NARRATIVES AS MEDIATIONAL TOOLS FOR CONCEPT DEVELOPMENT

NARRATIVAS COMO FERRAMENTAS DE MEDIAÇÃO PARA O DESENVOLVIMENTO DE CONCEITOS

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ABSTRACT: Drawing on sociocultural theory (VYGOTSKY, 1987), which emphasizes that learning and development are situated dynamic processes which occur through social relations, the present study aims at investigating the development of concepts by student-teachers through narratives documented in a portfolio for initial teacher education. This qualitative work is part of a microgenetic study which took place during an elective course in a *Letras – Inglês Licenciatura* undergraduate program at a federal university in the Southern Brazil. The participants were asked to keep a portfolio in which they would record information regarding their development within the context of the course. In addition, all their interactions with teacher educators and peers during the lessons were video recorded in order to be related to their narratives. Results indicate that the use of narratives as mediational tools encouraged the student-teachers to reflect on their learning experience during this course. They made use of the portfolio to describe and to make sense of new concepts they were exposed to during their lessons, which helped the student-teachers to regulate their own thinking and to internalize new concepts, reinforced the notion that concept development indeed follows a twisting path (VYGOTSKY, 1986), and promoted integration between scientific concepts and situated understandings and practices.
Keywords: Narratives; concept development; teacher education.

RESUMO: Com base na teoria sociocultural (VYGOTSKY, 1987), que enfatiza que aprendizagem e desenvolvimento são processos dinâmicos e situados que ocorrem por meio das relações sociais, o presente estudo tem como objetivo investigar o desenvolvimento de conceitos por alunos-professores através de narrativas documentadas em um portfólio de formação inicial de professores. Este trabalho qualitativo é parte de um estudo microgenético realizado durante uma disciplina optativa de um programa de graduação em Letras – Inglês Licenciatura em uma universidade federal do sul do Brasil. Os participantes foram solicitados a manter um portfólio no qual registrariam informações sobre seu desenvolvimento no contexto do curso. Além disso,

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todas as suas interações com os educadores e colegas durante as aulas foram gravadas em vídeo para serem relacionadas às suas narrativas. Os resultados indicam que o uso de narrativas como ferramentas de mediação estimulou os alunos-professores a refletir sobre sua experiência de aprendizagem ao longo do curso. Eles utilizaram o portfólio para descrever e dar sentido a novos conceitos aos quais foram expostos durante as aulas, o que ajudou os alunos-professores a regular seu próprio pensamento e a internalizar novos conceitos, reforçou a noção de que o desenvolvimento de conceitos realmente segue um caminho sinuoso (VYGOTSKY, 1986) e promoveu a integração entre os conceitos científicos e entendimentos situados e práticas.
Palavras-chave: Narrativas; desenvolvimento de conceitos; formação de professores.

1 Introduction

Following changes in the field of language teaching and learning, second language teacher education (SLTE) has replaced its behaviorist view by a sociocultural perspective on teacher learning (FREEMAN, 2016). Teacher-learners are now seen as producers of knowledge based on their experiences and interactions in a variety of contexts; they are actively involved in the process of understanding new knowledge.

In consonance with these changes, Vygotsky's sociocultural theory (VSCT) has become one of the most well-accepted theories in the field of SLTE. VSCT describes human learning as a socially mediated process, where social interaction plays a fundamental role in the development of cognition (VYGOTSKY, 1978). Vygotsky's theory of mind can help understanding teachers' professional development and growth, and the notions of mediation (the indirect relationship we establish with ourselves and the world), self-regulation (a form of mediation in which we can regulate our own activities), the Zone of Proximal Development (ZPD) (the difference between what an individual can achieve alone and what he or she can achieve with assistance) and concept development (the process that explains how everyday and scientific concepts develop) (VYGOTSKY, 1978) are aligned to the learning processes which student-teachers go through.

In order to create opportunities for teachers to reflect and guide their own learning and development through the analysis of their everyday experiences in the classroom, instruments based on inquiry-based approaches to professional development have been used successfully. In addition, they are consistent with a sociocultural perspective, as they promote dialogic mediation among teachers, see participation and context as essential aspects to teacher learning, and consider classrooms important sites for professional learning (JOHNSON, 2009). For instance, the use of narratives as a vehicle for teacher inquiry has become a common practice to support teacher development in SLTE (JOHNSTON, 2009). Thus, narratives resulting from diaries, autobiographies, blogs and teaching portfolios are considered powerful instruments which can enhance teacher learning and guide teachers towards more reflective and informed decisions in their practices.

Johnson (2009) argues that SLTE should provide teachers with the tools to help them construe their instructional experiences grounded on theory about language learning and teaching. Teachers should be encouraged to become managers and apprentices of the learning

process, exploring opportunities to direct, plan and assess their teaching with the assistance of more experienced professionals, as through dialogic reflection teacher educators can support the creation of zones of proximal development (JOHNSON, 2009). With the growth of SLTE programs, a key curriculum plan issue is how to help students develop as learners of teaching through and beyond their formal academic studies. The relevance of fostering professional development in order to enhance teachers' content and pedagogical knowledge has been stated in numerous teacher education programs.

Taking into account what has been stated, it is this research's proposal to investigate means to improve student-teachers learning experiences in their teacher education program and trace their professional development through the use of narrative as a mediational tool. Bearing this in mind, in this work we analyze the development of 4 English language teaching concepts (contextualization, modeling, linking and accountability) through student-teachers narratives in a portfolio. Thus, the research question which guides this study is: How does the use of narrative as a mediational tool impact student-teachers' concept development? In order to answer this question, this work relies on narratives collected from a portfolio kept by the participants as well as video recordings of all their classroom interactions during a teaching practice course which took approximately 4 months to be completed. More detail on the data collection will be dealt with in the methodological section.

The next section presents the main concepts of VSCT used in SLTE and the use of narrative as a mediational tool.

2 Vygotsky's sociocultural theory and narrative as a mediational tool

Vygotsky's sociocultural approach is a comprehensive theory of mind which argues that learning and development come from social interactions. Thus, in VSCT, learning occurs through interaction with other people and society, where the individual actively participates in the construction of knowledge. In this process, language is seen as an important mediational tool in the development of higher mental processes (VYGOTSKY, 1986) that aids cognitive development and mediates knowledge. It has double value, since it enables communicative and cognitive functions to move from 'the interpsychological' to 'the intrapsychological plane' (VYGOTSKY, 1987), working both as a social and a psychological tool.

Central to Vygotsky's SCT is the concept of mediation (LANTOLF; THORNE, 2006); Vygotsky's SCT claims that higher mental functions are mediated by culturally constructed means that result out of participation in cultural activities in which cultural artifacts and cultural concepts interact in complex psychological phenomena. Hence, it is by experiencing the concrete world and making contact with the culturally determined forms of organization of the reality that individuals can construct their own sign system. This sign system will later go through a process known as internalization, "the process through which a person's activity is initially mediated by other people or cultural artifacts but later comes to be controlled by him/herself as he or she appropriates and reconstructs resources to regulate his or her own activities" (JOHNSON, 2009, p. 18). The process of internalization is strongly linked to self-regulation, a form of mediation which refers to one's capacity to regulate their own activity and thinking through linguistic means, where their activity is subordinated or regulated by objects at first, then regulated by others, and gradually develops in order to become self-regulated.

Another important concept in VSCT is the notion of Zone of Proximal Development (ZPD), described as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (VYGOTSKY, 1978, p. 86). Hence, it refers to the difference between what an individual can achieve alone and what he or she can achieve with assistance. Successful development during the ZPD depends upon interaction, and the range of skill development that can be achieved with adult guidance or peer collaboration goes beyond what can be achieved alone. In this same vein, the work of second language teacher educators is to mediate teachers' processes of learning to teach by "intentionally insert[ing] new tools or signs into the activities that constitute teacher education with the goal of qualitative transformation in how novice teachers think as well as how they teach" (JOHNSON; DELLAGNELO, 2013, p. 410). Thus, this sort of mediation provided should be contingent to one's ZPD.

The concept of ZPD is introduced by Vygotsky in the context of instruction and it leads to conscious awareness in the development of scientific concepts which "enable learners to move beyond the limitations of their everyday experiences and function appropriately in a wide range of alternative circumstances and contexts" (JOHNSON, 2009, p. 21). In his studies, Vygotsky distinguishes between two types of concepts: everyday concepts and scientific concepts. Everyday concepts are learned through everyday experiences and social interaction with others. According to Lantolf (2007, p. 39), they are "empirically based and require lengthy periods of practical experience to develop. They are, however, at the heart of our lived experience as human beings and are, for the most part, more than adequate for carrying out our daily activities". On the other hand, scientific concepts evolve from formal instruction, as learning how to read or write at school or, in second language teaching, as learning what the meaning of 'pair work' is, having in mind that in order to think in concepts, one has to understand the meaning and the functional role of a sign in order to make it a concept.

To start acquiring scientific concepts, one needs to reach some level of maturation in the development of everyday concepts. Additionally, developing a concept is seen as an ongoing process. Thus, word meaning changes because "concepts do not emerge fully formed with the acquisition of new words by the child but follow a long process of development through a complex series of stages and phases" (MILLER, 2011, p. 67). During this process, one develops complexes and pseudoconcepts, which can be seen as two gradual steps when building a concept.

Vygotsky (1986) states that "scientific concepts grow down through spontaneous concepts, and spontaneous concepts grow up through scientific concepts" (p. 194), which indicates the dialectical relationship between both kinds of concepts. In SLTE, teachers are often exposed to scientific concepts related to research and theories which inform their profession. Some parts of their professionalization become "making connections between the scientific concepts they are exposed to in their L2 teacher education coursework and their everyday concepts about language, language learning, and language teaching" (JOHNSON, 2009, p. 21). Thus, by linking both everyday and scientific concepts, one can develop "true concepts", which are new understandings that enable teachers "to reorganize their experiential knowledge and this reorganization creates a new lens through which they interpret their understandings of themselves and their classroom practices". (JOHNSON, 2009, p. 15)

In this vein, narrative as a tool for teacher inquiry has become very popular among SLTE researchers as one of the main ways of understanding and documenting teachers'

understanding and professional development (JOHNSON; GOLOMBEK, 2002). It is a representation of teachers' experiences and plays a crucial role in the construction of self and identity. In VSCT, narrative (as a cultural activity) is not seen as a device that simply describes one's experience, but rather a powerful mediational tool that can potentially facilitate cognitive development (GOLOMBEK; JOHNSON, 2004). It serves as a semiotic tool that gives teachers the opportunity to describe how understanding emerges and how it is being used towards transformation in their teaching practice.

Johnson and Golombek (2011) address three ways in which narrative functions as a mediational tool – narrative as externalization, narrative as verbalization and narrative as systematic examination. Narrative as externalization functions as a way through which teachers externalize their understandings and their feelings and give voice to their perceptions in order to make sense of their beliefs, thoughts, fears and expectations. It gives teachers the opportunity to reflect and articulate problems they might encounter in their teaching environment and begin to self-regulate and take control over their behaviors. In narrative as verbalization teachers use scientific concepts intentionally as instruments to have greater awareness of their cognitive process. It functions in a sense that it is not the process of thinking, but rather a way of regulating the thinking process. Teachers turn it into a strong mediational tool that allows them to make sense of theoretical constructs which they are exposed to in SLTE and start using those concepts to perceive their teaching experiences in a more informed way and to regulate their thinking and their teaching practice. Narrative as systematic examination functions as a tool for inquiry which assists teachers in shaping what they learn. By engaging in narrative activities as a vehicle for inquiry, teachers systematically analyze their experiences and relate them to current conceptions of language learning and also language teaching.

It has been suggested that the use of narrative as a mediational tool can foster teacher professional development, as it "enables teachers to act with foresight. It gives them increasing control over their thoughts and actions; grants their experiences enriched, deepened meaning; and enables them to be more thoughtful and mindful of their work" (JOHNSON; GOLOMBEK, 2002, pp. 6-7). Moreover, the cognitive processes which teachers undergo when they engage in narrative activity can help researchers to trace qualitative transformation in teacher professional development.

Considering that there is a call for a broader epistemological framework where both scientific knowledge and practical knowledge are valued to inform teachers' practice (FREEMAN; JOHNSON, 1998), the knowledge-base of SLTE must consider how teacher-learning takes place, contemplating the complexity in which the process of learning occurs. When narrative is considered a mediational tool, the act of narrating represents a combination of description, interpretation and analysis which has strong influence on how one comes to understand what one is narrating about. Hence, productive narrative activities should be encouraged in SLTE, as they can create spaces for change, transformation and teacher development.

After having described some of the main concepts in VSCT and explained how narratives can function as mediational tools in SLTE, the following section covers the methodological procedures followed to conduct the present study.

3 Method

This work is part of a microgenetic study[3] (WERTSCH; STONE, 1978) following a qualitative paradigm (CASSELL; SYMON, 1994), widely used by social science researchers and practitioners in many fields, including education. Within a qualitative paradigm, microgenetic studies have been seen as a promising method to study change processes and individual differences in development, as these are specifically aimed at allowing the researcher to closely observe processes of change rather than products. A microgenetic study is a 'very short-term longitudinal study' (WERTSCH, 1985) which focuses on moment-to-moment changes in psychological functioning. It is an observational research method in which the researcher attends closely to the social interactions and the use of tools within the learning environment in order to understand the genesis (or the origins) of cognitive change.

Besides the fact that empirical findings arrived at through microgenetic analysis are considered remarkably consistent (KUHN, 2002), there are some important advantages of using microgenetic analysis in this study. First, collecting and analyzing all interactions over a given period of time gives the researcher the advantage of understanding the trajectory of the cognitive change. Second, this method captures characteristics which provide details related to the participants' development, as well as their context and the events which led them to make particular decisions during the period of data collection.

Regarding the context of investigation, the research took place during a 72-hour[4] elective course in the *Letras-Inglês Licenciatura* undergraduate program at a federal university in the south of Brazil. The course concerned the multidimensional nature of the teacher as a learner of teaching, regarding their context, their practice and learning and teaching concepts present in learning English as a foreign language. Its objective was to help student-teachers to recognize how the process of becoming a teacher takes place, through participation in theoretical and reflective activities and pedagogic practice.

The content proposed in the course included notions on SLTE, the structure of a class, second language acquisition theories, teaching methods, content in language teaching and pedagogic reflective practice. The course curriculum, most of the materials used during the classes and the activities that student-teachers were required to do were made available on *Moodle*[5]. The evaluation of the student-teachers in the course considered a variety of elements, such as their participation and attendance, critical reviews on the readings they did, reflective written responses on class planning and microteaching sessions, followed by a final paper along with the completion of a portfolio.

The course was taught by two experienced teacher educators, TE Adriana and TE Paola. They were also responsible for planning the content of the course, organizing the schedule, teaching the student-teachers as well as evaluating them as the course progressed. There was a third participant in this team, Rosa, who, despite not having a teacher educator role during the lessons, took part in some decisions related to the content of the course, attended meetings in order to discuss how to better approach the matters of this research, participated in class discussions and recorded the lessons. Although there were six student-teachers taking part in the study, we decided to analyze the narratives provided by only three of them: Mary, Lisa and

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3 Considering this is a research that involves human subjects, an approval from the Ethics Review Board (CEPSH – *Comitê de Ética em Pesquisa com Seres Humanos*) was submitted and granted under number 2.620.158.

4 In the Letras-Inglês Licenciatura curriculum, an hour equals 50 minutes in class. It is called hora-aula.

5 Moodle (Modular Object-Oriented Dynamic Learning) is a free software that supports online learning and is used in the university where this research takes place.

Peter[6]. These three participants were selected due to the fact that they provided more narratives related to concept development than the others. These participants acquired some knowledge of English language from the regular schools where they studied, from language institutes and from their major in English at university. Regarding their teaching experiences, all three of them had experiences of some sort before they entered their undergraduate program. The participants currently teach students of different ages and different class levels at language institutes or regular schools.

As for the data collection, the participants were accompanied for four months. During that time, the student-teachers were asked to keep a printed copy of a portfolio and register anytime they felt they had developed in relation to their knowledge or their practice of any of these four concepts: contextualization, modeling, linking and accountability, all of them explicitly introduced, discussed and experienced/trained/experimented in class. They also had all their classroom interactions video recorded by the researcher in a Samsung S2 tablet and their classroom production was also gathered. There were over 40 hours of interaction divided into 25 classes, which included microteaching presentations and feedback sessions.

The analysis of the data started with the reading of the narratives in the portfolios. After that, all the recording was carefully watched and relevant passages were transcribed. In order to understand the shifting point where the student-teachers felt that their development occurred, the portfolios were analyzed by linking the student-teachers narratives to the video recordings and the classroom materials. After that, all the feedback sheets from the microteaching presentations were read, and all the important observations were considered and added to the analysis in order to support the participants' narratives. After taking notes regarding each student, an analysis of the narratives, the video recordings and all the other documents was carried out in order to look for aspects that could represent student-teachers points of development in regards to the concepts of contextualization, modeling, linking and accountability.

Following the description given on the methodological procedures adopted in this study, the next section deals with the data analysis according to the theoretical perspective presented.

4 Data analysis

In this section, we provide the findings and discussion of the data collected, which consists of the analysis of the portfolio narratives regarding the development of the concepts of contextualization, modeling, linking and accountability, combining student-teachers' narratives to the documents which support their statements (video recording interactions) and comments regarding their development. It is important to highlight that in order to provide the student-teachers with opportunities to develop the skills required to improve abilities related to these concepts, the classes were filled with plenty of input and theoretical background.

4.1 The concept of contextualization

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6 To protect the participants' privacy their names were replaced by randomly chosen names.

Contextualization is the moment of the class in which the teacher sets the mood and introduces the topic that students will be working on during the lesson. It can be done through visual aids such as pictures and/or videos, or even through simple questions. Regarding the concept of contextualization, Mary indicated in her narratives the moments in which she perceived changes in her development. These moments are described and discussed as following:

(1) During class 19 Mary presented her first solo microteaching, whose initial activity was about personality traits, for which she used a video from a famous TV series. Her introduction to the activity was simply to say that they were going to watch a video from the TV series *FRIENDS*. TE Paola asked if the peers felt prepared to watch the video. One of the peers said that since all of them were familiar with that particular TV series, they felt ready – on the contrary, it would be hard to do the activities proposed. TE Paola pointed this in the following extract:

> Mary, what would you do if people didn't know the series? This is something that we should predict, right? What if nobody remembers? What if nobody knows the series? (TE Paola, class 19).

In relation to this episode, Mary wrote on her portfolio:

> The choice of the topic is very important when planning a lesson and although it may seem that everybody knows the topic or the input data you bring, you should always think of the possibility that at least one of your students may not know it. I forgot about that and took it for granted that everybody knew the characters of *FRIENDS* (the series) and forgot to introduce them (Mary's portfolio).

In the excerpt related to Mary's reflection on her first solo microteaching presentation, it can be observed that she had some difficulties contextualizing her lesson. In the portfolio, Mary reflected on the situation, as she wrote that she realized the importance of considering students' previous knowledge when planning a class and choosing a topic to present and not taking for granted that all students would like or would know the topic.

Mary's narrative implies that the mediation she received during her feedback session made her reflect on aspects related to her contextualization. Through her statement, it can be seen that she wrote her narrative after she acknowledged that her performance had flaws. However, in her writings she seems to be aware of her mistakes and how she can improve her teaching practice so as to start her lessons in a more contextualized and engaging way.

(2) During class 22 Mary had her second solo microteaching presentation. As in her first solo microteaching, Mary received some criticism towards the class, as there was a possibility of students not being acquainted with the movie characters she presented. TE Paola addressed Mary's comment on an assignment she had written, in which she stated that she would try to think more about the possibility of students not being aware or acquainted with the topics she presented in her lessons. Once more, TE Paola described the same issue in her presentation,

and asked her how she could have tried to solve the problem in case students were not familiarized with the topic:

> One thing that you put here [in a written assignment about what they (student-teachers) could have done to have improved their previous presentations] was: 'I will try to think more about the possibility of the students not being aware or acquainted with the topic or characters'. So, I was not acquainted with Pocahontas when you talked about Avatar and Pocahontas [...] what if nobody knows? You have to try to solve this problem. What could you have done? (TE Paola, class 22).

> Then I would use another character, Shrek. But if nobody knew Shrek then I would [...] if we had more time, I could probably open the website that has the summary. It is a little bit long, but if we had time and we need to work on this [...] or we could watch the trailer from the movie (Mary, class 22).

In relation to this episode, Mary wrote on her portfolio:

> I introduced my input data in a better way, but I still think it could have been better because instead of letting a student explain the movie, I could have opened a real summary on the internet and explained to them. Also, we could have watched the trailer (Mary's portfolio).

In this excerpt it can be implied from Mary's narrative that the questions provided by her TE motivated her to reflect on alternatives to overcome this issue (I could have opened a real summary on the internet and explained to them. Also, we could have watched the trailer) and improve her contextualization. In this situation it can be seen that the inquiring provided by TE Paola refers to intentional implicit mediation, which is when the expert other intentionally leads the other person to discover the answers by herself, giving clues, so that she reflects and reorganizes the activity on her own (BIEHL, 2016). The mediation provided by TE Paola can also be described as responsive (JOHNSON; GOLOMBEK, 2016, p. 30), in that the TE recognized and targeted the teacher's emergent need while using her (the teacher's) own responses to mediate her understanding of the concept 'contextualization'.

Effective mediation should be emergent, dynamic and contingent on the interactions between teachers and teacher educators. Moreover, as too much assistance may decrease learner agency and too little may increase frustration (Wertsch, 1985), mediation has to be continuously negotiated during ZPD activity, shaping the quality and character of the mediation that emerges during interactions with teacher educators.

During her second solo microteaching presentation, Mary had the same issues in relation to her choices of contextualization in her lesson as she had in the first microteaching. The fact that she recognizes the sign 'contextualization', and seems to understand its meaning, but is unable to incorporate it within her teaching indicates that she had not understood the concept, or at least not the true concept, which embraces both scientific and everyday concepts. Nevertheless, in this case, it can be observed that TE Paola was attuned to Mary's difficulties, as much as Mary was attuned to TE Paola's mediation, which resulted in Mary's reflection towards

possible solutions to overcome the issue she had during her presentation and bring engagement to the beginning of her lesson. Moreover, even though it is clear that she improved and new zones of proximal development were created, it would be interesting to see a third microteaching presentation to confirm that she had understood and was able to use contextualization in an effective way in her lessons.

4.2 The concept of modeling

Modeling is represented by controlled dialogues conducted by the teacher, so that the whole class can observe the pair who is practicing – in the case of an open-pair modeling. It is an effective way to give instructions, as it provides students with vocabulary, intonation, pronunciation, grammar needed for the task, and it also lets students know what is expected from them – both in relation to the language to be used and the degree of complexity in which they have to approach the task. In relation to modeling, Mary indicated in her narratives the moments in which she perceived changes in her development. These moments are described and discussed as following:

(3) During class 7, TE Paola explained that modeling was part of contextualization because it prepares learners to perform the task:

> In procedures we have three steps: we have the preparation (how we are going to prepare students for the task), and what we did here in open pairs is one of them, you are modeling the language that they need, you are going to have the performance [...] and then you are going to see how the pair work, or group work interaction was (TE Paola, class 7).

In relation to this episode, Mary wrote on her portfolio:

> Modeling is within contextualization (Mary's portfolio).

In the excerpt, it can be observed that Mary's statement on her portfolio might suggest that she had not understood yet the concept of modeling, its function and its application, or that she had recognized some of these aspects through TE Paola's explanation. Either way, it can be implied that the explanation TE Paola gave reverberated through her narrative. In this case, Mary's narrative seems to function as verbalization (JOHNSON; GOLOMBEK, 2011), as

> From a sociocultural theoretical perspective, verbalization is not construed as being equivalent to thinking, but rather as a means of regulating the thinking process; in other words, verbalization is not so much to state (or write) what is known, but to assist in the internalization process (p. 492).

Mary's narrative may indicate that she is intentionally using the scientific concepts she saw in class as tools for understanding, or *thinking in concepts* (KARPOV, 2003), which can be

seen as both an outcome of and evidence for internalization. The development of a scientific concept begins with learning to name and define it (VYGOTSKY, 1986). However, it is necessary that Mary is able to connect the scientific concepts she is learning in the course to her practice and her everyday concepts; once connected, the concepts are then internalized, and once internalized, they have the potential to function as psychological tools, enabling her to have greater awareness and control over her cognitive process and engage in more informed ways of teaching in a variety of contexts.

(4) In class 8, when TE Adriana explained that modeling was a controlled dialogue conducted by the teacher in order to assist students in their performance, she said:

> Modeling has a lot to do with pair work, group work, and especially when it concerns pair work, it is actually open pairs. Do you know the difference between pair work and open pair? [...] They [modeling through open-pair] are controlled dialogues conducted by the teacher, so that the whole class can listen to the pair who is practicing (TE Adriana, class 8).

After giving some examples of modeling activities, TE Adriana asked the student-teachers if they used open-pair in their classes or if they used to go straight to pair work. Lisa answered:

> Sometimes I use it, but I don't even realize that I am using open-pair, because we didn't know the name (Lisa, class 8).

Mary nodded and replied:

> Yes, we didn't know the name (Mary, class 8).

In relation to this episode, Mary wrote on her portfolio:

> I've been doing open pair modeling without knowing that it was the name of it (Mary's portfolio).

In the excerpt, it can be observed that Mary had been doing open pair modeling without knowing its name. That is, she was used to doing it, but she did not realize it, because she did not know the scientific name of the technique. According to Vygotsky (1986), performance that is not guided by high quality conceptual thinking results in "mindless" behavior, which was eventually what happened with Mary. She knew the technique and therefore used it, but possibly not necessarily at the appropriate moments or with the adequate intents. The author states that "real concepts are impossible without words and thinking in concepts does not exist beyond verbal thinking. That is why the central moment in concept formation, and its generative cause, is a specific use of words as functional 'tools'" (p. 106-7). Thus, considering that language is the means of thinking, naming things is a central

prerequisite in order to understand these things, and that may explain why Mary did not understand the scientific concept or the function of modeling before. However, it can be observed that modeling was an everyday concept in Mary's teaching practice. According to Johnson (2009),

> From a sociocultural perspective, the professional development of L2 teachers becomes a process of building on teachers' everyday concepts about language, language learning, and language teaching to enable them to understand the scientific concepts about language, SLA, learning, and L2 teaching that are produced, accepted, and adapted in the profession (p. 14).

By linking her "experiential" knowledge to the "expert" knowledge she was acquiring in the course, meaning having "scientific concepts grow down through spontaneous concepts, and spontaneous concepts grow up through scientific concepts" (VYGOTSKY, 1986, p. 194), Mary is inclined to transform the way she describes and interprets her lived experiences. Looking ahead, these new understandings will enable her to reorganize her experiential knowledge, which creates a new lens through which she can interpret her understanding of herself and her classroom practice. Thus, as the development of scientific concepts start from and are heavily influenced by experiential knowledge (everyday concepts), Mary seems to be on the right path in her development of the scientific concept of modeling.

4.3 The concept of linking

Task continuity – or the concept of linking – was also reviewed. It refers to the chaining of activities together to form a sequence, in which the successful completion of prior activities is a prerequisite for succeeding ones. Thus, by developing interlinked sets of activities in which succeeding steps are dependent on those which come before (either in terms of content or skills), teachers can ensure greater coherence and consistency of language use. Concerning the concept of linking, Lisa indicated the moments in which she perceived changes in her development. These moments are described and discussed as following:

(5) During class 9, TE Adriana started explaining links and the importance of having them throughout the class:

> Task continuity refers to the chaining of activities together to form a sequence, in which the successful completion of prior activities is a prerequisite for succeeding ones [...] under this principle, activities are sequenced according to: their complexity as determined by input, learner and activity factors and the logic of themes and learning pathways [...] developing interlinked sets of activities in which succeeding steps are dependent on those which come before (either in terms of content or skills), will ensure greater coherence and consistency for your language program (TE Adriana, class 9).

In relation to this episode, Lisa wrote on her portfolio:

First time in class I heard about linking and how to do it (Lisa's portfolio).

In the excerpt, it can be observed that Lisa reflected on what she had heard during class and wrote on her portfolio that it was the first time in class she heard about linking activities and how it could be done. The very fact that she wrote about linking on her portfolio appears to allow us to interpret that the concept resonated to her. As it was the first time that Lisa heard the concept of linking, it is understood that it will take her some time to internalize it, as concept development is an ongoing and a non-linear process, or, as Vygotsky (1987) puts it, a "twisting path".

As previously stated, Vygotsky (1986) indicated the dialectical relationship between everyday and scientific concepts. In SLTE, teachers are required to make connections between the scientific concepts they acquire during their teacher education courses and the everyday concepts they experience in their classrooms. Considering that in order to think in concepts, one has to understand the meaning and the functional role of a sign in order to make it a concept, Lisa will have to be exposed to the concept of linking repeatedly and also go through situations in which she will apply and experience this concept within her practice. Thus, by connecting both the scientific concept of linking (which she learned in her teacher education course) and her everyday concept of linking (which is related to her own practice), Lisa will be able to develop "true concepts", which will enable her to reorganize her knowledge and help her interpreting new understandings of herself and her classroom practice. Once she fully internalizes the concept of linking, she will be able to apply it in her teaching.

(6) During class 12, Lisa presented a microteaching on listening and speaking in pairs with Mary. During her feedback session, her peers and TE Paola talked about her linking activities:

She came up with new questions about the same topic which was sports (David, class 12).

She reiterated the questions from the beginning (TE Paola, class 12).

In relation to this episode, Lisa wrote on her portfolio:

During my first microteaching I was able to put in practice linking activities (Lisa's portfolio).

In the excerpt, it can be observed that Lisa acknowledged her good performance, after receiving positive feedback on the links she provided between the activities. It is important to address the fact that it was during this course that Lisa was exposed to the scientific concept of linking for the first time. In her narratives she stated that she was able to put in practice linking activities, which indicates that she was already acquainted with the everyday concept related to it, even though she mentioned that it was only in this course that she was taught the scientific concept of linking and why this is an important technique to be applied when teaching a lesson.

This episode represents great progress towards the development of a "true concept" of linking, which will certainly help Lisa in her activities and tasks.

(7) During class 18, Lisa presented a microteaching in pairs with another student. The topic of their lesson was "preferences", and Lisa talked about food and places to contextualize. However, her links were not very smooth, as observed in the feedback session:

> So, from the chocolate you went to the city, to Paris. I didn't actually see the connection there (TE Paola, class 18).

> Do you think it was smooth? How did you feel about the link? Did you feel that was smooth? (TE Adriana, class 18).

> I thought it would be smoother if I started with coxinha and feijoada. On my plan they were the third and the fourth pictures, so I would go back to the pictures to link (Lisa, class 18).

> You could have changed the order [...] maybe you could have just said like [...] oh, French people have delicious chocolate [...] and the talked about food [...] something to think about [...] transitions to everything, from a question to another, from a picture to another, from one activity to another (Peter, class 18).

> You know, one thing that I always think when I am preparing is [...] imagine you are talking to a friend, you usually connect one thing to the other, right? You don't stop and say something different [...] so, one thing starts leading to another in a conversation (TE Paola, class 18).

> It could have been the chocolate, then the food, and then the cities (David, class 18).

In relation to this episode, Lisa wrote on her portfolio:

> Learned a little bit more about linking during the feedback although I did not do it greatly (Lisa's portfolio).

In the excerpt, it can be observed that Lisa acknowledged that she did not do a great job when trying to link her activities in this presentation, even though she delivered a successful class in terms of linking activities during a previous microteaching presentation (class 12). She was told by the TEs and her peers that her links were not very smooth. TE Adriana asked how she felt about the links, if she felt they were smooth, and she answered that they would be smoother if she had changed the order of the pictures she presented in her lesson. In her portfolio she stated that, even though she did not link her activities smoothly, the feedback has contributed to improve her understanding of how transitions should be dealt with.

The fact that Lisa was able to provide successful linking activities in one class but did not show consistency in the following one might indicate that she had not fully developed the concept of linking yet. According to Smagorinsky, Cook and Johnson (2003),

> One's development of an approach to teaching stands in dialectical relation to one's development of a conception of teaching, which comes about through principled – e.g., systematic and rule-governed – activity in social context [...] Achieving unity in a concept does not come easily or immediately but rather follows a "twisting path" (VYGOTSKY, 1987, p. 156) that requires gradual process (SANDFORD, 1999), becoming modified as people gain new experiences and apply it in new settings (pp. 1401-2).

As seen previously in this study, developing a concept is an ongoing and nonlinear process of development that encompasses a complex series of stages and phases (MILLER, 2011). Although the stage in which Lisa is in relation to the development of the concept of linking cannot be identified – if she has developed a complex or a pseudoconcept –, as cultural tools tend to be appropriated with difficulty and unevenness (WERTSCH, 1998), Lisa's narrative represents a strong sign that she is going through the process of developing this scientific concept as well as trying to relate it to the concreteness of the classroom.

(8) During class 23, Lisa presented a solo microteaching which focused on a discussion about how some places can have discriminatory policies. She gave an example of barber shops where women cannot enter, but this did not seem enough to guide learners through the discussion. During the feedback session, some peers said that they would have benefited from more visual aids as they believed it would have helped in the transitions:

> Did you notice this, guys? That we had difficulty starting to talk about this [...] why did we have difficulty starting to talk about this? (TE Paola, class 23).

> I thought the topic was very interesting, but in the beginning I had difficulty because I didn't have more examples, to show where we should be at, so [...] I needed more examples (Mary, class 23).

> It looks like I missed more input, maybe [...] or more pair work [...] something that you would have us talk before we go to the discussion [...] and then in this case there should be something else (TE Adriana, class 23).

> That part of the discussion [...] some pictures or videos, or anything would aid us to know what to discuss [...] I really wanted to say some things, but I wasn't sure if that was what you wanted to hear like [...] so maybe if you could just guide us on what to talk about, visualizing it (Peter, class 23).

In relation to this episode, Lisa wrote on her portfolio:

> I identify how I can be smooth in my transitions. Sometimes it takes some time to think of what to do, but I believe I can do a good job (Lisa's portfolio).

In the excerpt, it can be observed that Lisa reflected on the situation in her narratives and stated that she is able to identify how she can be smooth in her transitions. She said it may take some time to think of alternatives, but she believes she can do a good job. From her comment, it can be implied that Lisa believed that she was developing the concept of linking and trying to experiment it within her lessons, which indicates that she was seeing progress in her ability to use smooth transitions and linking activities along the course.

4.4 The concept of accountability

Accountability is a stage when teachers check learning results and help learners realize how much they learned through the activity. In other words, the main purpose of accountability is to enable learners to become aware of their progress and to assess their development. Thus, when providing activities that promote accountability, teachers help learners to foster a perception of the way they use the language. There are many activities which can be used in order to promote accountability, such as asking learners to report on their findings or on their conversations, comparing different results, dramatizing short dialogues, asking learners about the language they used or asking learners to tell how they got to their answers. As for the concept of accountability, Peter indicated the moments in which he perceived changes in his development. These moments are described and discussed as following:

(9) During class 15, Peter presented a microteaching with Lisa and Joana. During the feedback session, TE Adriana mentioned that Peter provided a question at the end which led to a moment of accountability where he checked if the learners understood what they had learned during that particular lesson:

> I guess that Peter asked the question at the end [...] I see that as accountability, like [...] that was a way of saying ok, so let's sum up, let's sum up what we said here [...] when you make things clear (TE Adriana, class 15).

In relation to this episode, Peter wrote on the portfolio (days later):

> After two microteachings in pairs I realized the importance of closing up a lesson with some meaningful way such as bringing accountability to students (Peter's portfolio).

In the excerpt, it can be observed that Peter has indicated through his narratives that after his first two microteaching presentations he started to realize how important it is to close up a lesson in a meaningful way such as bringing accountability to students. During his previous microteaching presentations he did provide activities for accountability in the end of his lessons, but he seemed confused on what could be considered accountability and its purpose, indicating that maybe he brought accountability without actually knowing that it was accountability.

From Peter's narrative it can be implied that he was only able to understand the concept of accountability after he had the opportunity to apply it in his practice. The concept appeared to be very abstract for him, which is in fact a feature of scientific concepts. It was only in his concrete (and unintentional) use of accountability and after the TE naming it that he appeared to properly understand what the concept meant. It can be observed that being exposed to a scientific concept, in this case the concept of accountability, was not enough for Peter to understand or assimilate it; he had to apply it within his context in order to make sense of it, which will potentially be internalized, becoming part of his own practice.

(10) During class 21, Peter presented his first solo microteaching. TE Paola asked Peter what he thought of the activities he had chosen to provide accountability, to which he answered:

> I was having problems to think about accountability for both the writing little exercise and the game, then I revisited the slides about accountability [given by the TEs] and then I saw that if you ask them to share the results of the task itself, that's accountability, so I planned it for both tasks, like sharing if you could guess who the description is about, and also like [...] were you able to guess your partner's character [...] that's my accountability (Peter, class 21).

> That's it. That is accountability (TE Paola, class 21).

In relation to this episode, Peter wrote on the portfolio:

> I struggled a little to understand how accountability could be conceived in my lesson plan. I went back to the slides and checked some strategies which worked well (sharing results, finding common ground) (Peter's portfolio).

In the excerpt, it can be observed that Peter recognized that he had been having problems finding ways to provide accountability activities for his lessons. In his portfolio he also mentioned that he revised the slides given by the TEs and checked some strategies which worked well during his presentation. The fact that Peter went back to the slides to revise information on the content showed that, even after presenting accountability activities in his microteaching sessions, he was still not able to self-regulate his activity, as he had to revise the slides (object-regulation). His narrative also emphasizes the importance of naming things, considering that, once he knew that the name of the process which should be used in the closure of a lesson was accountability, he was able to look for information given by the TEs during the course. Despite the fact that he still felt he did not fully understand the concept, it can be observed that his ZPD was expanding as he was developing the scientific concept of accountability. However, at this point, there was still a need to apply this concept successfully in his teaching practice.

Teacher learning is not a straightforward internalization of "expert" knowledge from outside in. Instead, teachers combine their "expert" knowledge with their own ideas and beliefs, in order to create instruction that is meaningful for their own objectives. This corroborates the idea that teachers are not passive receivers of theory, but rather active users of theory who transform this theory according to their own instructional contexts to fulfill their own needs

(COCHRAN-SMITH; LYTLE, 1993). In his narrative, Peter revealed that he had struggled when trying to understand the concept of accountability and how he could apply it in his teaching. However, in the same narrative piece, he promptly showed what he did in order to cope with that issue and try to improve his understanding and use of the concept of accountability.

(11) During class 25, Peter presented his second solo microteaching. During his feedback session, TE Paola mentioned the moment he provided an activity for accountability:

> We had a kind of accountability where you asked us to check each other's words (TE Paola, class 25).

In relation to this episode, Peter wrote on the portfolio:

> I feel so much confident about my classes! It feels that I'm aware of my movements because I've made careful planning, but also because I'm able to improvise (flexibility). Instead of saying "that's all for today folks" – something that the old Peter would say – I am able to finish a lesson in a focused way bringing accountability to what students have learned (Peter's portfolio).

In the excerpt, it can be observed that Peter felt very confident after the feedback he received on his second microteaching presentation, as he believed that he was aware of his movements because he had made careful planning, but also giving room to flexibility. He concluded by saying that, instead of finishing a lesson in a meaningless way – as he believed he used to do before participating in this course –, he was then able to do it in a focused way. After having issues understanding the concept of accountability and its application within his teaching practice, Peter seems to be very pleased with this microteaching performance. His confidence is revealed through his narrative, in which he states what he has learned and how he changed some old habits. Peter's narrative shows that he reflected on the instruction received from his teacher educators, combined it with his own experience and tried to make sense of his own teaching, explicitly and intentionally aiming at improving his practice, which he believed to have achieved as seen in this narrative.

5 Final remarks

The present study aimed at analyzing means to improve student-teachers learning experiences in their teacher education program and trace their professional development by investigating how the use of narrative as a mediational tool can impact student-teachers' concept development. The concepts analyzed in this work were contextualization, modeling, linking and accountability. This work targets written narratives produced by the student-teachers in a portfolio combined with oral narratives taken from classroom interactions which were video recorded. The fact that the narratives in the portfolio were written was important because when one writes, one has to elaborate more than in oral language, and this elaboration is already a mediational process that one engages in (JOHNSON; GOLOMBEK, 2011). Some important

aspects observed in the analysis of these narratives have served as the basis for this conclusive piece.

First, it can be observed that through the narratives, student-teachers had the opportunity to reflect on their learning experience during this course. They made use of the written portfolio to describe some new concepts they were exposed to during their classes and to make sense of them, as their narratives served as mediational tools in order to regulate their own thinking and internalize these new concepts. Their narratives also reinforced the notion that concept development indeed follows a twisting path (VYGOTSKY, 1986), as some of the student-teachers showed struggle when attempting to understand and make use of the concepts which they were not familiar with. They made their learning process explicit by exposing their understandings and described moments in which they believed to have understood a concept but were not able to apply it in their practice, which may indicate that they had not fully developed that concept.

Second, through their narratives, student-teachers were able to reflect not only on their learning, but also on their practice in the microteaching presentations. Through their narratives, student-teachers were able to merge the scientific concepts they were exposed to during the course with situated understandings and practices. It also offered the student-teachers the chance to build a learning autobiography which can potentially uncover a lifetime of professional growth. This learning autobiography emphasizes the view of teacher learning as a life-long process, providing teachers with the opportunity to record their thoughts and the development of their didactic knowledge, teaching competences and skills.

In the light of the aspects mentioned, these findings have positioned the use of narratives as mediational tools as an effective and meaningful alternative to be used in order to contribute towards teacher learning and teacher professional development. However, concerns were raised regarding the amount of time the student-teachers had to dedicate to writing the narratives. As it was a very busy semester – most of the participants were in the final stages of their English language teaching program – some participants stated that they did not write or dedicate time as much as they wanted to, given the circumstances.

This research considered bringing some contribution to the area of SLTE by investigating the use of narratives as mediational tools and how they impact the development of concepts by student-teachers. This study was grounded on the VSCT, a comprehensive theory of mind which emphasizes the role of interaction in cognitive development (VYGOTSKY, 1986). Considering the call for a more situated view on teacher learning, much research has been carried out in order to understand how teachers learn to do what they do. Teacher professional development has also gained much attention and it has been one of the most common goals in language teaching programs. As SLTE needs to be more mindful of how teacher education programs are designed and how they best serve teachers (JOHNSON; GOLOMBEK, 2016), this work suggests that making use of narratives is a viable resource to be used by student-teachers during their teacher education program as it has shown to serve as a powerful mediational tool that can promote concept development and support professional development.

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