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A Professional Development Process Model for Online and Blended Learning: Introducing Digital Capital

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Since information and communication technologies were introduced into education, the number of courses delivered in an online or blended learning (OBL) format has increased significantly. However, not all teachers are experienced in teaching in this new digital environment. While various teacher professional development (TPD) models exist, few target OBL and teachers' change processes during professional development. Therefore, this article presents a five-phase TPD process model for OBL. The five phases of the model are (a) a need for TPD for OBL, (b) the professional development strategy, (c) the teacher change associated with OBL, (d) the recognition and appreciation of these changes, and (e) the anchoring of the changes made in the teachers' everyday practice. The model presented can offer a valuable and new approach toward TPD for OBL and introduces the notion of digital capital into TPD for OBL.

With the increased adoption of information and communication technologies (ICT) in education, an even greater number of courses are being taught in an online or blended environment. As a result, more teachers are currently in need of professional development (PD) for online teaching (Salmon, 2011). While many general teacher professional development (TPD) models exist (e.g., Consuegra & Engels, 2016; Zhao, 2010), surprisingly few target online and blended learning (OBL). Furthermore, the use of a linear approach in professional development models has been criticized due to the fact that different starting needs are at play (Weston, Clay, & Peacock, 2018).

The TPD models presented in this article vary strongly in their focus. Some models focus on teacher change (e.g., Guskey, 2002), while others focus on assessing the effectiveness of TPD (e.g., Consuegra & Engels, 2016). Even though these TPD models carry different names and have different foci, their specific TPD components are similar (e.g., Desimone, 2009; Guskey, 2002), and they often lack a clarification of the process of teacher change (Evans, 2014).We sought to address that gap by constructing a conceptual TPD process model for OBL, which is rooted in several theoretical foundations and addresses individual change.

Theoretical Foundations

The Digital Capital of Teachers

Digital capital is a fairly new concept within TPD research, although notions of social capital and cultural capital are considerably better known (e.g., Bourdieu, 1986). Seale (2013) introduced a digital capital framework rooted in the conceptualizations of cultural and social capital described by Bourdieu (1986) and Putnam (2000).

Seale (2013) argued that *digital cultural capital* can be seen as individuals or groups investing effort and time into enhancing their technological knowledge and skills by means of various forms of learning, both formal and informal. This digital cultural capital is achieved by socialization in technology use through various socialization agents (e.g., family and peers) and technocultural goods (e.g., exposure to books; see also Selwyn, 2004).

Digital social capital refers to people's networks of technological contacts and the related social support they experience (Seale, 2013). If people's cultural and social capital can influence their successful engagement with technology, then these forms of capital cannot be neglected in preparing pre- or in-service teachers for OBL. Recent research by Seale, Georgeson, Mamas, and Swain (2015) indicated that students have digital social and cultural resources that affect their use of technology.

The work of Seale (2013) and Seale et al. (2015), however, primarily targets students. The current article elaborates on the work of Seale et al. (2015), and introduces the notion of digital capital into teacher education and mainly TPD. Our thesis is that lacking an adequate level of digital capital can affect teachers' engagement with technology.

Teachers' digital capital consists of a combination of all their knowledge, skills, and attitudes, complemented by their personal and professional social networks or relationships, which influence their engagement with technology. Technological engagement is seen here as any situation teachers face in which they use or learn about technology. Digital capital entails both teachers' digital cultural capital and their digital social capital, as described earlier in this section (Seale, 2013). Moreover, the definition presented acknowledges teachers' social personal and professional networks or interactions.

Previous research showed that teachers' social networks or contacts affect their professional development experience (Philipsen, Tondeur, Pynoo, Vanslambrouck, & Zhu, 2019). Elaborating on Seale (2013) and Selwyn (2009), we see social networks or contacts as any form of interaction teachers engage in, in relation to the use of technology in their teaching. Thus, if social contacts affect teachers' technology professional development experience (Philipsen et al., 2019), and as those social contacts are embedded in the digital capital, then teachers' digital capital should be taken into account in TPD for OBL.

In other words, digital capital involves the knowledge, skills, attitudes, and networks that affect the teachers' technological engagement. Approaching digital capital from a PD perspective, one could argue that teacher change can be initiated on four levels, such as cognitive or intellectual change, behavioral change, attitudinal change, and social change.

The first three teacher change levels adhere to Evans' (2014) work, in that the internal development processes of teachers participating in a TPD relate to cognitive, behavioral, and attitudinal development. The fourth teacher change level, social change, adheres to Seale's (2013) notion of digital cultural capital and digital social capital, which stresses the importance of social influences on technological engagement.

Teacher Professional Development Models

Another important feature to consider regarding TPD for OBL is the existing knowledge concerning general TPD approaches and models. An early model of TPD that addressed teacher change was that of Guskey (2002). Guskey emphasized that many TPD programs failed to illuminate the process of teacher change. He, therefore, created a model of teacher change, and the sequence of his model is presented in Figure 1.

According to Guskey (2002), changes in teachers' beliefs and attitudes mainly occur after teachers see evidence of improvements in their students' learning. Therefore, student outcomes are accorded a pivotal role in instigating teacher change in his model. Although the work of Guskey has been reviewed critically (e.g., Coldwell & Simkins, 2011), it provides an important view on TPD. Moreover, Guskey's work contributes to the model presented in this article, along with Consuegra and Engels's (2016) model (see Figure 1).

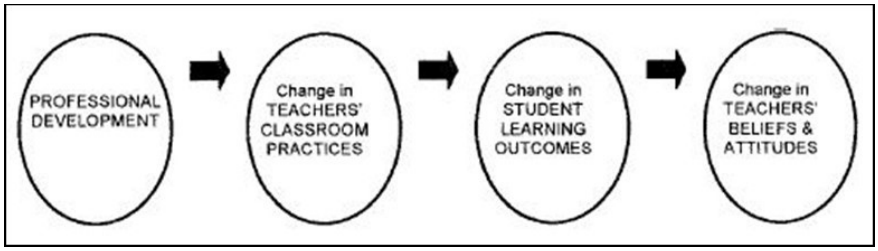

Figure 1. A model of teacher change. Reprinted from "Professional development and teacher change." by T. R. Guskey, 2002, *Teachers and Teaching: Theory and Practice, 8(3/4), 381-391*. Copyright 2002 by Taylor & Francis Ltd.

This article highlights the work of Consuegra and Engels (2016) as a second PD model. It is based on that of Desimone (2009) and van Veen, Zwart, Meirink, & Verloop (2010). Consuegra and Engels incorporated the five key features of effective TPD indicated by Desimone (2009). However, they added three additional key features, namely, ownership or responsiveness to self-identified needs and interests, an appreciative approach (i.e., strength-based rather than deficiency-based), and finally, school based (i.e., incorporated into the daily work of teachers). Similar to a more recent version of Desimone's work (e.g., Desimone & Garet, 2015), Consuegra and Engels also explicitly integrated the context wherein the TPD takes place as an important element to consider, as Figure 2 illustrates.

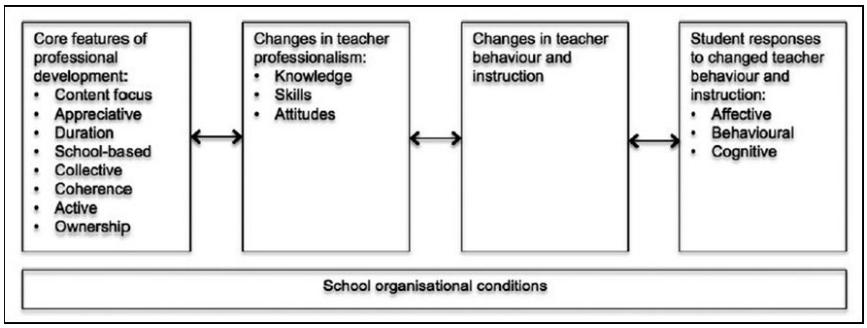

Figure 2. Conceptual framework for assessing the effectiveness of TPD. Reprinted from "Effects of professional development on teachers' gendered feedback patterns, students' misbehaviour and students' sense of equity: Results from a one year-quasi-experimental study." by E. Consuegra and N. Engels, 2016, *British Educational Research Journal, 42*(5), 804. Copyright 2016 by British Educational Research Association. Reprinted with permission.

In the TPD sequence of Consuegra and Engels (2016) a change in attitudes preceded a change in practice or instruction, albeit they also acknowledged, but to a lesser extent, the opposite. However, in Guskey's (2002) sequence, a change in instruction precedes a change in beliefs and attitudes. It remains unclear whether pre- and in-service teachers first change their instructional practices and then their beliefs and attitudes or whether they first change their beliefs and attitudes and then their instructional practices. The current research on this matter supports both approaches. Scott (2016) argued that some teachers first change their beliefs and then their practices, and that others first change their practices and then their beliefs.

The final model presented by this article is that of Evans (2014). Evans identified three main components of professional development and introduced behavioral development, attitudinal development, and intellectual development, which refer to a teacher's professional performance, work-related attitudes, and professional-related knowledge. Furthermore, Evans (2011, 2014) placed great emphasis on the recognition of teacher change, a recognition that teachers need to experience when it comes to anchoring changes in everyday practice.

Figure 3 presents Evans' (2014) componential structure of PD. The significance of Evans' (2014) work for this article is discussed later.

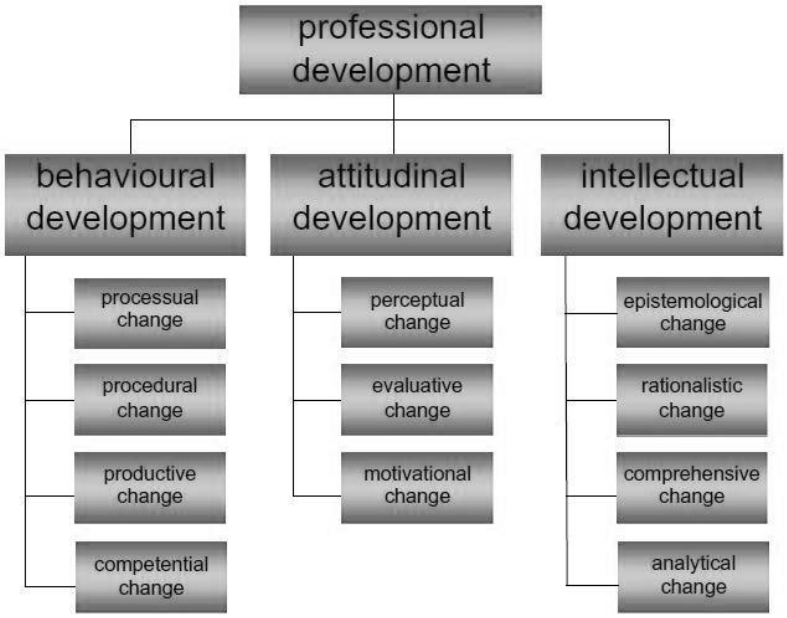

Figure 3. The componential structure of professional development. Reprinted from "Professionalism and professional development: What these research fields look like today – and what tomorrow should bring" by L. Evans, 2015, *Hillary Place Papers,* 2nd ed. (Jan. 2015), http://hpp.education.leeds.ac.uk/wp-content/uploads/sites/131/2013/11/HPP2015-2-Evans.pdf

Teacher Professional Development for Online and Blended Learning.

A question can be raised regarding what distinguishes TPD for OBL from more general TPD. At first sight, all the previously discussed traits of effective TPD appear also to be present in TPD that targets OBL (Philipsen, Tondeur, Pareja Roblin, Vanslambrouck, & Zhu, 2019). However, one possible difference is the stronger emphasis placed on the change in teacher role and teacher identity. Some general TPD approaches address teachers' professional identities and self-understanding (e.g., Kelchtermans, 2009); yet, this approach appears to be more thoroughly present and advocated for in TPD for OBL research (Philipsen, Tondeur, & Zhu, 2016; Philipsen, Tondeur, Pareja Roblin et al., 2019).

Baran, Correia, and Thompson (2011) argued that when teachers move from face-to-face to online teaching their transformational learning processes entail three dimensions: "(a) empowering online teachers, (b) promoting critical reflection, and (c) integrating technology into pedagogical inquiry" (p. 430). Recently, Philipsen, Tondeur, McKenney and Zhu (2019) also highlighted the possible benefits of implementing

teacher reflection on identity in online professional development programs for OBL. "As teachers move from traditional to online classrooms, they face constant challenges of finding their teacher-self" (Baran et al., 2011, p. 435).

Tschida, Hodge, and Schmidt (2016) argued that teachers perceive the change in role from lecturer to facilitator as the greatest change involved in transitioning to learning to teach online. Hence, current research on TPD for OBL demonstrates a clear emphasis on the teachers' self-perception and their professional identity and roles. Thus, a TPD for OBL should pay specific attention to the possible psychological changes associated with the change from face-to-face teaching to online teaching (Wang, Chen, & Levy, 2010). This approach is of *possible* use in the quest for distinguishing TPD for OBL from other TPD initiatives. Current research showed that differences can be found, such as a more profound emphasis on teachers' professional identity, but they are often marginal (e.g., Philipsen, Tondeur, Pynoo et al., 2019).

Adult Learning Theories and Professional Development

Although few TPD models specify this point, offering PD to teachers implies that one is teaching adults (King & Lawler, 2003). Adult learning theories are, therefore, worth examining when developing a TPD model.

A TPD process model that incorporates adult learning principles needs to acknowledge that adult learners are diverse and have previous experiences (King & Lawler, 2003). Adult learners must have a need to learn or need to know why they are learning before they engage in it (Knowles, Holton, & Swanson, 2015). Therefore, one needs to define or know the learning needs of adult learners before one can tell them why they are learning something.

Identifying their needs is a crucial step. "What is the purpose of this PD?" should be the first question a trainer or teacher asks (Lawler & King, 2000). Adult learners are generally more motivated to learn new things that address their current personal or professional needs (Knowles et al., 2015). Moreover, a trainer needs to establish a climate of respect because adult learners – in this case teachers – have considerable expertise and experience. Adult learners may become less confident during a PD, however, and they all have different preferences and experiences, which means that assuming that they will all be self-directed is not the best approach.

Social Construction and Professional Development for Online and Blended Learning

Professional development initiatives should acknowledge that teacher change is affected by social influences (e.g., Adey, 2006). This social effect is, in light of this article, notable on (a) teachers' knowledge construction and (b) teachers' identity construction. The importance of the latter arises from the emphasis placed on professional identity and roles in current research on TPD that targets OBL (e.g., Baran et al., 2011; Philipsen, Tondeur, Pareja Roblin et al., 2019; Tschida et al., 2016).

With regard to knowledge construction, this framework adheres to the social constructivism described by Vygotsky (1978), in which a developmental process is situated in a social context and knowledge is constructed by interacting with other people. Next to that, professional identity and role construction are important elements to bear in mind when professionalizing teachers for OBL.

Professional identity is closely aligned to Kelchtermans' (2009) notion of self-understanding. Although Kelchtermans avoided using the term identity for specific reasons, we keep the well-known notion of professional identity as an important aspect of our model presented later on. The self-understanding also emphasizes the role of social and societal influences on self-development. Accordingly, Stein, Shephard, and Harris (2011) indicated that a transition to e-learning can evoke possibilities for rethinking teachers' current teaching practices regarding professional identity and professional roles.

Moreover, Wang et al. (2011) argued that many of the changes involved in transferring to OBL relate to professional identity. Thus, many pre- and in-service teachers are teaching in a face-to-face setting and are constructing their identity and roles in a real-life setting. When teachers are asked to teach in an online format, however, all of these processes are mediated in an entirely new way, namely, in a digital way. Teachers then face the challenge of building their identity in a – partially – digital environment, which is affected by social influences.

Teachers need to understand and consider who they are as teachers and how their professional identities and roles are constructed in this new digital environment. This approach should not only enable them to consider the influence of their own perception on their identity and their role, but it should also enable them to see how their social relations, constructions, and networks affect it. Our model brings, then, together the notions of digital capital and social construction. Professionalizing oneself for OBL entails possible changes in behavior, knowledge, attitudes, and networks, and the social influences on those changes cannot be neglected.

Process of Conceptual Model Development

Prior to the development of our model, this study started by selecting a justifiable process of conceptual model development and a problem statement. The presented conceptual process model originated from an analysis of existing theories and generally followed the process of a literature review. However, conceptual articles do not contain empirically tested data – or only small amounts of it (Gilson & Goldberg, 2015). Nevertheless, such articles can still add to existing knowledge or tackle specific problems. Concept articles must use a problem-focused approach and to clearly specify the gap in existing knowledge that they are targeting.

It is important that concept articles aim to "bridge existing theories in interesting ways, link work across disciplines, provide multi-level insights, and broaden the scope of our thinking" (Gilson & Goldberg, 2015, p. 128). This article presents logical and complete arguments for the choices made, rather than by testing them empirically. A concept article can show a great

deal of resemblance to a review article, in that they both generally present a state-of-the-art overview of what is already known and the extent to which this informs and guides future research.

Conceptual Model Development

To develop the conceptual model, first the data were selected from four main databases (i.e., Web of Science, PsycInfo, Google Scholar, and ERIC), and subsequently, those articles' references were checked for other useful contributions. The key search-terms included *TPD models, digital capital, social capital, cultural capital, teacher professional identity*, and *social construction for PD*.

In order to construct the current conceptual model, a literature review (N = 15) was conducted (as recommended in Robinson & Lowe, 2015) followed by a content analysis. The content analysis was undertaken as a "data reduction and sense-making effort that takes a volume of qualitative material and attempts to identify core consistencies and meanings" (Patton, 2015, p. 541). The content analysis was guided by the following questions: (a) Which particular PD components are considered important for a TPD process model that targets OBL? and (b) How can these components be integrated into a logical design?

Second, both a manifest and a latent content analysis were used on the data (as suggested in Berg & Lune, 2014). Manifest content analysis examines "those elements that are physically present" (p. 341). For example, the general TPD models were examined on the basis of their physically present elements (i.e., the identifiable components of TPD models).

The manifest content analysis led to the identification of the process model components. The interpretation of these components – what they mean for TPD for OBL and how they can fit into a logical sequence – was conducted during the latent content analysis.

A latent content analysis "is extended to an interpretive reading of the symbolism underlying the physical data" (Berg & Lune, 2014, p. 341). For example, this analysis was conducted to construct the model presented in this article. The latent content analysis "seeks to discern meaning" (p. 341), which mainly refers to the second question guiding the analytical process, namely, "How can these components be integrated into a logical design?"

The latent content analysis was concerned with the interpretative process. If the analysis of the data or the construction of the model led to any contradictions, discussions were held with fellow researchers – acknowledged at the end of this article – until consensus was reached or further studies were examined to elucidate the contradiction (e.g., as recommended in Scott, 2016).

The Conceptual Model

This section presents the conceptual model and subsequently elaborates on how it was constructed. The conceptual model (see Figure 4) depicts a teacher's professional development process model for OBL.

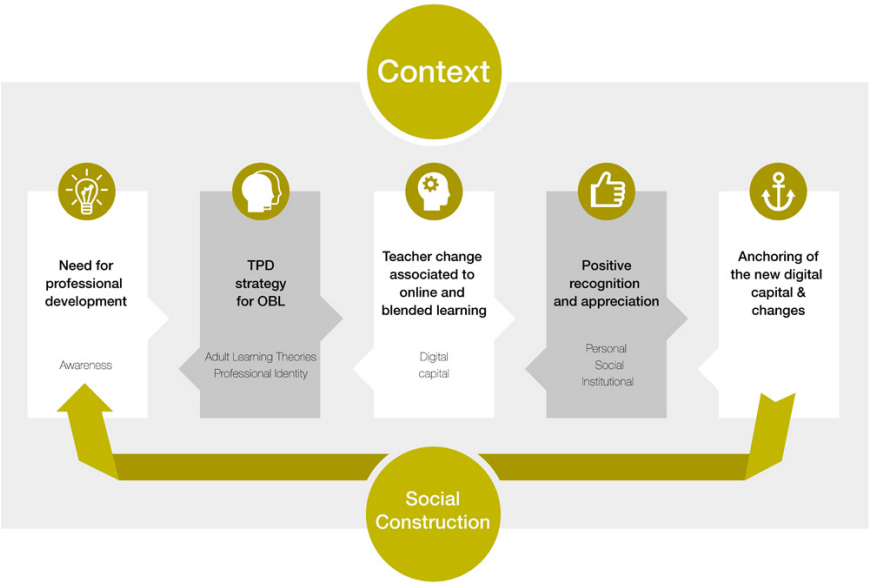

Figure 4. Teacher professional development process model for online and blended learning.

Step 1: A Need for Teacher Professional Development Related to Online and Blended Learning

This first step originated from the article's theoretical background and, more specifically, from the work of Knowles et al. (2015), King and Lawler (2003), and Philipsen, Tondeur, Pareja Roblin et al. (2019). They stated that teachers need to have a relevant PD need prior to commencing the actual PD. This step is also indicated by Clarke and Hollingsworth (2002), who argued that a stimulus must be present in the process of teachers' professional growth and development.

This stimulus can be a personal need, in which the teacher notices that his or her current practices are no longer sufficient. Another possibility is that the need arises from a policy level initiative (e.g., a school principal demands that teachers offer their courses partially online).

Step 2: The Teacher Professional Development Strategy That Targets Online and Blended Learning

The second step in the model is the actual TPD strategy for OBL. This step relates to the teacher's chosen strategy for answering the need from Step

1, and basically refers to the choice that teachers make regarding how to professionalize themselves.

There are generally two main strategies. The first is a self-study approach and the second is a formal PD program. The self-study approach occurs when teachers search for the information that will answer their PD need themselves, without participating in a formal PD program. The second strategy is a formal TPD that targets OBL. Other possibilities exist, and they may have some overlap with different approaches to TPD. If one chooses to follow a TPD program for OBL, then that program should ideally contain several elements that could make it more successful and meaningful (e.g., Philipsen, Tondeur, Pareja Roblin et al., 2019).

A TPD for OBL should incorporate the characteristics of effective TPD (Consuegra & Engels, 2016), which are based on the work of Desimone (2009) and van Veen et al. (2010). In addition, a TPD for OBL should be rooted in adult learning theories (King & Lawler, 2003). However, while these requirements are undoubtedly important, they are not unique to a TPD for OBL, but are common to all TPD approaches.

A TPD that specifically targets OBL should acknowledge the online teachers' transformational learning processes (Baran et al., 2011). Furthermore, a TPD model that targets OBL should acknowledge a possible change in a teacher's professional identity and role (Baran et al., 2011; Philipsen, Tondeur, Pareja Roblin et al., 2019 ; Tschida et al., 2016; Wang et al., 2010). Moreover, Philipsen, Tondeur, Pareja Roblin et al. (2019) presented six synthesized findings that are critical for a TPD that targets OBL and which also highlight the importance of addressing teachers' professional identities.

Step 3: Teacher Change Associated With Online and Blended Learning

The third step in the TPD process model for OBL involves the envisioned teacher change associated with the transition to OBL (i.e., changes in teachers' digital capital). These changes relate to a behavioral change, an attitudinal change, an intellectual or cognitive change, and finally, a social change. The first three change areas are based on the work of Evans (2014). The fourth change area is based on Seale et al. (2015) and Philipsen, Tondeur, Pynoo et al. (2019).

In the section describing digital capital, it is clear that a teacher's personal and professional social networks influence their technological engagement. It is possible for a teacher to get to know other teachers who face similar problems in a TPD for OBL. As a result, a teacher's network may expand by following a TPD for OBL, thus leading to a social change.

Different views exist on how teachers change. Guskey (2002) and Consuegra and Engels (2016) differed in their perception on whether teachers first change their practice and then their attitudes or vice versa. However, the section on theoretical foundations contended that this order is interchangeable. Sometimes teachers first change their attitudes and then their practice, while at other times they first change their practice and

then their attitudes (Scott, 2016). Hence, in order to acknowledge this finding, this article presents all the possible changes in the digital capital of teachers as teacher change.

Step 4: Positive Recognition and Appreciation of the Changes Made

The fourth step in the PD process model for OBL is the positive recognition and appreciation of the changes made. In this respect, this model distinguishes between personal and social recognition and appreciation. Personal recognition and appreciation consists of a situation in which an individual teacher experiences the changes made as an improvement on the previous situation. This definition is consistent with the view of Evans (2014), who highlighted the value of individual recognition. Second, there are also social forms of recognition and appreciation. For example, a certain change by a teacher may not have much personal value, but may be appreciated by the school leaders or school management, which gives the teacher a reason to maintain the changes made.

Step 5: Anchoring of the Changes in Teachers' Everyday Practice

If changes are recognized and positively appreciated, they become anchored in the teachers' daily practices. After some time, the teachers may identify new PD needs for OBL, and the process might start again.

External Factors

Two elements are at play throughout the entire process that should be taken into account, namely, social construction and context. These elements are related to the theoretical foundations of this model, particularly the work of Adey (2006), Consuegra and Engels (2016) and Philipsen, Tondeur, Pynoo et al. (2019). Adey (2006) argued that TPD should acknowledge social construction due to its positive effect on teacher growth. Furthermore, Philipsen, Tondeur, Pynoo et al. (2019) showed that social interactions influence teachers' PD experience. Thus, the effect of social influences on teachers' technology engagement and their digital capital cannot be neglected.

In addition, a TPD for OBL should also take the current context into consideration (Consuegra & Engels, 2016; Philipsen, Tondeur, Pareja Roblin et al., 2019) due to the uniqueness of each PD situation. These two elements are important throughout the whole TPD process, and they are, therefore, placed as external factors around the other phases.

The Theory of Change and the Theory of Instruction

As van Veen et al. (2010) emphasized, studies on TPD appear to lack a clear theory of change and a theory of instruction. The former is concerned with how the TPD will affect a teacher's teaching practice, while the latter is concerned with how the TPD will affect the students' learning. As discussed earlier, this article mainly targets the theory of change.

Nonetheless, it is important to think about how the proposed TPD model might affect students' learning.

Based on the model presented, teacher change can be influenced by several factors during the process of professional development. First, teacher change can occur only when a clear need to change exists, and professional development strategies should target this need in an efficient way. Second, embedding the TPD in adult learning theories can enhance teacher change (Knowles et al., 2015). Third, acknowledging social influences and incorporating social construction can evoke teacher growth (e.g., Adey, 2006; Philipsen, Tondeur, Pynoo et al., 2019). Finally, sustainable teacher change requires positive recognition and appreciation of the changes made.

Regarding the theory of instruction, teachers need to be able to create the best possible learning environments for their students. The actual learning of any learner ultimately remains the learner's own responsibility, which means that teachers cannot directly control student learning itself. However, they can stimulate it by creating meaningful and effective learning environments. Therefore, the theory of instruction means that improved teaching practices originating from the PD can stimulate students' learning, as argued by Desimone (2009) and Darling-Hammond, Hyler, and Gardner (2017).

The Conceptual Model Vis-á-Vis Existing Literature

The increase in online and blended courses means that more teachers are now being asked to deliver (some of) their courses in an online environment (Salmon, 2011). Given that teaching skills in an online environment differ from those in a face-to-face environment, teachers need to be trained to teach in an online or blended environment (see also Tschida et al., 2016). Although many general TPD models have been proposed (e.g., Desimone, 2009; van Veen et al., 2010), few models target the TPD process for OBL. Therefore, this study constructed a conceptual process model for the TPD process for OBL. The model aims to elucidate the process that teachers go through when they professionalize themselves for OBL.

Although the model targets OBL, it may also be relevant to general TPD approaches. Contrasted to more general TPD approaches (e.g., Consuegra & Engels, 2016; Desimone 2009), student outcomes or student responses are not specifically represented as the ultimate outcome of TPD in the model presented in this article. Student learning and student outcomes are undoubtedly highly important factors to consider with regard to TPD and, therefore, also when the TPD is directed at OBL. However, teacher change is a legitimate end in itself in studies on TPD, irrespective of changes in student learning (Evans, 2014).

The study presented here, therefore, does not depict increased student outcomes as the final step in the sequence. For example, TPD strategies for OBL that have the sole effect of increasing a teacher's confidence when teaching in an OBL environment are justifiable. However, this does not

imply that student outcomes are not seen as an important element to take into account as a possible effect of TPD.

This article was written in a Western European context, and in this respect, TPD may be perceived or approached differently from an American approach, which is accordingly highlighted by Evans (2014). Evans argued that an American approach to TPD would probably envision heightened student performances as the end result of TPD (e.g., Desimone, 2009), while in a European context the end result could be considered teacher change (Evans, 2014). Therefore, knowledge of the context in which a study on TPD occurred will enable understanding of why certain foci were chosen. This emphasis on the importance of contextual factors within TPD research is supported by the more recent work of Desimone and Garet (2015).

As this article has introduced, one can question what differentiates the process of TPD for OBL from a more general TPD. However, the notion of general does not cover the peculiarities of other TPD approaches. The specific changes involved in teachers changing to OBL mean that one can legitimately ask what makes this process of change different from other TPD approaches.

In a TPD that targets OBL, the content taught does not necessarily change, but rather the mode by which that content is taught. The difference may lie in a greater need to address the personal and professional changes of teachers who change their teaching mode to teaching in an OBL environment (e.g., Tschida et al., 2016; Wang et al., 2010). Nevertheless, recent research strongly emphasizes the importance of examining teachers' identities and change processes in all kinds of TPD (e.g., Boylan, Coldwell, Maxwell, & Jordan, 2017; Hsieh, 2014). Thus, it is promising that earlier (e.g., Beijaard Meijer, & Verloop, 2004) and contemporary approaches to TPD (e.g., Boylan et al., 2017; Philipsen, Tondeur, Pynoo et al., 2019) both value the examination and integration of teachers' professional identities in TPD research.

With regard to the specific traits of a TPD for OBL, this article introduced the notion of digital capital in relation to PD processes and teacher change. Originating from the work of Selwyn (2004) and Seale (2013), the notion of digital capital presented here provides a useful lens to examine teachers' behavior and their engagement with technology. Digital capital can affect how teachers behave in an online environment and how they behave in a PD for OBL.

The significance of digital capital lies in its holistic approach. It not only integrates skills, knowledge, and attitudes, but also the social networks and relations related to the use of computers and technology. Seale et al. (2015) indicated that students do not always have the required digital capital or do not make use of their digital capital (e.g., social resources) when it comes to the use of technology. They indicated that this can eventually affect their actual technology use (Seale et al., 2015). This article elaborates on that finding, and suggests that this can also be the case with teachers. When teachers do not have the required digital capital, or when they do not use all the possibilities for improving their digital capital, this can affect their engagement with technology.

Suggestions for Further Research

As this is a conceptual model, it has not yet been tested empirically. Moreover, ways the model can be used practically were not examined due to space restrictions. Further research could, therefore, examine how this conceptual model can be improved and implemented and how it might contribute to practitioners' and researchers' thinking on TPD processes for OBL.

In addition, more research is needed that investigates the change processes of teachers throughout a TPD for OBL program. Current literature has shown that linear TPD models might be questionable due to different starting needs with teachers (Weston et al., 2018). However, the model presented in this article is, in essence, a linear model that may be feasible because it takes those different teacher needs as a starting point. The process that subsequently is described (i.e., the choice of strategy, etc.) is a possible logic consecutive model. However, it is not the only possible model.

Conclusion

This article contributes to the existing knowledge on TPD processes for OBL in several ways. Firstly, it focuses strongly on OBL and introduces the notion of digital capital into TPD for OBL. It is not only the teacher's own knowledge base that determines how he or she will teach in an OBL environment, but also the OBL-related connections and networks, together with societal dispositions toward OBL.

Second, the article contributes to the debate regarding how the TPD process for OBL may differ from other TPD approaches. It seeks to highlight the uniqueness of a TPD process for OBL. The article's third contribution is its holistic approach to the TPD process for OBL. In keeping with the goal of a concept article described by Gilson and Goldberg (2015), the model and its foundations target new relationships and connections between existing various concepts, and it seeks to construct logical and well-argued choices.

Our model not only seeks to elucidate the important phases of TPD for OBL, but it also targets the personal process of teacher change within TPD for OBL. As Evans (2014) noted, this last feature is often missing in TPD literature. Finally, the model presented in this article can serve as an important addition to a previously developed model (Philipsen, Tondeur, Pareja Roblin et al., 2019).

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