, and this despite the available knowledge and experience. When we are not in condition, we are obviously unable to validate our pedagogical knowledge. E. Vyskočilová reminds us that “pedagogical condition” is a momentary state of the subject, “which for each of us in a complicated way, over the long term, and is therefore multi-layered”. She goes on to add: “Here, we once again return to that bodily feeling, to instincts, intuition, emotional memories and emotional intelligence and so on – which have to do precisely with the “cerebral” centres and in the areas of behaviour involving

movements and perception mechanisms. This accumulation of dispositions in the course of the origin of condition has, on the one hand, advantages in the fact that even when a person is not in good condition, despite this there always remains some form of predisposition to them. On the other hand, it has disadvantages in the fact that everything that a person does has an influence on condition – i.e. that a person can damage their own condition, and this happens where someone works long-term against their own self-interests. Later, the orderliness of these (pre)dispositions gradually falls apart.” (Stuchlíková, Švec, Vyskočilová, 2004, p. 78). The “Pedagogical Condition” constantly develops – in the words of E. Vyskočilová, “it seeks repeatedly to find an awareness of the possibilities and opportunities as well as the restrictions and limitations of one’s own personality.” (Vyskočilová, 2002).

## **Conclusion**

Implicit pedagogical knowledge can therefore be considered a new phenomenon in the education of teachers. It would seem that it represents a multi-dimensional category, which apart from cognitive dimensions also includes both non-cognitive and personality dimensions. We believe that the existing conception of implicit pedagogical knowledge which is discovered in working practice, and cited in this paper, desperately needs revision, and apart from other issues also in the light of observations about the pedagogical condition. We have pointed out some of the impulses in our work. However, the seeking of a new, and obviously wider conception of implicit pedagogical knowledge in the preparation of budding future teachers must be buttressed by serious pedagogical studies and research.

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