Applications of Vygotsky’s sociocultural approach for teachers’ professional development

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Abstract: This paper outlines an approach to teachers’ professional development (PD) that originates in Vygotsky’s sociocultural theory (SCT), arguing that what Vygotsky claimed about students’ learning in the school setting is applicable to the teachers and that the developmental theories of Vygotsky resting on the notions of social origin of mental functions, unity of behavior and consciousness, mediation, and psychological systems can help more vividly understand the professional growth of teachers in their work places. The paper discusses how the seven influential models of professional development mostly coded in the literature namely: mentoring, observation/assessment, scaffolding, inquiry/action research, individually guided activities, study groups, and involvement in a development process can be best grounded in Vygotsky’s theoretical framework. It is claimed that the commonality that interweaves the aforementioned models is Vygotsky’s concept of “social mediation”. Finally, the paper concludes with a discussion of the various implications of the proposed approach for designing and implementing teacher professional development by linking the developmental aspects of professional development and core tenets of Vygotsky’s developmental theories.

Subjects: Initial Teacher Training; Newly Qualified Teachers; Teaching & Learning; Teacher Training

Keywords: teacher professional development; Vygotsky; Mediation; sociocultural theory

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PUBLIC INTEREST STATEMENT
Vygotsky’s learning theories seem to be paramount to the existing models of learning and development due to its pursued multidimensional approach which pays special heed to the cognitive, affective, social, and contextual aspects of change. This paper examines the concept of social mediation as the missing link between Vygotsky’s learning theories and existing models of teachers’ professional development. A wide range of tools at the novice teachers’ disposal to turn into a professional and expert teacher are presented including professional journals, newsletters, online forums, Internet, computer and associated software, internship or practicum as either internal or external sources of scaffolding. Finally, implications of the raised concepts for designing and implementing teachers’ professional development in the workplaces are discussed.
1. Introduction

As a strong advocate of Sociocultural Theory (SCT), Vygotsky (1978/1995, 1981) sought the analysis of human's mental development at four levels, namely: (a) the sociocultural domain which concerns mediation and the different kinds of mediational tools adopted and valued by society; (b) the ontogenetic domain which studies the appropriation of mediational tools and how they are integrated into cognitive activity during the processes of an individual's development; (c) the phylogenetic domain which concerns the evolutionary development of human's mental organisms across generations; and (d) the microgenetic domain which focuses on the moment-to-moment co-construction of language and language learning during interspsychological activity over a short span of time. This paper intends to find relations between Vygotsky's views on the concept of learning/development and the existing models of professional development and sketch the implications of this approach for designing and implementing early teachers' professional development. From among the numerous models of professional development existing in the literature, the classification proposed by Guskey (2000) was selected due to the commonalities the proposed models share with Vygotsky's theories of development and their underlying emphasis on the concepts of development and social interaction as the cornerstones of professional change and growth.

2. An overview of Vygotsky's sociocultural theories of development

Vygotsky's SCT of mind represents a seminal, well-established theory in developmental psychology which offers the most robust account of mental development to date (Lantolf, 2008; Vygotsky, 1998). Three seminal ideas form the basis of Vygotsky's SCT: (1) an emphasis on developmental or genetic analysis as a means to understand certain aspects of mental functioning; (2) the claim that individual mental functioning has social origins; and (3) an emphasis on the mediated nature of human action (Wertsch, 1991, p. 25). Implications of Vygotsky's SCT for understanding such concepts as knowledge and learning are profound.

First and foremost, Vygotskian thinking indicates that the origin of knowledge construction should not be sought in the mind but in the social interaction co-constructed between a more and a less knowledgeable individual (Lantolf, 2008). Moreover, the construction of knowledge is a socioculturally mediated process affected by the physical and psychological tools and artifacts (Lantolf, 2004). Walqui (2006, p. 160) lists the following assumptions as the core tenets underlying Vygotsky's SCT:

1. Learning precedes development.
2. Language is the main vehicle (tool) of thought.
3. Mediation is central to learning.
4. Social interaction is the basis of learning and development. Learning is a process of apprenticeship and internalization in which skills and knowledge are transformed from the social into the cognitive plane.
5. The zone of proximal development (ZPD) is the primary activity space in which learning occurs.

Another major concept reflecting Vygotsky's developmental theories is the notion of unity of behavior and consciousness. The integration of behavior and consciousness or the unification of mind and social interaction is a major characteristic of Vygotsky's developmental theories because it defines precisely what constitutes human development. Vygotsky (1987) made a clear distinction between biological forms of development and sociohistorical forms of development. He argued that biological maturations that unfold with time do not constitute development per se; they should lead to new forms of behavior or social interaction.

A fundamental assumption underpinning SCT is the fact that human mental activity is a mediated process in which symbolic and socioculturally constructed artifacts, the most significant of which being the language, play an essential role in the mental life of the individual (Vygotsky, 1978/1995). Learning as a mediated process is social in origin and then becomes individual as a result of linguistically mediated interaction between the child and more experienced members of the society including parents,
teachers, and peers (Vygotsky, 1978/1995). The concept of mediation suggests that human relations with the world are not direct but “mediated” by physical and symbolic tools. The following excerpt from Lantolf (2001) fully captures the essence of mediation in human’s mental development:

The central and distinguishing concept of sociocultural theory is that higher forms of human mental activity are mediated. Vygotsky argued that just as humans do not act directly on the physical world but rely, instead, on tools and labor activity, we also use symbolic tools, or signs, to mediate and regulate our relationships with others and with ourselves. Physical and symbolic tools are artifacts created by human cultures over time and are made available to succeeding generations, which often modify these artifacts before passing them on to future generations. Included among symbolic tools are numbers and arithmetic systems, music, art, and, above all, language. As with physical tools, humans use symbolic artifacts to establish an indirect, or mediated, relationship between ourselves and the world. The task for psychology, in Vygotsky’s view, is to understand how human social and mental activity is organized through culturally constructed artifacts and social relationships. (80)

As is clear from the preceding quote, from a sociocultural perspective, learning is a socially mediated process influenced first and foremost by different modes of semiotic tools, the most important of which is the language. Social mediation together with dialogic negotiation triggers higher forms of human’s mental functioning.

The fourth distinct property of Vygotsky’s (1987) development theory is that it assumes new interrelationships among the different individual functions of the mind, i.e. the formation of a new psychological system. He argues that the individual functions of perception, memory, and thinking in childhood through ontogenesis do not act separately from each other but there are interrelationships among them. For example, the interrelationship between memory and thinking leads to the creation of logical memory.

Eun (2008, p. 139–140) contends that Vygotsky’s theory of development differs from the existing theories and even the social interactionist frameworks (e.g. social learning theory) in several ways. Whereas other theories also recognized the process of social interaction to be essential in driving development, Vygotsky took a step further to maintain that psychological functions themselves are inherently social, viewing behavior and mind or social interaction and consciousness as aspects of a single system. In this perspective, the process of transformation does not occur independently, instantly, or automatically. The transformation of social behavior from the intermental to the intramental (i.e. the process of internalization) is a complicated and prolonged process that requires engagement of two or more people in a practical activity. The prefix inter in the word intermental already presupposes there are more than one person or rather, one mentality. Therefore, social interactions, or collaborative engagement in activities, that cease before internalization occurs may not contribute to development. The social interactions must be framed within an activity that has a clear purpose. In order for social interaction to lead to development, it has to be situated in activities that have a clear goal, such as joint problem-solving activities. Vygotsky’s theory explores not only the individual functions, but their interrelationships with other functions. It examines the change in interrelationships among individual functions in the formation of new psychological systems. This theory underscores the social situation of development, that is the context in which social practices or activities occur. For example, in the school setting, the children are exposed to activities specific for classroom lessons and instructional practices, their everyday thinking based on experience changes to form what is termed “scientific” or “true” concepts.

3. Models of professional development

Browsing the literature on professional development, one could find a large number of PD models to account for learning and development. The following paragraphs provide an overview of the most influential ones.

McLaughlin (1987) presents an information processing model of development and defines it as gaining mastery over some psychomotor skills which are fraught with errors at the novice stage and
become subconscious, automatic, fluent, and effortless when the person gets to the advanced stage as a result of practice. Learning is the result of transition from controlled to automatic processing via practice.

Dreyfus and Dreyfus (1986) proposed a heuristic model to define learning as a five-stage progression from novice to expert. They argued that intuition, tacit knowledge, and “knowing how” lie at the core of human learning and conscious operation or “knowing that” is absent in professional practices. The model comprises the following stages:

• **Stage 1: Novice**

The novice’s actions are guided by rules and a set of objective facts and features related to the skills. There is little consideration for the context of the actions.

• **Stage 2: Advanced Beginner**

After getting some experiences in applying the rules in real situations, they begin to recognize situational elements that they need to consider from their actions.

• **Stage 3: Competent**

Competent performers are able to cope with an overwhelming amount of information and assess the situations and distinguish important from unimportant information. They are also emotionally involved with the outcome which can rarely be observed in novices and advanced beginners.

• **Stage 4: Proficient**

This stage is marked by the emergence of intuitions or know-how (procedural knowledge). Proficient performers are able to act without conscious deliberation since they can recall similar situations in the past and the course of actions taken that were proved effective.

• **Stage 5: Expert**

Expert’s performance is marked by effortlessness and fluidity guided by intuition. Skills become part of experts. There is no need for conscious decision-making or problem-solving unless a novel situation is encountered.

(Adapted from Tsui, 2003, pp. 10–11).

Guskey (2000) categorizes the models of professional development into seven types, which are as follows:

*Training*, which implies the use of a presenter or a team of presenters to transfer its concepts and expertise through a number of activities like large group presentation and discussions, seminars, colloquia, workshops, demonstrations, role-playing, simulations, and micro teaching.

*Observation/assessment* is a form of professional development through which two colleagues learn from each other’s observation and on-the-spot feedbacks.

*Mentoring* is a concept which involves interactions between an experienced and highly successful (expert) educator and a less experienced (novice) colleague.

*Inquiry/action research* can provide the ground for the teacher learner to test different teaching methods and activities in the class and get feedback from the students so as to revise and develop
his underlying understanding of language teaching and learning processes. As an exercise of reflective teaching and a point of departure from acing as a consumer of an outside expert, action research provides an \textit{inside-out} approach to professional development placing the teacher at the heart of teaching inquiry (Nunan, 2001).

Oxford (2001) considers action research as a tool to elicit information about the students’ language and cultural background, motivation, gender, age, preferences, learning strategies, and styles so that teachers can provide strategy instruction that the concerned students need. Through action research, the teacher can test different theories of language teaching in his class to see if they work and finally get feedbacks from the students. Action research can provide a tool for the teacher to make a link between his theoretical and practical knowledge advocating a more active role for the teacher and, hence, a step toward teacher autonomy (Kumaravadivelu, 2001).

Individually guided activities help the novice teachers experience expertise at the individual level. For example, as a reliable method to receive feedback from the students, questionnaire can provide the teacher with immediate, first-hand information about the quality of his teaching and the need to change or improve his teaching style and behavior. Kumaravadivelu (2001) regards “action research” as an effective way to develop teacher’s professionalism and as a site for self-exploration and self-improvement. He presents the following suggested ways to embark on action research:

1. using questionnaire, surveys, and interviews to collect data about learning strategies, styles, attitudes, etc.
2. identifying research questions
3. exploring the learners’ sociocultural and linguistic knowledge to exploit for learning; and
4. engaging in self-evaluating

\textit{Involvement in a development process and study groups} serve as two models of professional development which provide educators with a chance to gain new knowledge and expertise as well as opportunities to deal with educational problems by forming groups, having collaboration with peers, conducting research, or engaging in discussions. These types of professional development look upon the school setting as learning communities where teachers and learners are jointly involved in learning.

4. \textbf{Interfaces between Vygotsky’s theories and models of professional development}

The assumption here is that what interweaves Vygotsky’s SCT-based concepts and many models of professional development is the emphasis they place on the notion of “development” and their conception of “social interaction” as the main instigator of human developmental changes.

The model of professional development based on training implies that teacher development occurs through presentations and internship/practicum. The trainees receive ample ready-made experience from the trainers and teacher educators. Singh and Richards (2006) express the need for holding practica and internship to help the novice teachers gain a more vivid understanding of the norms of good educational practice. They emphasize the explicit teaching of TESOL discourse to novice teachers before and during professional development. Familiarizing the teachers with the required teaching notions currently in vogue among teachers and TEFLists would apprentice the novices into advanced professionalisms. By the TESOL discourse, the authors mean the dominant discourse of TESOL (e.g. learner-centeredness, learner autonomy, authenticity, genuine language, accountable learning, and some version of communicative methodology and the four skills, ways of acting, and interacting (e.g. how to be a teacher learner on an MA course in the US, UK, Australia, or elsewhere), acquiring the appropriate cultural practices in the course room (e.g. how to write a term paper in the appropriate style; how to pose questions and respect different points of view), and enacting the identity of a teacher learner (Singh & Richards, 2006). According to Freeman (2001), the novice teachers could construct personal theories of language teaching with reference to their
fledgling content and pedagogical knowledge, their own previous experiences of language learning, cognitive and thinking skills, and beliefs. This tendency toward teacher education would help them acquire professionalism.

The mentoring model is closely related to Vygotsky’s revolutionary concept of the ZPD. The concept of ZPD implies that a less knowledgeable person (i.e. learner, novice, and/or tutee) gets engaged in developmental changes through interaction with a more significant other which can be a mentor, teacher, teacher educator, trainer, observer, and so on. The more significant other pushes the novice into the most proximal level of development while providing the attuned assistance. According to Ohta (2000), the roles of novice and expert during class activity are in the state of flux, that is the novice peer can also become an expert when s/he contributes his/her knowledge, though in piecemeal, to a learner. This idea had been emphasized earlier by Lantolf and Pavlenko (1995) who noted that “individuals, none of whom qualifies as an expert, can often come together in a collaborative posture and jointly construct a ZPD in which each person contributes something to, and takes something away from, the interaction” (Lantolf & Pavlenko, 1995, p. 116). Put it differently, during collaborative activity, novices teach and learn from each other.

The model of mentoring is based on the premise that the observed teacher makes use of the observer’s feedback to improve his or her teaching practices and the observing teacher/educator has the opportunity to closely examine and reconsider aspects of teaching that were skipped when engaged in one’s own teaching. Such a mentoring support is more aptly referred to as scaffolding in Vygotsky’s developmental theory. When providing the support or “scaffold”, the more capable member is not just responsible for leading the novice to enter into the learning activity with the novice standing passive to only benefit from the support but that like the mother–child dyads both members are actively engaged (Donato, 1988). Indeed, the type of scaffold offered depends on the quality of interaction between the expert and the novice. Through dialogic negotiations, the novice clues the expert onto his actual level of development in an atmosphere of cooperation (Rogoff & Gardner, 1984). In the classroom context, the assistance unfolds in the form of “collective scaffolding” (Donato, 1994), an idea that explains the dynamics of cooperative interaction between the teacher (expert) and students (novices). Inside the class, each member may contribute only partially in completing the task but this partial knowledge from each member combines together under the teacher’s online guidance to achieve complete understanding and accomplishment of the task. The idea of collective scaffolding grounded in Vygotskian thinking suggests that the group ZPD is larger than the individual ZPD, meaning that what a group of trainees can do together is much beyond what each individual can do alone.

The model of involvement in a development process suggests that trainees acquire different skills and knowledge through collaboration with peers. From Vygotskian perspective, the group members can provide collective scaffold for each other to remedy their instructional problems. They engage in conducting collaborative research and discussions.

The two models of study groups and inquiry/action research suggest that cognitive development occurs in social interactions. More precisely, Vygotsky (1978/1995) contends that only concrete social interactions which are embedded in purposeful activities and directed at achieving specific goals result in higher social functions. The scaffolds received at the intermental levels will later on transform into intramental psychological functions.

The model of individually guided activities reflects Vygotsky’s contention that all human thinking processes are social in origin and occur at first on the intermental plane. Bakhtin (1981) argues that human consciousness is by nature dialogic and then through interactional activities will become internalized. According to Guskey (2000), individually guided activities result in self-analysis and personal reflection. Examples of such activities are video/audio self-assessment, conducting personal
histories, and journal writing. The teacher trainee engaged in this type of professional development can observe and critically assess his or her own activities through the eyes of an outsider.

5. Implications for designing and implementing professional development

It is assumed that by grounding the models of professional development in Vygotsky’s theoretical framework, we could make a number of sound predictions about the realization of teachers’ professional development in actual educational contexts. The following predictions are based on the commonalities existing between the two perspectives (Table 1).

The first implication regards the social nature of professional development. It was argued that higher thinking processes needed for optimal professional practices are inherently social and start at the intermental level between and among people. Hence, for professional development to get realized, the teacher should participate in social activities and groups. The teacher’s ZPD as a learning space between his present level of teaching knowledge consists of his/her content (theoretical) and pedagogical knowledge and skills and his next (potential) level of knowledge to be attained with the support of others (Blanton, Westbrook, & Carter, 2005; DuFour, 2005). The teacher educator as the more knowledgeable partner provides the scaffolding and they engage in mutual professional change. The program designer of professional development should identify the needs and goals of the teacher trainees so that the less knowledgeable trainees can move up through higher stages of ZPD functioning under the supervision of more knowledgeable trainers. Mentoring and peer coaching are the examples of procedures through which the novice teachers could experience professional development under a more significant other’s supervision and collegiality. The school principals and authorities in the ministry of education could have second thoughts on designing specific PD programs during which novice teachers are given opportunities to benefit from one another’s contributions, knowledge, and experiences.

The second implication is that there should be sufficient time for the teacher learner to gain professional development. Professional growth does not occur overnight; it is a prolonged and time-consuming process which gets realized after several trials and errors. The novice teachers need to test their newly gained skills and ideas in actual settings and reflect upon applicability. Attending in-service workshops, language teaching education (LTE) course rooms, and conferences could serve as a crucible for the novice teachers to continually test and change their emerging pedagogical concepts and practices and, in this way, sustain their professional development. The pre-/in-service teachers who aspire to experience professional development could benefit from a range of options such as diary writing, electronic dialog journal, collaborative peers and mentors, TESOL discourse, conferences and workshops, and technological scaffolding so as to bring about a lifelong professional change in their ZPD.

The third implication concerns the importance of external support or follow-up scaffolding after experiencing professional development. Like learning, professional development is a continuous and never-ending process. The teachers need in-service training after they have gone through professional development and when they are placed in their sociocultural instructional contexts. From

| Key theoretical concepts       | Related professional development practices                                                                 |
|-------------------------------|---------------------------------------------------------------------------------------------------------------|
| Social interaction            | Workshops, colloquia, seminars, mentoring, and/or study                                                     |
| Internalization               | Individually guided activities (video self-assessment; journal writing)                                       |
| Mediation                     | Continuous follow-up support that includes the three types of mediators: Tools (material resources); signs (newsletters and journals); and other humans (professional networks) |
| Psychological systems         | Development of professional development programs that focus on changing teachers’ attitudes as well as instructional practices |

Source: Eun (2008, p. 144).
Vygotskian perspective, teachers’ learning is a mediated process which is affected by tools and signs. The tools in the form of expert guiding and assistance as an external source of mediation and signs as an internal source of mediation help the teacher extend his ZPD. Therefore, during follow-up professional development, the external mediators such as the teaching materials, textbooks, classroom equipment, and internal mediators like professional journals, newsletters, and online forums can significantly affect the teachers’ ZPD progression (Eun, 2008). Technology has proved to serve as a reliable source of electronic scaffolding and, thus, a positive change in teacher’s professional development. Internet, computer, and associated software known as technological artifacts can mediate teacher’s learning (Lantolf, 2004).

The fourth implication regards the mutual benefits of participating in the internship or practicum for both mentoring and mentored teachers. Through sharing the instructional problems and challenges with each other, the teacher participants are provided with an opportunity to reach intersubjectivity, i.e. a temporary shared social world to jointly understand and deal with a task and in this way restructure their preexisting thoughts and behaviors (Wertsch, 1985). In this regard, Rogoff (1990) notes that guided participation being either implicit or explicit would involve the learner and tutor in a collaborative process whereby the learner’s current level of understanding is linked to a new level.

A connection between mentoring model and Vygotskian perspective with respect to how best to trigger professional development is found in Love and Wenger’s (1991) concepts of communities of practice (CoP) and legitimate peripheral participation. Love and Wenger (1991, p. 96) define CoP as “groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly”. It is suggested that the teachers in their schools make their own CoP and brainstorm their field-tested problems. The notion of legitimate peripheral participation (McAfferty, Jacobs, & Da Silvaddings, 2006, p. 12) holds that “learning occurs as newcomers fulfill various peripheral roles alongside more experienced or competent members of the community as they gradually become able to fully participate”. At the outset, the novice teachers stand in the periphery making their minor contributions at their best but by lapse of time and acquiring more expertise, they will able to move toward the center of the community of practice and behave like more knowledgeable old-timers. This movement from the periphery toward the center reflects the teachers’ growing competence and ZPD progression. Likewise, the expert teachers could offer their scaffolds and experiences to the novice teachers and help them transform into experts.

Finally, a significant contribution of Vygotsky’s sociocultural view to teachers’ professional development is its emphasis on role of social context. Wenger (2007) argue that learning in educational context does not occur in a social vacuum but is seen as a set of social practices situated within specific classroom. The teachers’ psychological functions, skills, competence, knowledge, and their attitudes toward students are shaped in the context in which they are teaching. Hence, when designing a program of professional development, one should consider the existing contextual factors.

6. Conclusion
Following Kozulin and his colleagues (Kozulin, 2003; Kozulin, Gindis, Ageyev, & Miller, 2003), this paper was based on the assumption that what Vygotsky claimed about child learning/development is applicable to the adults and teachers’ professional training because, according to Eun (2008), the overall process inherent in learning and development is essentially the same for both adults and children.

A rudimentary concept rooted in Vygotsky’s sociocultural theory was the ZPD, an idea that explained the learning process and developmental changes in children. It was argued that it is possible to extend Vygotsky’s concept of ZPD from the school settings to the adults and, more specifically, language teachers and describe how best the teachers can pass through ZPD stages and gain professionalism. An attempt was made to make connections between models of professional development and developmental theories of Vygotsky and to derive theoretical implications for an effective realization of professional development in teachers.
An important feature highlighted in this paper was the superiority of Vygotsky's sociocultural theory over the existing ones because it takes into consideration almost all the relevant factors essential for teacher development including cognitive, affective, social, and contextual. The SCT perspective amalgamates the different models of professional development into one single unified framework that has a predictive and explanatory power to account for multifarious aspects of teacher development in diverse sociocultural settings (DiPardo & Potter, 2003). The paper made an attempt to present a unified theoretical foundation to explain the inherent mechanism underlying human development and learning, a theoretical gap which pervaded the related literature. A crucial advantage of Vygotsky's approach to professional development over the existing models is that it attempts to surface the gap between theory and practice and unlike the previous models which highlight the practical issues, Vygotskian approach embraces both the theoretical and practical aspects; it makes connections between theory and practice by explaining the complex mechanisms of learning processes in actual sociocultural contexts. Moreover, it highlights the critical role of follow-up support systems in sustaining the effectiveness of teacher education.

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