

Making Knowledge Work: Fostering Implicit Reflection in a Digital Era of Language Teacher Education

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Abstract

Reflection and reflective competence have become buzzwords in modern language education despite being around since their inception in the works of Dewey (1933) and Schön (1983, 1988). Surprisingly, although reflection is considered one of the key ingredients of teacher education and professional development, little is known about its actual effects on teachers and potential learner outcomes. This article aims to shed light on recent developments in the field of reflective language teacher education and their realizations in (higher education and teacher training) practice. As a result of this discussion, the concept of 'implicit reflection' is discussed as a necessary result of sociological knowledge research, which stresses the need to make implicit knowledge bases tangible. Yet, reflective models today focus mostly on explicit knowledge and the evaluation of a certain 'competence' to reflect on or, rather, discuss explicit theoretical concepts. Finally, possible ways of integrating (collaborative) implicit reflection in language teacher education are presented which will be conceptualized, especially against the background of the potentials (and pitfalls) of digital media and their integration in teacher education programmes.

Key term: reflection; reflective practice; reflective practitioner; knowledge; professional development

Abstract

Reflexion und reflexive Kompetenz sind aktuell häufig bemühte Konstrukte in der modernen Fremdsprachendidaktik und Fremdsprachenlehrer*innenbildung, obwohl sie ursprünglich auf die Arbeiten von Dewey (1933) und Schön (1983, 1988) zurückgehen. Dies ist insofern erstaunlich, da Reflexion als eine grundlegende Komponente in der Lehrer*innenbildung und der Professionalisierung von Lehrer*innen betrachtet wird und trotzdem wenig über die eigentlichen Effekte von Reflexion für die Lehrkräfte selbst und auf Seiten der Lernenden bekannt ist. Dieser Artikel beleuchtet die neuesten Entwicklungen im Bereich der reflexiven Fremdsprachenlehrer*innenbildung und deren Realisierungen in der Praxis. Als Resultat dieser Diskussion wird das Konzept von ‚impliziter Reflexion‘ als ein Ergebnis von wissenssoziologischer Forschung diskutiert, welches davon ausgeht, dass gerade unsere impliziten Wissensbestände diejenigen sind, die unser Handeln bestimmen. Bisher fokussieren die meisten Reflexionsmodelle hingegen auf explizites Wissen und auf die Förderung und Evaluation einer gewissen ‚Reflexionskompetenz‘ oder sie diskutieren eher explizit theoretische Konzepte. Schließlich werden mögliche Wege für die Integration impliziter Reflexion präsentiert – vor allem vor dem Hintergrund von Potenzialen (und Schwierigkeiten) digitaler Medien und deren Integration in der Ausbildung von Fremdsprachenlehrkräften.

Schlüsselbegriff: Reflexion; reflexive Praxis; Wissen; Professionalisierung

1. Introduction

In the last 20 years, it has become increasingly important in both research and teacher education to observe and question how (in our case: language) teachers think and what they think about (e.g., Caspari, 2014; Borg, 2003). Given that beliefs and teacher cognition are considered to have an enormous impact on what happens in classrooms, teacher education tries to use concepts of reflection to gain insights into how teachers think. It is widely agreed that “reflection is the key to teacher learning and development” (Shulman & Shulman, 2004, p. 264). However, one conundrum remains: To what extent does reflection actually have an effect on individual professional development? And how do we make sure that we reflect on our teaching practice in a way that leads to professional development?

This article aims to outline ideas of what we might end up calling ‘implicit reflection’: an approach to reflection that tries to reach implicitly underlying, tacit knowledge that informs our actions but that a teacher (or student teacher) is not necessarily aware of. Implicit reflection is an approach to make implicit knowledge that determines our actions to a great extent reflective, i.e. more explicit, by eliciting narrative reflections that make possible the reconstruction of implicit knowledge.

In order to explain the approach, this article is divided into three parts that lead into each other. First, a brief overview of the most prominent concepts of reflection in the field of language teacher education is presented. Second, the importance of differentiating between certain strands and modes of knowledge is outlined before presenting the basic premises of implicit reflection. Third, the article offers potential ways of integrating implicit reflection in existing approaches of teacher reflection and discusses these in brief against the background of digital innovations in the field.

2. Reflection, reflective competence, and language teacher professional development

Reflective approaches to teacher development start from the assumption that teachers, rather than methods, make a difference; that teachers are engaged in a complex process of planning, decision making, hypothesis testing, experimentation, and reflection; that these processes are often personal and situation-specific; and that they should form the focus of teacher education and teacher professional development. (Richards, 1998, p. 3)

The idea that professionals reflect on their actions is not an innovative concept. John Dewey (1933) already mentions a ‘state of doubt’ — today we might call it a ‘critical incident’ — that is necessary to reach a certain mindset which might then serve as an impetus for reflection. Donald Schön (1983), very prominently, provided a timeline for moments of reflection: before an action (e.g. while planning a lesson), after action (reflecting on a lesson just taught), or spontaneously during (in) action which might lead to immediate changes in how teachers conduct a class or prepare a lesson plan. Reflection has become an expected “generic professional disposition” (Korthagen et al., 2001, p. 67) and “a generic component of good teaching” (ibid., p. 51). Surprisingly, little is known about the impact of reflection on teacher education and professional development (Korthagen et al., 2001), and even less about its effects on learners in classrooms (Akbari, 2007; Mann & Walsh, 2013).

Apart from these questions of competence-oriented effectiveness, reflection needs to be viewed within the context of structures and systems, as well as on the level of individual (identity) development of language teachers. Therefore, models have been developed that focus not just on the optimization of teaching through reflection and the search for alternative actions (e.g. the ALACT model: Action – Looking back on the action – Awareness of essential aspects – Creating alternative

methods of action – Trial; Korthagen et al., 2001) that have also influenced (or have been influenced by) approaches of action research (e.g. Benitt, 2015); a tendency becomes evident to view different (also cognitive) levels of the individual and to observe how they interact with the teaching environment, institutions, and learners. The onion model developed by Korthagen and Vasalos (2005), for instance, describes the idea that teaching as actual classroom behaviour — although directly shaped by competencies — has deeper levels and layers that influence each other: An inner mission and a teacher identity have substantial effects on individual beliefs which again shape knowledge and competencies. Burwitz-Melzer (2018) has adopted this model for language teachers. For each level of teacher personality, she discusses certain reflective questions which help figure out one's own position within an institutional, educational setting. In addition to the adapted onion model, she discusses the European Portfolio for Student Teachers of Languages (EPOSTL; e.g. Mehlmauer-Larcher, 2012), which is a useful instrument for future language teachers (and in-service teachers) to reflect on their knowledge, skills, and actions. However, Burwitz-Melzer (2018) notes that some teaching competences are missing in the EPOSTL — such as listening and viewing comprehension — as well as rather fundamental questions of teacher personality, one's own (language learning) beliefs, language competence, and the (potential) reflection of a transformation of explicit knowledge into knowledge-in-action.

Farrell (2015, 2018), in particular, has contributed immensely to the field of language teacher reflection in terms of approaches, methods, and guiding principles. His latest conceptualization of developing reflection competencies in language teachers (Farrell, 2015) is based on the idea that you first need a certain “philosophy of teaching” that is shaped by your teaching biography; also necessary, however, are “principles” that guide you through the language teaching process. “Theories” establish a foundation to justify certain actions while “practice” allows for reflection during action. In addition to these principles, Farrell (2015) deems important the concept of “beyond practice”, which means that teachers should develop a critical stance towards both institutions and one's own role within socio-cultural and political structures.

Abendroth-Timmer (2017) models reflection encompassing not only different knowledge bases but also teacher personality, beliefs, identity, emotions, experiences etc. embedded in societal and institutional norms, one's own school biography, and the tools and instruments of teacher education and educators to make all of these fruitful for individual development (Abendroth-Timmer & Schneider, 2016). Reflection, which is embedded in situational contexts, is created anew everytime a professional acts and is therefore highly context-specific (Gerlach & Leupold, 2019). This complexity fits into concepts of dimensioning the professional competences, knowledge, and identity of language teachers who — in contrast to teachers of other subjects — seem to be shaped immensely by their language biographies, experience, and cultural experiences (e.g., Appel, 2000; Legutke & Schart, 2016; Schultze, 2018).

What has been widely established as effective conditions for reflective practice is a certain amount of opportunities to reflect on (Wideen et al., 1998) in which reflection might be conceptualized as a gradual process that can be reconstructed on different levels (von Felten, 2005; Roters, 2012). In addition, reflective practice is domain-specific (Davis, 2006) since the aspects (the content and pedagogical content knowledge in particular) reflected on change from subject to subject and might — for different knowledge domains (e.g. professional, procedural, and personal knowledge; Kumaravadivelu, 2012) — require different levels of reflection or different teacher research constructs (Tsui, 2003; Blume et al., 2019). Schädlich (2015), for example, defines “students' reflective competence as the ability to integrate teaching experience with the theoretical knowledge acquired in university classes” (p. 255). But there is much criticism of the requirement (and ultimate goal) of

teacher education to prepare future teachers to become reflective practitioners. If reflection must be considered a certain mode of thinking that is both recursive and self-referential (Häcker, 2017), a potential competence to reflect depends on both individual factors, experience, and knowledge and subject- or domain-specific knowledge — in our case the teaching and learning of foreign languages. Given that premise, we might overcome the alleged theory–practice divide that still dominates discussions in teacher education (among both trainees and teacher educators) when we rethink the role of professional knowledge. It might not be a problem of transferring knowledge to practice, but rather whether the knowledge that is considered essential for future language teachers is actually transformable (Radtko, 1996). In Germany (but also internationally), different conceptualizations have been put forward to explain or empirically describe teachers’ professional development. Apart from competence-oriented approaches that try to establish a certain knowledge base for (language) teachers, more sociologically driven (reconstructive) research refers to professionalism as determined both by one’s own biography as well as structures within which professional action and professional development might occur (Terhart, 2011). Structural approaches consider critical incidents in teaching and teacher development as essential elements, as certain episodes which might help the teacher, the teacher educator, and the researcher to examine practice (and maybe relate it to theoretical constructs and assumptions).

3. Implicit reflection

In any approach that tries to foster, reconstruct, or capture professionalism, knowledge plays a dominant role. All of the approaches mentioned above that try to explain teachers’ professional development agree that knowledge might inform action; yet, the direct connection between knowing, competence, and action has been questioned for a long time. When speaking about the knowledge of professionals, it is necessary to distinguish certain kinds of knowledge: The most common distinction is between declarative or explicit knowledge and implicit or non-declarative knowledge. Most theory — that is, concepts of language teaching, language classrooms, and learners — that (future) teachers might learn through interventions like university courses and seminars has the goal of becoming a part of declarative knowledge eventually. This is the knowledge that is mostly considered to be assessable through tests and that provides alternatives for certain actions in reflection situations, for example, in lesson observation debriefings. Although few teacher educators would deny the importance of a certain knowledge base for a specific purpose in teaching, sociologists question the relevance of explicit knowledge for certain actions. Even Lee Shulman (1987a), who has become prominent for distinguishing among different (declarative) knowledge types for professionals, states that knowledge cannot be conceptualized as a static entity but rather is reconstructed every time in classroom interactions with learners: “Judgment, rather than behaviour, is the essence of teaching”, he writes (*ibid.*, p. 478). Furthermore, many (spontaneous) actions cannot be explained by the person executing them but are deeply engrained in his/her habitualized professional being. In addition to researching different social milieus in which certain structures are established and actions are informed by those structures, the sociology of knowledge proceeds on the assumption that it is this implicit knowledge that we are not fully aware of that informs our actions probably to a larger degree than explicit knowledge that we can gain and use for our reflections.

3.1 The role of knowledge for professional action

The phrase “*we can know more than we can tell*” (Polanyi, 1966, p. 4; italics in original) has become a popular saying for explaining implicit assumptions or abstract ‘tacit knowledge’ that cannot be codified

(Mannheim, 1997). In a model of concepts of teacher knowledge, Neuweg (2014) describes the extent to which implicit knowledge is different from and fits into the (necessary) knowledge bases for (prospective) teachers:

1. Knowledge 1 describes codified knowledge or the professional knowledge of teachers. It is this knowledge that — through consideration of the discipline and teacher education institutions — is considered to be the knowledge that teachers need. Teachers can learn this knowledge. But, in the case of professionals and researchers who try to explore and define this knowledge, it might be shaped and influenced by their experience, too.
2. Knowledge 2 refers to mental structures, schemata, and procedural knowledge as a result of learning (through Knowledge 1 or experience). Here, both explicit and implicit (tacit) knowledge interact with each another.
3. Knowledge 3 exemplifies actual competence as shown through behaviour and knowledge-in-action as a result of Knowledge 2.

Neuweg (2014) identifies that that Knowledge 3 is often considered to show a direct connection to Knowledge 2. What happens is that researchers only gain limited insights into this knowledge while reconstructing it on the basis of certain episodes observed in classroom situations or interviewing teachers about their teaching. Therefore, Knowledge 3 might be considered as ‘researcher knowledge’ that is interpreted based on the assumed logic of actions. In addition, the often-quoted dilemma between theory and practice (e.g. Radtke, 1996) might be overcome considering that, in this model theory being Knowledge 1 and practice being Knowledge 3, in discussions about teacher education the role of Knowledge 2 is ignored more often than acknowledged.

This illustrates both the complexity and the dilemma when speaking about the necessary and/or potential knowledge of teachers (or teacher candidates) and the effects that any intervention in this field might have on classroom behaviour. Establishing a connection between the ‘three knowledges’ is difficult and many open questions remain.

3.2 Implicit reflection in teacher education

“Teachers themselves have difficulty in articulating what they know and how they know it.” (Shulman, 1987b, p. 225)

“*Content* for reflection refers to *what* teachers think about; *quality* of reflection refers to *how* they think about their teaching—the process of thinking they go through.” (Valli, 1997, p. 74; italics in original)

When teacher students are told to reflect on their actions as just observed in class, what happens in most cases is an analysis of certain situations and reactions which are, if done well, rooted in theoretical (declarative) knowledge which can be explained to the teacher educators who are advising the candidates. Certain alternatives presented for the decisions made in class earlier might even convince the teacher educator that the candidate has ‘professional knowledge’ (Knowledge 1 in Neuweg’s [2014] conceptualization), and this assumption might be true and fair. For example, a teacher educator might be able to distinguish between different levels of reflection (Roters, 2012) which can serve as an indicator of expertise (or novicehood) of the candidate. If these levels of reflection are then made transparent to the candidate, he/she might be able to work on a more differentiated description of potential future classroom behaviour integrating more complex approaches that he/she knows about (Häcker, 2019).

Yet, based on Neuweg’s (2014) differentiation above, one might ask if this knowledge presented as a ‘reflection’ is at all relevant for future classroom performance of the candidate or teacher student

since implicit orientations and implicit knowledge have not been tapped into. If one takes for granted that it is predominantly implicit knowledge that informs our actions (Bohnsack, 2017), especially in professionally demanding situations that require spontaneous reactions, we have to find ways to make this knowledge more 'explicit'. When reconstructing implicit orientations, knowledge, and beliefs, research methodology grounded in the sociology of knowledge (e.g. Mannheim, 1964, 1997; Bohnsack, 2017) proceeds on the assumption that this knowledge shines through narrations and descriptions, classroom episodes that teacher candidates present in spoken form or writing (Gerlach, 2019). In sharp contrast, in arguments and judgements one predominantly finds declarative knowledge. Therefore, differentiating between different genres of texts as part of an analysis of narrative structure (Schütze, 1987) is essential for grasping implicit orientations. As Nohl (2010, p. 206) stated, "According to Schütze, we can assume that there is a close connection between what is narrated and what was actually experienced here". Yet, what we find in most reflective texts, whether spoken or written, are judgements and arguments since teacher candidates are supposed to give reasons for their decisions, alternatives for actions etc.: "[...] here, he or she explains and theorises about the motives and reasons behind his or her own action or makes an evaluative statement about them" (ibid.). Therefore, we have to find ways of eliciting more narrations about what happened (or happens) in class before teachers switch to reasoning and evaluating their own actions.

Narrative prompts that transform lesson debriefings into more interview-like situations in which teachers are to recount what happened in class without evaluating it are considered to be an effective means of reaching at least certain parts of implicit knowledge. It is then possible to reach a level of 'implicit reflection' (Bonnet & Hericks, 2019; Gerlach, 2019). In these texts that are being created, it is not only important what the teachers are talking about (sometimes even less so), but rather 'how' they talk about their practice and actions (Mannheim, 1964, 1997; Bohnsack, 2017), as well as how these interact (or not) with given or perceived normative assumptions (Bonnet & Hericks, 2019). Based on certain principles, one can reconstruct what actually guides and informs the interviewee's actions: Is it really a certain knowledge base prescribed to him/her through the teacher training institution or is it (pure) experience? Maybe his/her classroom management is informed by underlying beliefs of learning and teaching that are in contrast to what might be expected normatively from the institution? Perhaps the teacher is not even aware of certain beliefs, orientations, and guiding knowledge?

A sample reflection of a teacher candidate might illustrate what implicit reflection tries to aim at (taken from the corpus of Roters [2012]; analysis published earlier in German in Gerlach [2019]):

A second point that I have been referred to after the lesson is the fact that I finally started to explain the rules of the game in German instead of English, because I felt that the pupils did not understand me. At this point, it would have been better to keep English as the language of instruction and to support explanations through gestures and a sketch on the blackboard. This would have been enough—to sketch the playing field on the blackboard and then show the sketch directly ... what is meant by 'line' or the term 'cross out the number' in order to firmly establish English as the language of instruction.

On a productive level of reflection (Roters, 2012), the teacher justifies her approach in the classroom and can, through *reflection on action*, name alternatives that would have given the lesson a different, probably better direction. For the analysis in terms of implicit reflection, it is now necessary to investigate not only the 'what' of the utterance but also 'how' it is reflected. The reflection impulse apparently occurs through another person who has observed the use of the language of instruction, that is, the expectations or demands placed on teaching are not yet the candidate's own. One also observes a normative (impersonal) nature of naming alternatives explicitly ("*it would have been better...*", "*that's how you would...*") that points to standards and norms that are relevant to the other person but not necessarily to the reporting teacher. The reflection may therefore be very good both

<https://doi.org/10.18452/22340>

technically and explicitly and offer high-quality alternatives, but it remains to be seen whether these requirements will actually be implemented in the candidate's future lessons. As a subsequent focal point of reflection (or impulse on the part of a teacher educator), one could therefore address and inquire more about the candidate's beliefs regarding language learning or how, in this example, English lessons work with regard to the topic of the lesson. For this purpose, the levels of the onion model of Korthagen and Vasalos (2005) could be useful to illustrate the interconnectedness between teachers' inner mission, beliefs, knowledge, and competencies that influence our teaching.

4. Integrating opportunities of implicit reflection in language teacher education and development

Most techniques and approaches within the field of language teacher education that try to foster reflection are based on concepts such as Schön's (1983, 1988) *reflection-on-action* or the ALACT model developed by Korthagen et al. (2001). Yet, considering the remarks above, these models have to integrate narrative elements if reflection is to become productive and attempt to reconstruct implicit knowledge. This changes the perspective of a reflection session and tries to answer the following questions (Gerlach, 2018):

- What is the teacher speaking about?
- What is he/she focussing on? What is he/she leaving out?
- What is presented as being set? What norms are guiding or restricting him/her?
- How is the connection between lesson plan and classroom experience?

Furthermore, there has to be time to interpret and analyse text genres and orientations. Also important is another question: Who fulfils this role of the interpreter? In early stages of teacher education it should probably be a teacher educator who is qualified to work with the methodology and approach of implicit reflection. In later stages, once teachers are aware of the value of their spontaneous narrations and what to look for, colleagues (or mentors) might discover hidden implicit orientations while talking about a lesson that has just been observed together or individual teachers might even be able to reflect implicitly on their own. In the following, some basic, and early, ideas are presented that might create instances of implicit reflection.

4.1 Approaches, techniques, and methods

For reflective practice in general, different approaches have been proposed that can be integrated at different levels of teacher professional development. They differ in the tools used to record reflections or whether it is considered a rather individual or cooperative and constructive experience. Abendroth-Timmer (2017) differentiates between (1) individual-monological, (2) peer-dialogical, (3) visualizing, and (4) experimental approaches of reflection and gives examples for each. Table 1 shows possible methods based on that differentiation.

Approach	Technique/method
(1) Individual-monological	<ul style="list-style-type: none"> • Reflective diaries • Portfolio • Autobiographical writing • Reflective writing
(2) Peer-dialogical	<ul style="list-style-type: none"> • Peer coaching • Critical friends • Learning conversations (also in written form) • Coaching • Mentoring
(3) Visualizing	<ul style="list-style-type: none"> • Videography (one's own or third-person material) • Repertory grid • Conceptual maps (about subjective theories)
(4) Experimental	<ul style="list-style-type: none"> • Simulations (critical incidents) • Theatre pedagogy approaches • Creating tasks for other teachers and overserving the execution

Table 1: Approaches for reflection and corresponding techniques/methods based on Abendroth-Timmer (2017)

In order to prepare teacher students for reflection, case studies of critical incidents have been recommended frequently. These might be followed by micro-teaching scenarios that allow fostering a multi-perspectival view on the teaching of short sequences and the reflections thereof. These techniques and the approaches listed in Table 1 can additionally be integrated into reflective tasks (Gerlach, 2018). In institutional teacher education settings, these focus on a specific teaching challenge (e.g. error correction and feedback) and design opportunities of reflection that help teacher students to gain theoretical knowledge; watch, for example, lesson videos that deal with the phenomenon, and cooperatively integrate experiential knowledge and their own practice into a reflective setting.

When analysing reflections in general, not only is the 'how' of implicit reflection important but also the 'what' because it might reveal different sources of explicit knowledge or even normative assumptions that one might relate to implicit orientations. The 'what' might be analysed based on levels of reflective competence (Roters, 2012) or in how far explicitly mentioned aspects are congruent or in contrast to implicit orientations (Bohnsack, 2017). Additionally, a categorization of different types of knowledge might be fruitful if, for example, the role (or the amount) of pedagogical content knowledge or content knowledge serves as a foil to explain classroom behaviour. When pedagogical content knowledge is considered "a special amalgam of content and pedagogy that is uniquely the province of teachers, their own special form of professional understanding" (Shulman, 1987b, p. 227), the interpretation and transformation of this knowledge might be highly individual and context-specific (Neuweg, 2014, 2015; Abendroth-Timmer & Schneider, 2016; Gerlach & Leupold, 2019). A teacher candidate who shows a high amount of content knowledge in his/her reflections (e.g. about a grammar-focused or literature lesson) but almost no language teaching concepts might run the risk of neglecting language teaching in favour of teaching grammar or pure literature. Making a teacher (candidate) aware of this mismatch and showing ways to deal with it should then be the job of a teacher educator (or maybe a colleague or mentor). For the analysis of reflective texts, obviously, written reflections or transcripts of spoken reflections are not as ephemeral as spoken text. These could be integrated into a long-term portfolio that accompanies professional development (Burwitz-Melzer, 2018). For oral reflections, a real challenge is to grasp implicit orientations that are being narrated spontaneously and to interpret them on the fly. From a teacher educator's perspective

(Gerlach, 2020), this requires a high amount of training and looking for certain indicators of implicit knowledge.

For peer reflection as a 'social practice' (Abendroth-Timmer, 2017) to be able to grasp implicit knowledge, teachers or teacher students have to know the basic principles of implicit reflection, what to look for, and what might be important or less important. If this has been established, and the pair or group of reflective practitioners can establish an open and equal relationship among themselves, peer reflection can gain access to action-relevant knowledge and, for example, discuss mutual (or divergent) experiences that might inform all teachers taking part in this peer reflection.

4.2 Digital innovations and implicit reflection

The methods and techniques presented above and in Table 1 all have the potential to foster implicit reflection when changing the perspective slightly. A remaining question is how far these approaches might be altered through digital innovations that already have or will have an influence on language teacher education (see articles in this issue). This might be discussed on two different levels: One level is the change and innovation that occurs in teaching languages to learners. Obviously, digital tools, media, apps, and devices change the access to languages and enhance cultural exchange in dramatic ways. On this level, digital innovations do not change reflection per se. They only change the topics and media that a teacher uses to realize learning within classroom environments. The way he/she reflects on it does not necessarily change; it is rather a way of consciously dealing with new media. Clearly, the integration of digital media in language classrooms needs media competence (Knowledge 1) that might inform Knowledge 2 in terms of lesson planning and fruitful integration of these new possibilities.

The second level on which digital innovations might change teaching is when considering that digital tools might be used as enhancements of the aforementioned reflective approaches to teacher education. Spontaneous lesson reflections might be audio-recorded with a smartphone for later analysis and categorized with certain tags immediately; videos of lessons could be annotated digitally using apps; reflective portfolios might be maintained digitally (with different kinds of media), and reflective conversations with friends might be done through videoconferencing apps that eliminate the need to be present at the other person's school or office (Drexhage et al., 2016). These innovations can improve reflection approaches and add to the quality of reflection. These digital enhancements and tools, however, must have a substantial added value for implicit reflection if they are really to be transformative. To analyse an oral reflection, for instance, one might use speech-to-text software that creates a good enough (short) transcript of the reflection for analysis and interpretation of underlying orientations. If the medium or device, however, does not dramatically reduce, for example, the time needed to record and analyse reflective texts, it might not be as useful. Digital tools, therefore, might enhance these reflective processes, though they have to be evaluated critically: Can they really intensify or even transform the way teachers reflect on their teaching, tap into implicit knowledge, and therefore change language teaching? Or does the existence of digital tools endanger deeper reflection for the sake of digitization, multimedia representations, and the impression of something new and innovative? Further research and practical experience could provide important insights here.

5. Summary and outlook

The goal of this article was to outline the importance of implicit knowledge for reflection, professional action, and teacher education in general. Yet, many questions and challenges remain which are due not just to the methodologically difficult approaches of reaching implicit knowledge. The field is also challenging because of its complexities, different constructs, and schools of thought that might have different conceptualizations of reflection and reflective practice.

In contrast, researching reflection, that is, the reconstruction of implicit knowledge in order to gain a glimpse at what might be relevant for the individual language teacher, remains challenging (cf. discussions e.g. in Roters, 2012; Mann & Walsh, 2013; Schädlich, 2015; Abendroth-Timmer, 2017). Additionally, professional knowledge, especially pedagogical content knowledge, which is considered to be highly integrated and context-specific, might develop only as a result of a certain critical incident in class and, then again, might not be directly transformable into an utterance (Neuweg, 2014). The challenge for the professional is to identify the instances that might be shaped by underlying orientations and to talk about them. Reflective practice in this variant has to become more data-led and should be understood as a dialogic process that is “‘normally’ a collaborative one, involving discussion and dialogue with a colleague or ‘critical friend’” (Mann & Walsh, 2013, p. 302). Digital tools might enhance these reflective processes, though they have to be evaluated critically: Can they really intensify or even transform the way teachers reflect on their teaching, tap into implicit knowledge, and therefore change language teaching? Or does the existence of digital tools endanger deeper reflection for the sake of digitization, multimedia representations, and the impression of something new and innovative?

The premise (and promise) remains: “In nearly every profession we have studied, the centrality of forms of structured critical reflection and analysis is crucial” (Shulman & Shulman, 2004, p. 264). In any approach that tries to explain teacher professionalism or professional development, dealing with uncertainties seems to be one of the key characteristics (Cramer & Drahmman, 2019). Therefore, detailed reflective practice is vital in any setting, scenario, or approach of teacher education.

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