DIGITAL RESOURCES IN THE EDUCATIONAL MODEL FOR BI- AND MULTILINGUAL EDUCATION OF YOUNG RUSSIAN LANGUAGE LEARNERS

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Abstract
The multicultural and multilingual development of an individual is a matter of national and global security. The system of education in the Russian Federation functions within the all-European trend: multilingual educational institutions design curriculum for children of different nationalities speaking different languages. This paper outlines the educational model which places digital learning objects (DLOs) in the center of bilingual and multilingual education of preschool and primary school age children who learn Russian as a state language, second language or heritage language.

The model is based on empirical data collected in 2018 as a part of a larger research project. The study was conducted in four state-funded and one private kindergartens/prgeries and involved bilingual young learners aged 3-6 and their educators. The experiment was carried out within the framework of Vygotskian sociocultural theory, particularly the ideas of mediated learning [1], and applied the triadic scaffold protocol [2] as a major data collection instrument. The data enabled the researchers to put forward four conceptual dominants that the model should be based on, namely 1) the child-teacher-DLO trinity where the child’s individual needs play a key role, 2) the teacher as a subject of the learning process and an object of learning, 3) DLO as a mediator of knowledge, virtual buddy and motivator, and 4) Russian language and culture as a consolidator of the Russian society and Russian community abroad.

In this paper the authors examine how the educational model created to support the integration of digital resources into the speech development of bilingual and multilingual children was implemented in four kindergartens in a multiethnic region of the Republic of Tatarstan, Russia. The results of the study inform policy makers, researchers and early childhood educators who are interested in how educational technologies are integrated into programs of speech development of young bilingual and multilingual preschoolers.

Keywords: Bilingual education, multilingual education, early childhood education, language acquisition, digital resources, educational model.

1 INTRODUCTION

The development of multicultural and multilingual environment in educational institutions has become a matter of national and global security. Decision makers in multicultural nations have to introduce policies that support both the maintenance of the consolidating status of a state language (or languages) and the preservation of minority languages. As a result, a number of such countries establish state acts that provide protocols and guidelines as to how regulate multilingual issues in state organizations including educational institutions [3]. One of the examples are guidelines on multilingual technologies for educational organizations developed by the Language Policy Department at the Council of Europe.

The system of education in the Russian Federation in many ways functions in the same all-European educational context: curriculum in all educational institutions should accommodate young learners and students of different nationalities speaking different home languages. With about190 ethnic groups living within vast lands of the country, Russia faces the challenge to support the education system in which the Russian language becomes a unifying tool for the communication in multicultural regions [4]. Moreover, Russian language educators should consider at least 3 roles that the Russian language may play: a role of a state language, a second language and a heritage (or foreign) language. As such, the consolidating status of the Russian language becomes prominent.

In this context, the system of education needs conceptual frameworks and models that could help educators to build a curriculum which supports bilingual and multilingual education of young learners. This study outlines the educational model which places digital learning objects (DLO) in the center of...
bilingual and multilingual education of preschool and primary school age children who learn Russian as state language, second language or heritage language. In this paper, the authors also examine how the educational model created to support the integration of digital resources into the speech development of bilingual and multilingual children was implemented in four kindergartens/preschools in a multiethnic region of the Republic of Tatarstan, Russia.

2 METHODOLOGY

The aim of this qualitative study is twofold. First, to outline the educational model which places digital learning objects (DLOs) in the center of bilingual and multilingual education of preschool and primary school age children who learn Russian as a state language, second language or heritage language. This original educational model is shortly described in the Results section below and discussed in more details elsewhere [5]. Second, we examine how this educational model was implemented in four kindergartens/preschools in a multiethnic region of the Republic of Tatarstan, Russia.

The participants of the empirical study were four educators and their 3-6 year-old children (N=47) mostly native Tatar speakers or Tatar-Russian bilinguals. The research was conducted in four sites: three state-funded kindergartens/preschools and one private child center for preschool children. The sites were selected based on the criteria sampling: all sites had to 1) carry out non-Russian (Tatar in our case) language of education and communication, 2) have Russian language classes, and 3) integrate digital learning resources into teaching Russian.

Data sources included: 1) video records of 9 classrooms, 2) interviews with 4 teachers video recorded and transcribed; 3) live class observations of 3 lessons. The data collection and analysis involved the use of triadic scaffold protocol [2], a valid instrument that enables to focus on the interaction of the child, the teacher, and the digital learning object (online program, electronic resource).

The theoretical framework of the study is based on the Vygotskian sociocultural theory [1] which focuses on the social situation of child development. Vygotsky emphasizes the important role of stimuli-tools which serve as mediators of knowledge. We argue that digital learning objects could also serve as effective mediators, which still does not undermine the significant role of a live mediator – the educator, especially when learning involves children of preschool age. With this framework in mind, we explored the classroom interactions in the four participating early childhood educational institutions.

3 RESULTS

3.1 The educational model

The educational model developed earlier and described elsewhere [5] by the authors of this paper, outlines four conceptual dominants of bilingual and multilingual education that validates the application of digital learning objects (DLOs) in the curriculum of preschool and primary school age children who learn Russian as a state language, second language or heritage language. These conceptual dominants are: 1) the child-teacher-DLO trinity where the child’s individual needs play a key role, 2) the teacher as a subject of the learning process and an object of learning, 3) DLO as a mediator of knowledge, virtual buddy and motivator (stimulus-tool), and 4) Russian language and culture as a consolidator of the Russian society and Russian community abroad.

In subsections below we describe and discuss how these four conceptual dominants were implemented in four early childhood education sites in a multiethnic region of the Republic of Tatarstan, Russia.

3.1.1 Child-Teacher-DLO Trinity

The key conceptual dominant of the educational model under discussion involves close interrelation of the learner, the teacher and the digital learning object (DLO) used to mediate learning. The study of this interrelation in the participating sites revealed several important tendencies. First of all, the interaction is context specific, i.e. its format is dictated by the size of the group, availability of equipment, the setting of the classroom and child-teacher ratio. In 3 sites a single teacher worked with 10-13 children and utilized an interactive whiteboard that was available in the classroom. In such a context, teachers used whole-group activities, place children in a semi-circle quite far from the screen and asked them to come up to the whiteboard one-by-one to perform interactive tasks. In a private
kindergarten a teacher worked with just 5 kids and was able to use a laptop computer, the only equipment available for her; children gathered together around the laptop screen and clicked the mouse in turn.

The child-teacher-DLO interaction is also affected by teacher’s view over the role of a DLO. While in all classes that were recorded and observed the design of a DLO made the teacher introduce practice-oriented skills, in two sites DLOs were mostly used just as secondary tools of learning. In their interviews teachers confirmed that they did not see digital resources as primary educational tools and integrated them in little portions in between other more prominent non-technology tools such as still images or physical activities that develop motor skills.

Third important observation regarding child-teacher-DLO trinity concerns the role of a child. While in our education model we believe that child’s individual needs must play the key role in the trinity, research data indicates that it is not always the case. Real-world learning contexts, such as class size and access to technology, take precedence and do not allow a teacher to introduce individual trajectories for her young learners. The data, however, show that learners in one class may have a range of Russian language proficiency – from beginners (when a Tatar kid has almost zero knowledge of Russian) to balanced bilinguals. Individual practice in this case would be most effective.

3.1.2 The Binary Role of a Teacher

The second principle of the model discussed is the idea that the teacher plays a binary role – the role of a subject (agent) of the learning process and the role of an object of learning. Indeed, in the context of early childhood education the leading role of a teacher is indisputable. It is the teacher who plays the role of a more knowledgeable other [1] when selecting the content and learning tools, making the decision on what and how to teach a given group of learners (or an individual learner with her or his cognitive, psychological and other needs), then mediating the knowledge transfer and assessing learning outcomes. Therefore, professional skills of the teacher are critical for successful child-teacher-DLO interaction to happen.

The data indicates that 4 teachers observed came to class with different knowledge and skills as to why and how to integrate digital technologies into their educational context. In one case a teacher with 28 years of experience chose to combine DLO tasks with active ‘finger’ games and rhyming. In the other case (in a private child center), a much less experienced teacher preferred to provide learners with some ‘free play’ time, when learners were able to click the mouse without much guidance of a teacher. However, in all cases the mediating role of a teacher was evident.

Class observations and interviews with teachers confirmed a long-time statement that technology by themselves can do nothing [6]. The research data revealed a limited knowledge of teachers about what and how child-teacher-DLO interaction could be mediated to facilitate successful learning. Though it was clear that learners were well-motivated to do digital activities and showed great pleasure in interacting with the computer applications, instructional conversations [7] could have been more varied and productive. While repertoire of the teacher that uses digital resources could involve a range of explicit and implicate instructional feedback [8], [9], teachers mostly used explicit corrections.

When the professional knowledge base requires upgrade, the teacher takes up her second role – the role of an object of learning. Decision makers should take into account the fact that just installing equipment will not by itself help the teachers become effective users of educational technology [10]. Investing time and money into professional development should become a standard path to building a productive and efficient model for integrating technology into teaching Russian or any other subject in this matter. In participating kindergartens/preschools where this study was conducted, teachers have not had formal training in integrating technology though they are encouraged to do so by administrators.

3.1.3 Digital Learning Object’s Multiple Functions

The third principle of the proposed educational model states that a DLO may function as a mediator of knowledge, virtual buddy and motivator (stimulus-tool). Operationalizing within the Vygotskian sociocultural framework, we argue that a quality DLO takes up a role of a more knowledgeable other [1] and successfully performs functions of a mediator of knowledge when presenting the content, explaining tasks, providing practicing activities, evaluating task completion and providing feedback to a learner. The data, however, suggests that teachers may not be ready to embrace all of these DLO’s functions, which was evident when some teachers used DLOs mostly as content deliverers. For example, in two sites we observed how an interactive whiteboard was used to show image of objects
being learned and then learners were given an oral task to sort digital objects (related to the theme of the class) by moving them into the correct place. This happened first of all due to the lack of more sophisticated digital learning resources but also because of teachers’ unawareness of many functions that a quality DLO may perform.

Well-design and sophisticated DLOs may include elements, such as virtual characters integrated into the storyline of the content, which are designed to become virtual buddies (peers, friends) and motivators (or stimuli-tools in Vygotsky’s terms [1]). Such was the case with one of the digital resources that was used in three of the sites observed – the online Russian language school for children Live Fairytales™ [11]. In this resource children meet virtual characters that they can relate to – a 3-year-old girl Masha and a 4-year-old Misha, who are not only main protagonists in fairytales, but also learning buddies, who ask questions, comment on replies, or introduce and explain activities. Two other important characters in Live Fairytales™ are a dragon Zmej Gorynych and a gnome-like little man Domovoj, who are both derived from Russian folklore. These four characters address directly to the learners and children readily respond to them as if they were real, as was observed in several occasions in this study. Moreover, Zmej Gorynych is also the one to reward young learners for successful completion of activities: he gives gems, which a child may collect and later exchange for clothes to dress up Domovoj. Such game-like activities and the simulation of a direct communication with virtual characters were very well accepted by young Russian language learners in the participating sites, creating a pleasurable situation of play.

3.1.4 Russian Language and Culture as a Consolidator

The final fourth pillar of the proposed educational model implies that Russian language and culture taught with and via DLOs play the role of a consolidator of the Russian society and Russian community abroad. This implies that language development programs for bilingual and multilingual Russian language learners living within and outside of the Russian Federation should use digital tools that let young learners feel connected to and integrated into the Russian culture, including Russian children’s subculture. This is very important for children of Russian immigrants who may be isolated from their heritage culture. However, the study shows that this could also be of high significance for Russian regions with high concentration of non-Russian ethnic groups. Three of the four sites were located in Tatar-speaking towns, while a private child center was in a predominantly bilingual (Tatar-Russian) large city of Russia. All of these sites were purposefully selected based on the criteria of using non-Russian (Tatar in our case) language of education and communication in their kindergartens/preschools.

Class observations and interviews demonstrated that teachers found important to integrate DLOs that included cultural components. For example, they used culturally specific materials from Live Fairytales™ that includes stories that happen in different parts of Russia (Yekaterinburg, Irkutsk, Sochi, Altay, Kostroma etc.), in a range of important for Russia geographical locations (Lake Seliger, Lake Baikal, the Volga River, the Vyatka River, the Urals) with people of different nationalities (the Russians, Tatars, Bashkirs, Chuvashs, Mari, Yakuts, Udmurts). Teachers indicated children’s interest to learn what happens in other parts of Russia. For example, in one of modules in Live Fairytales™, the protagonist Misha learns how modern city apartments differ from traditional choom and this understanding Misha translates to children who listen to the story with him.

We argue that quality digital resources, just like quality print resources, may and should be used to develop intercultural and sociocultural competencies of young bi- and multilinguals. It is a matter of national interests of all multicultural nations.

4 CONCLUSIONS

Early childhood educators have started embracing the idea of integrating digital learning resources into their curriculum [5], [12]. Those involved into the speech development of bi- and multilingual young learners are looking for effective ways to apply available electronic material in their classrooms. In this context, it is important to outline conceptual dominants that language specialists should consider when selecting and integrating DLOs into their practices. This paper outlined and discussed four of such dominants, namely 1) the child-teacher-DLO trinity where the child’s individual needs play a key role, 2) the teacher as a subject of the learning process and an object of study, 3) DLO as a mediator of knowledge, virtual buddy and motivator, and 4) Russian language and culture as a consolidator of the Russian society and Russian community abroad.
The data drawn from four early childhood education sites, where interaction with and between children and adults is done mostly in Tatar, indicate teachers willingness to use digital material to support Russian language development but also show the necessity to expand teachers’ understanding of how this could be done most productively. Predominantly positive and sometimes even exhilarating reaction of children to the introduction into their classroom of interactive game-like exercises, virtual buddies and digital rewards give educators, administrators, policy makers and educational technology developers a sign that quality DLOs should be developed and practiced in early childhood education settings. Even though some stakeholders may oppose the use of computer and mobile devices by preschool children [13], others have already started seeing positive impact of thoughtful implementation of digital activities in the learning process of young and very young learners [8], [14], [15]. We argue that quality digital resources for young learners of Russian may promote productive interaction of a child, a teacher and a digital resource, contribute to learners’ engagement, support the development of her/his linguistic and sociocultural skills, and overall give a child a sense of pleasure from learning.

The transferability of the study findings is limited due to participation of only 4 sites with bilingual children. However, its results may inform policy makers, researchers and early childhood educators who are interested in how educational technologies are integrated into programs of speech development of young bilingual and multilingual preschoolers. In perspective, the study will also involve Russian learning centers situated outside of Russia.

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