























- [19] Sullivan, A., Elkin, M., & Bers, M. U. (2015). KIBO Robot Demo: Engaging young children in programming and engineering. In Proceedings of the 14th International Conference on Interaction Design and Children (IDC '15). ACM, Boston, MA, USA.
- [20] Besshaposhnikov N.O. PERFORMANCE OF PARALLEL-COOPERATIVE TASKS IN EDUCATIONAL SYSTEM OF PROGRAMMING FOR PRESCHOOLERS AND PRIMARY SCHOOL PUPILS. Proceedings in Cybernetics. 2017;(4):154-163. (In Russ.).
- [21] Kalas I. Recognizing the potential of ICT in early childhood education. Analytical survey. UNESCO Institute for Information Technologies in Education. pp.1-149. (2010) URL: <https://iite.unesco.org/pics/publications/en/files/3214673.pdf> (accessed August 30, 2021).
- [22] Betelin, V.B., Kushnirenko A.G., Semenov A.L., Soprunov S.F. ABOUT DIGITAL LITERACY AND ENVIRONMENTS FOR ITS DEVELOPMENT. Informatics and Applications, 14(3), pp 100-107 (2020). DOI <https://dx.doi.org/10.14357/19922264200414>
- [23] Vygotsky. L. S. Myshlenie i rech' [Thinking and Speech]. Moscow, Labirint, 1999, pp. 352 (In Russ.).
- [24] Papert, S. (1980) Mindstorms: Children, Computers and Powerful Ideas, New York, Basic Books.
- [25] Ershov A. (1981) Programming, the Second Literacy, North-Holland Publishing Company, Microprocessing and Microprogramming 8 (1981) pp. 1-9. URL: [https://doi.org/10.1016/0165-6074\(81\)90002-8](https://doi.org/10.1016/0165-6074(81)90002-8)
- [26] Institute of Educational Technology, Samara, Russia, PiktoMir project participants. <https://inott.ru/projects/piktomir/uchastniki-doshkolnoe-obrazovanie/> (accessed August 30, 2021).

#### **Creative Commons Attribution License 4.0 (Attribution 4.0 International , CC BY 4.0)**

This article is published under the terms of the Creative Commons Attribution License 4.0 [https://creativecommons.org/licenses/by/4.0/deed.en\\_US](https://creativecommons.org/licenses/by/4.0/deed.en_US)