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## **DEVELOPING BILITERACY IN THE DIGITAL AGE: THE CASE OF YOUNG EMERGENT BILINGUALS\***

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### **Abstract**

The social context of the educational process of children is characterized by the influence of two modern trends – the digitalization of education and the early development of biliteracy that is, the development of language and cognitive competencies in more than one language. This work is aimed at highlighting the theoretical and practical issues of development and preservation of biliteracy of preschool and early school age children acquiring Russian language as non-native, second native or heritage language. The study focuses on the development of children's biliteracy through digital learning objects (DLOs). The study object is of significant nature as educators and parents currently look for effective scenarios for the development of speech of bilingual children who grow in a digitally rich environment. The work is based on empirical data derived from a survey administered to parents ( $n=51$ ) and educators ( $n=17$ ) of 3-8 year-old children who study Russian as their non-native (second native) language or as their heritage language. The results indicate that while many educators and parents have little awareness of the theory and practice of bilingual education and biliteracy and place limited value on digital resources as language development tools, in most cases they recognize the instructional potential of digital learning objects and are ready to thoughtfully (in small increments) integrate these technologies in the programs of preschool educational organizations or in homeschooling.

*Keywords:* bilingualism, biliteracy, early childhood education, Russian

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### **1. Introduction**

The social context of the educational process of children is characterized by the influence of two modern trends – the digitalization of education and the early development of biliteracy. The concept of biliteracy implies a complex, dynamic and often nonlinear process of acquiring reading, writing, speaking and listening skills in two or more languages (Hopewell and Escamilla, 2014;

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Junaid et al., 2021; Khotimah and Hastuti, 2021). Moreover, biliteracy also implies the ability to learn, that is to perform cognitive operations, in more than two languages. With regard to children of preschool and early school age, it is customary to talk about “emerging biliteracy” as the term takes into account the long and dynamic process of developing thinking and language skills in two or more languages by very young children (Alshuaybat, 2021; Bauer and Gort, 2012; Pfenninger, 2022; Duke, 2021).

The study of biliteracy is directly related to the study of bilingualism. Previous research indicates that bilinguals may have cognitive, social, cultural and other advantages over monolinguals (Callahan and Gándara, 2014; Khalilovna Ashrapova et al., 2020; Pliatsikas et al., 2020; Ruhl et al., 2022; Zaripova et al., 2019).

This work is aimed at highlighting the theoretical and practical issues of development and preservation of biliteracy of preschool and early school age children acquiring Russian language as non-native, second native or heritage language. The study focuses on the development of children's biliteracy through digital learning objects (DLOs). The study object is of significant nature as both educators and parents currently look for effective scenarios for the development of speech of bilingual children who grow in a digitally rich educational environment. The work is based on empirical data derived from a survey, addressed to teachers and parents of (very) young bilingual children, for whom Russian is either a non-native (second native) language or a heritage language (a family language in the case of the Russian diaspora).

## 2. Methods

The purpose of this study is to determine the role and functional characteristics of digital learning objects (computer and mobile applications, educational websites) for the development and maintenance of Russian speech of children living in multilingual regions of the Russian Federation and abroad. A survey was administered to parents ( $n= 51$ ) and educators ( $n= 17$ ) of 3-8 year-old children who study Russian as their non-native (second native) language or as their heritage language.

The online questionnaire included 22 multiple choice questions and 3 open-ended questions. The main thematic blocks of this questionnaire are as follows: 1) Russian in the life of a child; 2) Adults' attitude to introducing a second (third) or heritage language to children under 8 years of age; 3) Materials and resources for introducing Russian to children under 8 years of age. The online questionnaire was completed by representatives of 17 countries.

## 3. Results and discussion

Scholars and educators generally identify two main models of biliteracy development – *parallel and sequential*. In a parallel model, language skills (speaking, listening, reading, and writing) develop in parallel in both languages. Bilingual programs, including immersion program (Hopewell and Escamilla, 2014) introduced at preschool and early school age are based on parallel learning. Studies show that bilingual students show higher academic outcomes and more opportunities for development than students in monolingual classes (Lindholm-Leary and Hernández, 2011).

Sequential learning in most cases involves the initial development of speech and language skills in the language of the family (mother tongue) which is later layered with a new language of the formal learning environment, usually the state language of the country. It is important to note that with sequential learning in the absence of targeted actions to support and develop the family language, the new language often replaces the first, and the family language can remain either in its infancy (for example, at the level of the basic spoken language) or completely disappear. The

family, the immediate environment and the formal education support system allow the family language to be preserved and promoted (Bauer and Gort, 2012).

With regard to biliteracy, it is important to emphasize that the process of biliteracy development and the process of monoliteracy development have significant differences (Bernhardt, 2003). When interacting and producing a text, a bilingual child uses all the linguistic skills available to him, not just the language skills of the text (Hornberger and Link, 2012), which monolingual training programs are unable to account for. Studies in recent years show that despite the fears of opponents of early bilingualism, the parallel development of the language abilities of more than one language does not lead to a stable mixing of languages but contributes to the progressive development of biliteracy (Reyes, 2012). Moreover, bilingual development leads to the formation of metalinguistic skills, that is biliteracy allows the learner to correlate and transfer from one language to another existing phonological, lexical, syntactic and morphological skills (Bauer and Gort, 2012; Hopewell and Escamilla, 2014).

The advantages of developing early biliteracy, however, are not always used in the educational process. Often, teachers and parents are extremely negative about the phenomenon in which the child uses two languages at once, not realizing that the so-called code switching, translanguaging and interlanguage are stages on the path of bilingualism and biliteracy and that the systemic parallel development of languages in the future gives higher academic results. These concerns are based on a lack of knowledge and practical skills in the field of bilingual education. Studies show that bilingual programs, parental support, as well as informal training sessions with teachers and interested members of the bilingual community allow the child to continue the development of biliteracy at school age (Fránquiz, 2012; Gort, 2019).

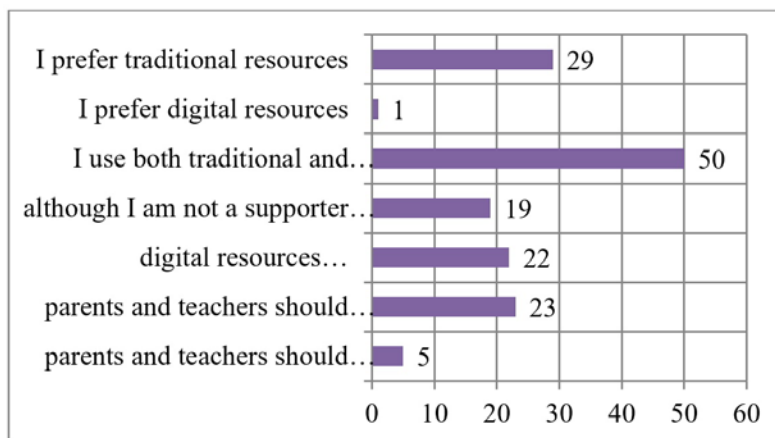
To examine the process of developing biliteracy among young Russian language learners who acquire Russian as their non-native, second native or heritage language, we conducted a survey that enabled to gather and analyze empirical data presented below. The overwhelming number of the respondents (72%) believe that a child/children should start learning their non-native, second native or heritage language from their birth (at the age of 0 to 3); one of the respondents added that based on his/her own experience infants are able to learn three languages simultaneously. Consequently, according to the majority of the respondents (85%), the acquisition of a non-native, second native or heritage language should go in parallel with the first language.

The respondents are also unanimous in the opinion that early bi- and multilingualism has a number of advantages. First of all, it helps to expand the circle of communication of a child/children (80%). Secondly, it can provide career opportunities in the future (77%). Thirdly, it helps a child/children to get acquainted with more than one culture (73%). Finally, it develops cognitive skills (65%). 96% of the respondents are engaged in the development of the Russian language of their child/children. The main ways of supporting Russian language acquisition, according to the responses, are as follows (from the most popular to the least):

- watching movies and cartoons (84%)
- reading books (74%)
- singing songs (72%)
- socializing with Russian-speaking friends (65%)
- trips to Russian-speaking relatives (50%)
- games with Russian-speaking children (50%)
- classes at school/educational centres (40%)
- traditional games (e.g. lotto, hide and seek, etc.) (32%)
- additional non-linguistic classes with a Russian-speaking teacher (23%)
- making crafts (22%)
- online classes (20%)
- going to Russian theatre plays (18%)
- electronic resources (18%)

- computer games in Russian (17%)
- classes with a tutor (13%).

The results of the questionnaire demonstrate that the majority of respondents choose to combine traditional and digital resources (50%) when working with bi- and multilingual children (Fig. 1). However, some of the respondents place limited value on digital resources as language development tools and either opt for traditional resources (29%) or use digital resources against their will merely to keep up with the times (19%).



**Fig. 1.** Answers to the question “How do you feel about using websites, computer programs or mobile applications to introduce children under 8 years of age to a second (third) or heritage language?” (%)

As regards the main obstacles that hinder educators and parents from using digital resources with (very) young bi- and multilingual children, they are as follows:

- a. the age of children (23%)
- b. the lack of a developed training program (a guide) that would help teachers and parents to infuse technology into the process of children’s language learning (17%)
- c. the lack of quality digital resources aimed at speech development of (very) young children (14%) (Fig. 2).

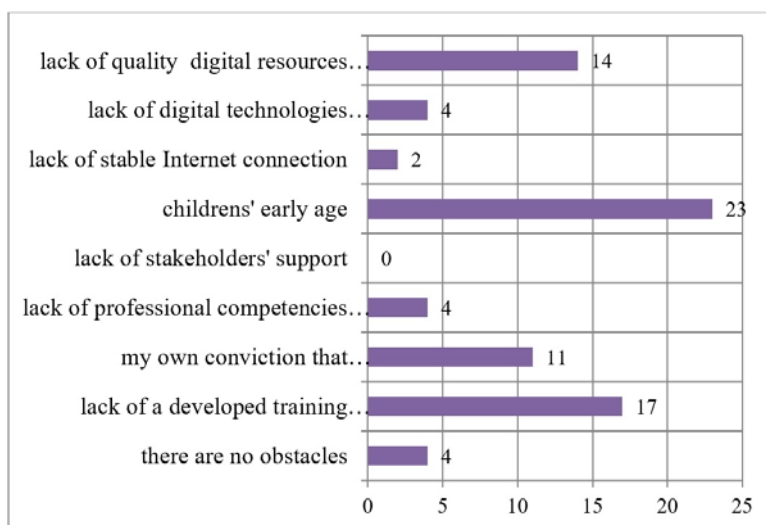
Those who take a neutral or favourable view on using digital resources and technologies noted that they use them in order to develop children’s listening skills (41%) and enrich their vocabulary (42%). Parents and educators value digital resources primarily for audio-visual, interactive, game-based, and motivational characteristics. Digital technologies are also viewed as tools for supporting children’s autonomy in learning; however, the adult should remain being the major mediator between digital screens and children (Fig. 3).

Authentic digital materials (cartoons, songs or storybooks) with rich culture-oriented content are highly valued by educators of heritage learners, while, teachers in Russia are interested in e-resources that can be easily integrated into the national curriculum.

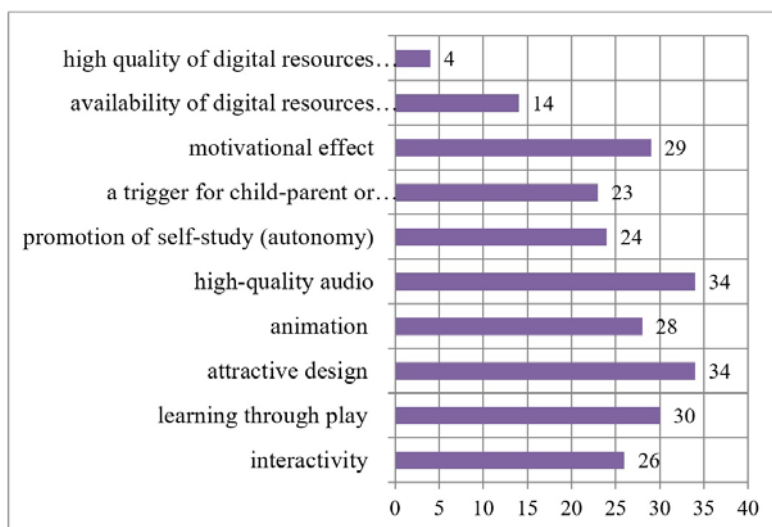
#### 4. Conclusions

The questionnaire addressed to teachers and parents of (very) young bilingual children, for whom Russian is either a non-native language (second native) or a heritage language (a family language in the case of the Russian diaspora), showed that despite the fact that many teachers and parents do not consider digital resources the main source and tool for the development of Russian

speech, in most cases they recognize the instructional potential of digital learning objects and are ready to thoughtfully (in small increments) integrate these technologies in the programs of preschool educational organizations or in homeschooling. This study also indicates a rather low level of awareness of the theory and practice of bilingual education and biliteracy, the lack of guidelines (programs) that would contribute to the effective use of digital resources with schoolchildren.



**Fig. 2.** Answers to the question ““What prevents you from using digital resources (websites, computer and mobile games, audio and video materials, etc.) and digital technologies (interactive whiteboards, tablets, computers, phones, etc.) for the development of the Russian language of children (child) up to 8 years old (you can choose several answers)?” (%)



**Fig. 3.** Answers to the question ““Why do you choose digital resources for the development of a language?” (%)

The results of the study allow us to talk about the need for active research and practical work in the field of development and preservation of bilingualism. Given previous experience, parallel (rather than sequential) learning of two or more languages seems to be the most effective. The context of learning and the individual characteristics of learners should be the basis for choosing a learning trajectory. Instructional technologies should be based on language comparison and transfer of metalinguistic competencies.

When forming the curricular of a biliteracy development program, the key is to determine the desired learning outcomes and design an assessment system that correlates to the established learning trajectory. It is important to understand that "benchmarking" should not focus on the system of assessing monoliteracy. Studies show that the use of a monolingual assessment system for bilinguals can lead to an underestimation of the real level of training and the use of inadequate development measures.

Moreover, we argue that the development of bilingualism and biliteracy should be one of the important indicators in the established assessment system, along with the development of other competencies of preschoolers and schoolchildren. We also support the idea that standards of biliteracy need to be established at the state (national, regional) level in regions where more than one language hold the status of a state language, which if the case in some regions of the Russian Federation.

In conclusion, it should be noted that the process of development of biliteracy can be based on different pedagogical and philosophical concepts, take different, but always contextually determined forms of implementation in formal, informal and home education. Despite the fact that in some cases developed and stable bilingualism can be the result of unintentional and spontaneous actions of the child's environment, in most cases it requires consistent and conscious actions on the part of educators and parents who want to develop and maintain the biliteracy of their children.

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