PRIMARY SCHOOL ENGLISH EDUCATION IN THE AGE OF INDUSTRY 4.0: TACKLING CHALLENGES, EXPANDING HORIZONS

M Bambang Purwanto[1], Issy Yuliasri[2], Widhiyanto[3], Fahrur Rozi[4]

[1,2,3,4]Universitas Negeri Semarang, Indonesia

mbambangpurwanto@students.unnes.ac.id, issy.yuliasri@mail.unnes.ac.id,
pakwidhi_english@mail.unnes.ac.id, frozi@mail.unnes.ac.id

ABSTRACT

This paper elaborates on the existence and dynamics of English language learning at the basic education level and its relevance to the era of disruption 4.0. With research methods of literature study type and descriptive-analytical techniques, this paper wants to describe research problems with the help of literature data from relevant writings, papers, journals, and scientific articles and books. This study explains several things that must be prepared for English language learning in the 4.0 era: infrastructure and technology, curriculum and learning methods, qualified teachers, teaching materials and resources, and parental support. Furthermore, the findings obtained are that opportunities that can be targeted include more comprehensive access to language learning resources, interactive and engaging learning experiences, the availability of global connectivity and language exchange, the availability of digital applications for language practice, and providing a practical evaluation and feedback system. Meanwhile, the challenges faced are uneven access to technology, uneven technical competence of users, language barriers, limited focus and attention span of students, and digital security risks.

Key Words: English Language Teaching, Challenge, Opportunities, Primary School.

INTRODUCTION

English has contributed to elementary school students in the 4.0 era. Ministerial Regulation Number 12 of 2024 concerning Curriculum in Early Childhood Education, Primary Education Level, and Secondary Education Level, Nadiem emphasized that English will be compulsory for elementary students and equivalent (Sahal, 2024). Melinda Puspita Sari Jaya et al. (2023) also state that English is proper for preparing for the challenges and opportunities of an increasingly connected world. The Ministry of Education and Culture is responsible for supporting the transition of maple English into compulsory subjects by providing teacher training for those who will teach English in elementary schools, MI, and the equivalent (Wulandari, 2024). English teacher training is said to occur during the transition period from maple to compulsory (N. et al., 2020). Meanwhile, the local government is responsible for providing English teachers in elementary schools in MI and the equivalent in the transition period of English subjects to compulsory (Caesaria & Ihsan, 2024). From this, the readiness for the return of English as a core subject in elementary schools is exceptionally qualified and positively impacts students.

In response to the policy issued by the government regarding the return of English subjects, which returned to become core subjects in elementary schools, of course, this is inseparable from the central role of English in the

current era of disruption 4.0. In education, especially for early childhood education, English is the language of instruction in many well-known universities and study programs worldwide (Hoa & Tuan, 2007). By mastering English, elementary school students will have wider opportunities to continue their education to a higher level and achieve their dreams (Khabibullayeva, 2024). Research from Elmurodova & Shermamatova (2023) that explaining English in elementary schools is needed because in Today's digital era where all systems use the language of instruction English, at least elementary school students can or can be equipped with an introduction to English so that children will not feel surprised by the current technological era, and children can have the basis to continue at the next level (Beshah & Anshu, 2024; Kang et al., 2023), And the same is true Isbell et al. (2023) Explaining that children have or have memory in a language in a child is so large, compared to adults, therefore English needs to be taught from an early age. From this, English learning in elementary schools is still required and needed even though some problems are found. English can or can be included in the curriculum so that it can be taught in all elementary schools, cities, and villages, as well as in all public and private elementary schools throughout Indonesia.

This article highlights the importance of English learning in primary schools in the context of globalization and technological advancement. English is a global communication tool that is key to accessing educational resources, information, and career opportunities in the 4.0 era. Furthermore, challenges such as the digital divide, lack of resources, challenges in adjusting the curriculum, and the need to prepare teachers to use technology in learning

and opportunities that arise in English learning in the 4.0 era, such as the use of technology in education, access to digital resources, international collaboration, and the development of 21st-century skills through English learning. Through the writing of this article is expected to open dialogue and reflection on how English education can be adapted to the 4.0 era, overcome emerging challenges, and take advantage of existing opportunities to provide quality education for elementary school students.

METHODOLOGY

This research uses library research methods or, in other words, literature study research methods. Syahfutra et al. (2020) explained that this method analyses activities related to library data collection methods, reading, recording, and processing research materials. This research uses a descriptive-analytical approach, which aims to describe research problems with the help of literature data sourced from writings (Suyitno, 2018), website reports, papers, journals, and relevant scientific and book articles (Darmalaksana, 2020). In this study, researchers conducted a literature study; the primary source obtained was in the form of Ministerial Regulation Number 12 of 2024 concerning Curriculum in Early Childhood Education, Basic Education Level, and Secondary Education Level, which explained that English would be a compulsory subject for elementary students and equivalent. Furthermore, it analyzes the opportunities and challenges in the 4.0 era in English learning at the basic education level.

FINDING AND RESULT

English Learning in Elementary Schools in the 4.0 era

English plays a vital role in the 4.0 era, as it is an international language used in global communication in various fields, including technology and business. In the 4.0 era, English skills are becoming increasingly important, as many resources and information in technology, business, and science are delivered in English.

The 4.0 era significantly impacts many aspects of human life, including education. As a subject, Rismadewi (2019) explained that English learning is sought to be able to provide encouragement, guidance, development, and coaching of students' competencies to foster positive perceptions of English, both through receptive and productive skills as fundamental competencies in language literacy (Simanjuntak et al., 2022). These skills are in the form of four essential language competencies, namely Listening, Speaking, Reading, and writing, which must be taught integrally (Purwanto, 2021).

The 4.0 era, marked by technological advances and globalization, significantly changed various aspects of life, including education. English learning in elementary schools must also adapt to this era to be more effective and valuable for students. Here are some things that must be prepared for English learning in the 4.0 era: 1) Infrastructure and Technology, 2) Curriculum and Learning Methods, 3) Qualified Teachers, 4) Teaching Materials and Resources, and 5) Parent and Community Support.

1. Infrastructure and Technology

In the learning process, infrastructure and technology play an essential role in achieving learning objectives; why? Because both can facilitate and greatly help teachers and students in the learning process. However, it must be remembered that infrastructure and technology should continue the role of teachers and social interaction in early childhood language learning**.** Kessler (2018) explains that technology should support and enrich the teaching and learning process, not as a substitute for human interaction, which is essential for children's language development. In the current 4.0 era, the role of infrastructure and technology is characterized by learning opportunities such as Hardware: Provide adequate hardware such as computers, laptops, tablets, and projectors to support technology-based English learning (Dunjko & Briegel, 2018). Internet Network: Ensuring stable and high-speed internet access to support the use of online platforms and digital learning resources (Goldstein & Papert, 1977), and Software: Providing appropriate software for English learning, such as educational applications, online learning platforms, and digital dictionaries (Huang et al., 2023). Examples of infrastructure and technology use in early childhood language learning: 1) Teachers can use projectors to display educational videos and children's songs. 2) Kids can use tablets or computers to play language learning apps. 3) Teachers can use online learning platforms to provide learning materials and assessments to children. 4) Children can use online communication platforms to communicate with friends from different countries.

2. Curriculum and Learning Methods

In the 4.0 era, education must prepare students to face the challenges and opportunities of technological developments and globalization. Semmler and Rose (2017) explain that appropriate curriculum and learning

methods are essential to achieve this goal, especially at the elementary school level. The importance is to ensure that the curriculum and learning methods used in primary schools not only prepare students for academic success (Weischedel et al., 1978) but also to become skilled individuals (WU et al., 2013), knowledgeable and competitive in an increasingly connected and rapidly changing world (Saini &; Goel, 2019). To achieve this success, teachers must formulate what curriculum and learning methods are appropriate for English learning in elementary schools, such as the Child Ability-Based Curriculum (Pingxiao, 2017)—developing an English curriculum that focuses on developing 21st-century skills (Pikhart, 2020), such as communication, collaboration, critical thinking, and creativity. Innovative Learning Methods (Zhang, 2020): Using innovative and exciting learning methods, such as project-based learning, game-based learning, and collaborative learning. Examples of learning Innovative learning methods in blended learning classes.

Figure one explains Digital Game-Based Learning (DGBL), or digital game-based learning, is a method that uses Today's game technology; any digital game can be called a medium or learning tool if there is a cognitive element of learning in it (Ibda, 2015; Joni, 2016; Nur et al., 2020). In this game-based lesson, students are expected to be able to learn and think directly through the actions taken by students in the game. 21st-century game learning Today's educational gameplay can be used as an alternative to enhance language learning in a fun experience and for students to learn ethnically. Thus, it can be said that by applying the Digital Game-Based Learning (DGBL) method, learning is not only exciting but also motivating because the form of the media is a game in which there is a mission or problem in the form of a game that interests students (Purwanto & Al Firdaus, 2023).

Utilization of Technology (Li et al., 2020): Utilizing technology to make learning more interactive, engaging, and personal for students.

Figure 1. Digital Game-Based Learning Method
Source:
https://www.meykkesantoso.com/2023/10/3-metode-pembelajaran-bahasa-inggris.html

Figure 2. The use of laptops as digital learning media
Source:https://www.quipper.com/id/blog/info-guru/contoh-media-pembelajaran-kreatif/

Figure two explains the role of learning media as a tool in the learning process to facilitate the process of student acceptance of teaching material

delivered by the teacher to achieve learning objectives. Tondeur (2018) said that learning media is a physical means of conveying the content or teaching materials. The physical facilities include books, tape recorders, video cameras, films, slides, photos, images, graphics, television, and computers (Levy, 2009).

According to Hol and Aydin (2020), in education, media is a learning facility that carries messages to students as a form of communication. Both in print and audio-visual equipment so that media can be manipulated, seen, read, and heard (Rost, 2002; Taghani & Ghafournia, 2018).

3. Qualified Teachers

In welcoming good English subject teaching resources in the era of disruption 4.0, developing English teacher competencies for elementary schools in the 4.0 era is significant to ensure that teachers can provide relevant and practical education to students. In this case, several key areas must be considered in developing English teacher competence, such as mastery of digital literacy (Astirini Swarastuti et al., 2024). Teachers need to have a solid understanding of technology and digital literacy. They should be familiar with educational software, online learning platforms, and other digital resources that can be used to improve English teaching (Adams, 2006). Technology-based learning (Nasar et al., 2024) means teachers must be able to integrate technology into their English learning. This includes the use of language learning apps, educational websites, videos, and audio in their learning to increase learning engagement and effectiveness (Alakrash & Abdul Razak, 2021) and creativity in teaching (Taghani & Ghafournia, 2018). In the 4.0 era, creativity is a precious skill. Teachers must be able to create a learning environment that stimulates student creativity in the use of English (Ali, 2020). This could involve using learning games, creative projects, and art activities that allow students to interact with language naturally and flexibly (Alfoudari et al., 2021; Azhary & Ratmanida, 2021).

Figure 3. Creativity in Teaching Teachers Utilizing Digital Technology
Source: https://sorogan.id/tips-belajar-efektif-kreatif-dan-kolaborasi-bagi-siswa-serta-guru-32814/

Figure three explains how the learning process is effective, creative, and collaborative for students and teachers, and it goes well and warmly. One of the processes emphasized in the 4.0 era is using digital literacy in the learning process. Teachers and students must possess this digital literacy ability when using technology or digital learning platforms. The school digital literacy movement, to increase the capacity of teachers and students, also needs to expand access to learning resources that can be utilized to make it easier for all students to access various information from the internet (Nurilahi et al., 2022; Rianto, 2019). Strategies to increase the capacity of teachers and students can also be by attracting practitioners related to information technology (IT) to assist in using digital platforms (Pendit, 2013). In addition, it can also strengthen school governance by developing an electronic

administration system (Rifad et al., 2023; Wulandari et al., 2022).

From the explanation above, it is concluded that developing English teacher competence in the 4.0 era is not only about understanding the technical aspects of language teaching but also about developing broader skills in using technology, stimulating creativity, understanding cultural diversity, and collaborating effectively.

4. Teaching Materials and Resources

In the 4.0 era, teachers can use various teaching materials and resources to teach English lessons effectively. These materials and teaching resources can be combined and adapted to student needs and English learning goals. Due & Ita (2019) explain that It is essential for teachers to choose resources appropriate to students' ability levels, interests, and learning contexts relevant to the digital age. The materials and teaching resources provided can be in the form of Authentic and Relevant Materials, which means giving learning materials that are authentic and relevant to students' daily lives (Rachman et al., 2019). Diverse Learning Resources (Misrawati & Suryana, 2021).

The media used in learning is a supporting factor significantly influencing learning (Hasan & Setiyaningtiyas, 2015). Students are invited to think critically about the reality in their lives. For example, they found environmental facts that exist in Kalimantan and seem never to reach the end of settlement. Students can write fantastic stories about congestion by presenting alternatives (creative thinking) (Agustiah et al., 2020). Some come up with ideas about environmental management that can be helpful in people's lives. Finally, the selection of fantasy stories about the fact of congestion has been criticized,

and the ability to find alternatives ends in solutions to innovative thinking (Media et al., 2014; Meinawati & Baron, 2019) and Social Media Utilization (Rianto, 2019): Utilizing social media to build English learning communities and encourage interaction between students. From the explanation above, using technology-based media will facilitate students and teachers in the teaching and learning process. Technology in learning can also develop the potential of students. Teachers can do this with educational, personality, social, and professional competence in the language field. The teacher position is closely related to motivation and willingness to serve to help students. For this reason, the profession of a teacher is vital to understanding the characteristics of students, including physical, moral, spiritual, social, cultural, emotional, and intellectual.

5. Parental Support

The active role of parents in the learning process at home will influence children's learning outcomes. The achievement of learning outcomes is a decisive value for children's achievement in school so that a child's good attitude and behavior can be pride, and parents can also design the future to achieve the best goals for children (Sumarsono, 2015). Many schools have realized the importance of English in children's development. In this case, the role of parents is also vital in supporting the English learning process at school (Fabiana et al., 2019). However, in addition to learning at school, the role of parents in helping their children to be good at English is also vital. The following is the role of parents in the child's English learning process:

- **Create an English Environment at Home** (Diniyah, 2017)
  Parents have a significant role in creating a supportive English

environment at home. Children can start by using everyday English in family conversations. In addition, watching movies and TV shows or listening to English music with children is an effective way to introduce them to the language. An environment that supports English will help children feel comfortable and interested in learning.

- **Interacting with Children in English** (Liando & Tatipang, 2022)

  During daily activities, parents can actively interact with children using English. For example, when playing with children, parents can teach them basic English vocabulary, such as colors, shapes, and numbers. This interaction helps children understand and remember English better, besides what they learned in school.

- **Support Homework and School Activities** (Griva & Chouvarda, 2012)

  Parents can support children with homework and school activities. It involves assisting children in completing tasks assigned by teachers and encouraging them to develop skills in English. It also includes active participation in school events, such as performances, English competitions, and other activities involving the use of English.

- **Encouraging Children to Speak English** (Indrawati, 2013)

- Parents can encourage children to speak English actively and audience actively. Encouraging them to talk about their daily activities, experiences, and feelings in English is an effective way to practice their speaking skills.

English Learning Opportunities in the 4.0 Era

As a phenomenon that has occurred since the rolling of the 4.0 to 5.0 era Today, digital technology has penetrated spaces in various aspects of human life, including English learning, even since elementary education. Telephones, computers, the internet, multimedia, and other digital devices have begun to replace manual labor systems that are slowly being abandoned (Zhetpisbayeva et al., 2017). Xolbayev & Ikromova (2024) explained that the age of students at the basic education level are usually always interested in new things, and technology is something new for children; therefore, educators must be able to seize this opportunity by utilizing it to attract students' learning interest.

If we explore, several opportunities can be utilized through the development of digital technology Today to build digital learning through English learning at the basic education level. First, more comprehensive access to language learning resources (Wedin et al., 2021). Currently, both educators and students can access online English learning resources.

Second, interactive and engaging learning experiences (Casanova et al., 2024). Currently, applications and digital platforms offer interactive and engaging learning experiences that can increase the motivation and effectiveness of English learning at the basic education level. Based on existing research results, multimedia content, gamification elements, quizzes, and interactive exercises make language learning more fun and effective. For advanced levels, students can also engage with videos, podcasts, and interactive activities to improve listening, speaking, reading, and writing skills.

Third, global connectivity and language exchange are available (Sunanta & Weerapong Paengkamhag,

2024). Digital literacy allows language learners to connect with target language speakers from all over the world. Social media platforms, language learning communities and groups, and language exchange websites provide opportunities for virtual language practice, cultural exchange, and relationship building with native speakers.

Challenges of English Language Learning in the 4.0 Era

Based on previous explanations, digital literacy has transformed into the engine of Today's civilization and the driving force of the information age. Hol & Aydin (2020) explain positive opportunities in digital technology that can be utilized optimally to support the effectiveness and achievement of English learning goals at the basic education level. However, in terms of digital literacy, our country still needs to catch up because it has an index of 3.54 on a scale of 5, including digital skills, digital security, digital culture, and digital ethics (Agustini, 2023). If percentaged, the digital literacy rate of the Indonesian nation is the lowest in ASEAN, reaching only 62 percent (K. Anam, 2023). Therefore, efforts need to be made so that the Indonesian nation is more digitally literate to catch up, one of which is through the world of education (KEMENDIKBUD RI, 2021). However, several research results show that there are challenges in implementing digital literacy in English learning at the basic education level and that these challenges need to be addressed by teachers and students.

First, uneven access to technology (Morales et al., 2024). Not all students have the same access to technological devices, such as computers, tablets, or reliable internet connections. This lack of access can hinder their ability to participate fully in digital English learning activities. Economic, geographical, and educational institution facilities can also influence this.

Second, the uneven technical competence of users, both educators and students (Mubinabonu & Sohib, 2024). Some teachers still struggle and need help effectively integrating digital tools and resources into their English teaching. Not all students at the basic education level are accustomed to using various digital devices and applications. They must also gain the technical skills to navigate digital platforms or applications. It is mainly related to English learning, which is undoubtedly filled with English characters, letters, vocabulary, and terms. Similarly, I can write or type using an English keyboard.

Third, language barriers (Nakao et al., 2024). The language barrier can be challenging for students learning English as a second language. They may have difficulty understanding instructions or navigating through digital resources if they are unavailable in their native language because they often use international languages such as English.

CONCLUSION

The study of English learning for elementary schools in the era of disruption 4.0 is marked by technological advances and globalization, bringing significant changes in various aspects of life, including education. English learning in elementary schools needs to adapt to this era to be more effective and beneficial for students. Learning English in the 4.0 era requires careful preparation to be effective and valuable for students. By preparing adequate infrastructure, curriculum, teachers, materials, and support, schools and communities can create a quality

English learning environment and help students reach their potential. This research review contributes to English learning for elementary school students in the 4.0 era from the point of view of the urgency of its application. English lessons significantly contribute to primary school students in the 4.0 era by helping them develop global communication skills, access to educational and information resources, technological skills, collaborative and creative learning, and essential 21st-century skills. This allows students to become skilled, knowledgeable, and ready to compete in an increasingly connected and rapidly changing world.

REFERENCES

Adams, C. (2006). Geek's guide to teaching in the modern age. *Instructor*, *115*(7), 48–51.

Agustiah, D., Fauzi, T., & Ramadhani, E. (2020). Dampak Penggunaan Media Sosial Terhadap Perilaku Belajar Siswa. *ISLAMIC COUNSELING Jurnal Bimbingan Konseling Islam*, *4*(2), 181. https://doi.org/10.29240/jbk.v4i2.1935

Agustini, P. (2023). *Indeks Literasi Digital Indonesia Kembali Meningkat Tahun 2022*. Aptika.Kominfo.Go.Id. https://aptika.kominfo.go.id/2023/02/indeks-literasi-digital-indonesia-kembali-meningkat-tahun-2022/

Alakrash, H. M., & Abdul Razak, N. (2021). Technology-based language learning: investigation of digital technology and digital literacy. *Sustainability*, *13*(21), 12304. https://doi.org/10.3390/su132112304

Alfoudari, A. M., Durugbo, C. M., & Aldhmour, F. M. (2021). Understanding socio-technological challenges of smart classrooms using a systematic review. *Computers & Education*, *173*, 104282. https://doi.org/10.1016/j.compedu.2021.104282

Ali, Z. (2020). Artificial intelligence (AI): A review of its uses in language teaching and learning. *IOP Conference Series: Materials Science and Engineering*, *769*(1), 12043. https://doi.org/10.1088/1757-899X/769/1/012043

Anam, K. (2023). *Paling Rendah di ASEAN, Tingkat Literasi Digital RI Cuma 62%*. Cnbcindonesia.Com. https://www.cnbcindonesia.com/tech/20230214171553-37-413790/paling-rendah-di-asean-tingkat-literasi-digital-ri-cuma-62

Anam, N. K., & Afroni, M. (2020). Peran Penting Orang Tua Dalam Pembelajaran Bahasa Inggris Pada Anak Usia Dini. *Jurnal Imliah Promis*, *1*(2), 3. https://journal.stitpemalang.ac.id/index.php/Promis/article/view/302/216

Anasy, Z. (2016). Hots (Higher Order Thinking Skill) in Reading Exercise. *TARBIYA: Journal of Education in Muslim Society*, *3*(1), 51–63. https://doi.org/10.15408/tjems.v3i1.3886

Astirini Swarastuti, Budiyanto, B., & M Bambang Purwanto. (2024). Management Of English Learning To Improve Digital-Based Language Literacy Skills. *International Journal of Education, Vocational and Social Science*, *3*(01 SE-Articles), 202–215. https://doi.org/10.99075/ijevss.v3i01.672

Azhary, L., & Ratmanida, R. (2021). Implementing 21st-century skills (communication, collaboration, creativity, and critical thinking) in English lesson plans at MTsN 6 Agam. *Journal of English Language Teaching*, *10*(4), 608–623. https://doi.org/10.24036/jelt.v10i4.114944

Beshah, M. M., & Anshu, A. H. (2024). Evaluating the relationship between training expectations of teachers and the received training: Pre-service

primary school English teachers in focus. *Social Sciences & Humanities Open*, *p. 9*, 100815. https://doi.org/https://doi.org/10.1016/j.ssaho.2024.100815

Bonar Siagian, & M Bambang Purwanto. (2023). Lextutor English Learning Pronunciation and Vocabulary: A Language Data Base Program. *PUSTAKA: Jurnal Bahasa Dan Pendidikan*, *4*(1 SE-Articles), 116–130. https://doi.org/10.56910/pustaka.v4i1.1062

Caesaria, S. D., & Ihsan, D. (2024). *Bahasa Inggris Jadi Mata Pelajaran Wajib Siswa SD dan MI Mulai 2027*. Kompas.Com. https://www.kompas.com/edu/read/2024/03/30/204421471/bahasa-inggris-jadi-mata-pelajaran-wajib-siswa-sd-dan-mi-mulai-2027

Darmalaksana, W. (2020). Metode Penelitian Kualitatif Studi Pustaka dan Studi Lapangan. *Pre-Print Digital Library UIN Sunan Gunung Djati Bandung*, 1–6.

Diniyah, F. (2017). Persepsi orang tua dan guru mengenai bahasa inggris pada anak usia dini di TK Aba Karangmalang Yogyakarta. *Tarbiyah: Jurnal Ilmiah Kependidikan*, *6*(2). https://doi.org/10.18592/tarbiyah.v6i2.1594

Due, G., & Ita, E. (2019). Pengembangan Media Pembelajaran Apron Hitung Untuk Meningkatkan Kemampuan Berhitung Anak. *Al-Athfaal: Jurnal Ilmiah Pendidikan Anak Usia Dini*, *2*(2), 14–31. https://doi.org/10.24042/ajipaud.v2i2.5213

Dunjko, V., & Briegel, H. J. (2018). Machine learning and artificial intelligence in the quantum domain: a review of recent progress. *Reports on Progress in Physics*, *81*(7), 74001. https://doi.org/10.1088/1361-6633/aab406

Elmurodova, G., & Shermamatova, Z. (2023). The Best Methods of Teaching Foreign Languages to Primary School Children. *Journal of Language Pedagogy and Innovative Applied Linguistics*, *1*(4 SE-Articles), 170–174. https://doi.org/10.1997/xeyjhk42

Fabiana Meijon Fadul. (2019). *Pandangan Orang Tua Tentang Bahasa Inggris Untuk Anak Usia Dini*. Uiniersitas Pendidikan Indonesia.

Goldstein, I., & Papert, S. (1977). Artificial intelligence, language, and the study of knowledge. *Cognitive Science*, *1*(1), 84–123.

Griva, E., & Chouvarda, P. (2012). Developing Plurilingual Children: Parents' Beliefs and Attitudes towards English Language Learning and Multilingual Learning. *World Journal of English Language*, *2*(3), 1–13. https://doi.org/10.5430/wjel.v2n3p1

Hasan, A., & Setiyaningtiyas, N. W. (2015). Pengaruh electronic word of mouth pada media sosial Facebook terhadap keputusan berkunjung ke Desa Wisata Nglanggeran Gunungkidul. *Media Wisata*, *13*(1).

Hoa, N. T. M., & Tuan, N. Q. (2007). Teaching English in Primary Schools in Vietnam: An Overview. *Current Issues in Language Planning*, *8*(2), 162–173. https://doi.org/10.2167/cilp106.0

Hol, D., & Aydin, I. (2020). Is Technology in Our Classrooms? EFL Teachers' Beliefs and Engagement with Technology in the Classroom. *Journal of Educational Issues*, *6*(2), 38–58. https://doi.org/10.5296/jei.v6i2.17326

Huang, X., Zou, D., Cheng, G., Chen, X., & Xie, H. (2023). Trends, research issues and applications of artificial intelligence in language education. *Educational Technology & Society*, *26*(1), 112–131.

https://doi.org/10.1080/09588221.20 21.1879162

Ibda, F. (2015). Perkembangan Kognitif: Teori Jean Piaget. *Intelektualita*, *3*(1), 242904.

Indrawati, D. (2013). Parents' Roles Toward Their Bilingual Kindergarten Children's Language Learning: A Case Study. In *Universitas Kristen Satya Wacana*.

Isbell, D. R., Crowther, D., & Nishizawa, H. (2023). Speaking performances, stakeholder perceptions, and test scores: Extrapolating from the Duolingo English test to the university. *Language Testing*, *41*(2), 233–262. https://doi.org/10.1177/02655322231 165984

Joni. (2016). Peningkatan Kemampuan Kognitif Anak dalam Kegiatan Berhitung dengan Permainan Dadu TK Mutiara Pekanbaru. *Jurnal PAUD STKIP PTT*, *2*(1), 609–618. https://doi.org/10.1006/cbir.1995.110 8

Kang, O., Yan, X., Kostromitina, M., Thomson, R., & Isaacs, T. (2023). Fairness of using different English accents: The effect of shared L1s in the Duolingo English test listening tasks. *Language Testing*, *41*(2), 263–289. https://doi.org/10.1177/02655322231 179134

KEMENDIKBUD RI. (2021). *Penggunaan Teknologi Tepat Sasaran Jadi Kunci Pemerataan dan Peningkatan Kualitas Pendidikan*. Ult.Kemdikbud.Go.Id. https://www.kemdikbud.go.id/main/b log/2021/05/penggunaan-teknologi-tepat-sasaran-jadi-kunci-pemerataan-dan-peningkatan-kualitas-pendidikan

Kessler, G. (2018). Technology and the future of language teaching. *Foreign Language Annals*, *51*(1), 205–218. https://doi.org/10.1111/flan.12318

Khabibullayeva, S. (2024). Teaching Through Strategic Competence at Primary School: Empowering Young Minds for Success. *Conference Proceedings: Fostering Your Research Spirit*, 360–362. https://doi.org/10.2024/7qad7r35

LEVY, M. (2009). Technologies in Use for Second Language Learning. *The Modern Language Journal*, *93*(s1), 769–782. https://doi.org/https://doi.org/10.1111 /j.1540-4781.2009.00972.x

Li, J.-P., Mirza, N., Rahat, B., & Xiong, D. (2020). Machine learning and credit ratings prediction in the age of the fourth industrial revolution. *Technological Forecasting and Social Change*, *161*, 120309. https://doi.org/https://doi.org/10.1016 /j.techfore.2020.120309

Liando, N. V. F., & Tatipang, D. P. (2022). English or Indonesian Language? Parents' Perception Toward Children's Second Language Learning Context. *Jurnal Lingua Idea*, *13*(1), 61–75. https://doi.org/https://doi.org/10.2088 4/1.jli.2022.13.1.5749

McCarten, J. (2007). Teaching vocabulary. *Lessons from the Corpus. Lessons from the Classroom*.

Media, P., Monopoli, P., Tema, I. P. A., Kehidupan, O., Sumber, S., Untuk, B., & Smp, S. (2014). Pengembangan Media Pembelajaran Monopoli Ipa Tema Organisasi Kehidupan Sebagai Sumber Belajar Untuk Siswa Smp. *USEJ - Unnes Science Education Journal*, *3*(2), 468–475. https://doi.org/10.15294/usej.v3i2.33 30

Meinawati, E., & Baron, R. (2019). Media Sosial Dan Pembelajaran: Studi Efektivitas Penggunaan Facebook Dalam Pembelajaran Bahasa Inggris. *Jurnal Tatsqif*, *17*(1), 34–51. https://doi.org/10.20414/jtq.v17i1.67 9

Melinda Puspita Sari Jaya, Santa Idayana Sinaga, & Bambang Purwanto, M. (2023). Parents' Perceptions of

Learning English For Early Children. *JELLT (Journal of English Language and Language Teaching)*, *7*(2 SE-), 1–12. https://doi.org/10.36597/jellt.v7i2.14563

Misrawati, M., & Suryana, D. (2021). Bahan Ajar Matematika Berbasis Model Pembelajaran Tematik terhadap Kemampuan Berhitung Anak Usia Dini. *Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini*, *6*(1), 298–306. https://doi.org/10.31004/obsesi.v6i1.1249

Morales, S., Clarisó, R., & Cabot, J. (2024). LangBiTe: A Platform for Testing Bias in Large Language Models. *ArXiv Preprint ArXiv:2404.18558*.

Mubinabonu, A., & Sohib, E. R. (2024). Technological Transformations in Uzbekistan's Language Classrooms: A Gateway To Globalized Education. *American Journal Of Social Sciences And Humanity Research*, *4*(02), 50–59.

Nakao, K., Oga-Baldwin, Q. W. L., & Fryer, L. K. (2024). Developing Phoneme-Grapheme Recognition for English as a Foreign Language: A Longitudinal Study at Japanese Primary School. *International Electronic Journal of Elementary Education*, *16*(3 SE-Articles), pp. 337–347. https://www.iejee.com/index.php/IEJEE/article/view/2143

Nasar, I., Nurdianingsih, F., Rahmi, E., & Purwanto, M. B. (2024). Values Of Character Education: Study of Strengthening the Culture of Digital Literacy for Youth in Disruptive 5.0 Era. *Gema Wiralodra*, *15*(1 SE-Articles), 596–604. https://doi.org/10.31943/gw.v15i1.688

Nur, L., Hafina, A., & Rusmana, N. (2020). Kemampuan Kognitif Anak Usia Dini Dalam Pembelajaran Akuatik. *Scholaria: Jurnal Pendidikan Dan Kebudayaan*, *10*(1), 42–50.

https://doi.org/10.24246/j.js.2020.v10.i1.p42-50

Nurilahi, A., Hidayati, D., Hidayat, A., & Usmar, R. J. (2022). Kepemimpinan Instruksional dalam Peningkatan Literasi Digital Guru. *Jurnal Pendidikan Tambusai*, *6*(1), 441–448.

Pendit, P. L. (2013). Digital Native , Literasi Informasi dan Media Digital – sisi pandang kepustakawanan. *Seminar Dan Lokakarya Perubahan Paradigma Digital Natives Perpustakaan Universitas - Universitas Kristen Satya Wacana Salatiga 17 - 18 Januari 2013*, 1–32. https://www.semanticscholar.org/paper/Digital-Native%2C-Literasi-Informasi-dan-Media-%3A-sisi-Pendit/1ed653f61ce6ce178dee0cb255419d0492a92afc

Pikhart, M. (2020). Intelligent information processing for language education: Artificial intelligence in language learning apps. *Procedia Computer Science*, *176*, 1412–1419. https://doi.org/10.1016/j.procs.2020.09.151

Pingxiao, W. (2017). Research on English teaching and autonomous learning based on multimedia platforms and smart classroom systems. *International Journal of Multimedia and Ubiquitous Engineering*, *12*(1), 351–362. https://doi.org/10.14257/ijmue.2017.12.1.30

Porsayeva M.M., & Muxtarova Sh.F. (2024). Some Features Of Teaching English at Primary Schools of Uzbekistan. *Conference Proceedings: Fostering Your Research Spirit*, 284–286. https://doi.org/10.2024/vv94k407

Primayana, K. H. (2020). Menciptakan Pembelajaran Berbasis Pemecahan Masalah Dengan Berorientasi Pembentukan Karakter Untuk Mencapai Tujuan Higher Order Thingking Skilss (HOTS) Pada Anak Sekolah Dasar. *Purwadita: Jurnal Agama Dan Budaya*, *3*(2), 85–92.

https://doi.org/10.55115/purwadita.v3i2.367

Purwanto, M. B. (2021). The Role of Teachers in the English Language Learning Process at SMP Karya Sembawa, Kab. Banyuasin, Sumatra Selatan. *Darussalam English Journal*, *1*(2), 171–195. https://doi.org/10.30739/dej.v1i2.1240

Purwanto, M. B., & Al Firdaus, M. M. (2023). Analysis of Students' Learning Motivation: Psychometric Parameters Study of Learning English Courses in the Business Travel Department. *Metathesis: Journal of English Language, Literature, and Teaching*, *7*(1), 86–96. https://doi.org/10.31002/metathesis.v7i1.414

Qi, G. Y. (2016). The importance of English in primary school education in China: perceptions of students. *Multilingual Education*, *6*(1), 1. https://doi.org/10.1186/s13616-016-0026-0

Rachman, S. A., Rival, R., & Haerul, H. (2019). Analisis Kesalahan-Kesalahan Gramatikal Dalam Tulisan Bahasa Inggris Mahasiswa Pendidikan Guru Sekolah Dasar FIP UNM. *JIKAP PGSD: Jurnal Ilmiah Ilmu Kependidikan*, *3*(3), 249. https://doi.org/10.26858/jkp.v3i3.10227

Rakhmatova, M., & Vafaeva, Z. (2024). Features of Teaching English to Primary School Children. *Journal of Language Pedagogy and Innovative Applied Linguistics*, *2*(3 SE-Articles), 6–10. https://doi.org/10.1997/vnxdeq63

Rianto, P. (2019). Literasi digital dan etika media sosial di era post-truth. *Interaksi: Jurnal Ilmu Komunikasi*, *8*(2), 24. https://doi.org/10.14710/interaksi.8.2.24-35

Rifad, M., Alhabsyi, F., & Nadirah, S. (2023). Kepemimpinan Transformatif Kepala Sekolah Dalam Meningkatkan Kemampuan Literasi Digital Tenaga Pendidik di SD Alkhairaat 1 Palu. *Jurnal Integrasi Manajemen Pendidikan*, *2*(1), 49–58. https://doi.org/10.24239/jimpe.v2i1.1866

Rismadewi, N. W. M. (2019). Penerapan Model Creative Problem Solving Pada Guru Sebagai Upaya Meningkatkan Prestasi Belajar Siswa Pada Mata Pelajaran Bahasa Inggris. *Indonesian Journal Of Educational Research and Review*, *2*(3), 302. https://doi.org/10.23887/ijerr.v2i3.23217

Rost, M. (2002). Listening tasks and language acquisition. *Memorias Del Congreso JALT 2002*, 18–28.

Sahal, U. (2024). *Soal Menteri Nadiem Bakal Wajibkan Pelajaran Bahasa Inggris untuk Sekolah Dasar, Ini Kata Dosen UM Surabaya*. Wartaums.Com. https://www.um-surabaya.ac.id/article/soal-menteri-nadiem-bakal-wajibkan-pelajaran-bahasa-inggris-untuk-sekolah-dasar-ini-kata-dosen-um-surabaya

Saini, M. K., & Goel, N. (2019). How smart are smart classrooms? A review of smart classroom technologies. *ACM Computing Surveys (CSUR)*, *52*(6), 1–28. https://doi.org/10.1145/3365757

Semmler, S., & Rose, Z. (2017). Artificial Intelligence: Application Today and implications tomorrow. *Duke L. & Tech. Rev.*, *16*, 85.

Shinde, M. B., & Karekatti, T. K. (2012). Pre-service teachers' beliefs about teaching English to primary school children. *International Journal of Instruction*, *5*(1).

Simanjuntak, M. B., Suseno, M., Setiadi, S., Lustyantie, N., & Barus, I. R. G. G. (2022). Integration of Curricula (Curriculum 2013 and Cambridge Curriculum for Junior High School Level in Three Subjects) in Pandemic Situation. *Ideas: Jurnal Pendidikan,*

Sosial, Dan Budaya, *8*(1), 77. https://doi.org/10.32884/ideas.v8i1.6 15

Soliyeva, Z., & Xamroqulov, A. (2024). THE ROLE OF HOMEWORK IN TEACHING PRIMARY SCHOOL CHILDREN. *Conference Proceedings: Fostering Your Research Spirit*, 116–119. https://doi.org/10.2024/r9e0ek17

Suchona, I. J., & Shorna, S. A. (2019). Speaking Problems in English and Solutions: Scrutinizing Students' Perspective. *Shanlax International Journal of English*, *8*(1), 34–41. https://doi.org/10.34293/english.v8i1 .661

Sudina, E., & Plonsky, L. (2024). The effects of frequency, duration, and intensity on L2 learning through Duolingo: A natural experiment. *Journal of Second Language Studies*, *7*(1), 1–43. https://doi.org/10.1075/jsls.00021.plo

Sumarsono, R. B. (2015). Penumbuhan Budi Pekerti Melalui Peran Orang Tua dan Guru di Sekolah. *Prosiding Seminar Nasional Pendidikan. Malang: Universitas Negeri Malang*.

sunanta, panya, & Weerapong Paengkamhag. (2024). Teaching English Methods for Primary School Teachers. *Journal of Lanna Societies*, *2*(1 SE-Academic Article), 38–50. https://so13.tci-thaijo.org/index.php/jls/article/view/ 530

Suyitno. (2018). Metode Penelitian Kualitatif: Konsep, Prinsip, dan Operasionalnya. In *Akademia Pustaka* (Issue August).

Syahfutra, W., Ramadhan, S., & Akhyar, Y. (2020). Metodelogi Penelitian Pendidikan. *Stit Al-Hikmah Bumi Agung Way Kanan*, *1*(1), 1–74.

Taghani, H., & Ghafournia, N. (2018). The Impact of Multimedia Content on Teaching Listening Comprehension: A Study of Iranian Secondary School Learners. *International Journal of Educational Investigations*, *5*(3), 43–56.

Tondeur, J. (2018). Enhancing future teachers' competencies for technology integration in education: Turning theory into practice. *Seminar. Net*, *14*(2), 216–224. https://doi.org/10.7577/seminar.2981

Usanova, G., Iskandarova, S., & Jurayev, N. (2024). Developing Listening Skills Of Young Learners in Primary Education. *Conference Proceedings: Fostering Your Research Spirit*, 242–246. https://doi.org/10.2024/1fyv3769

Wedin, Å., Rosén, J., & Straszer, B. (2021). Multi-Layered Language Policy and Translanguaging Space a Mother Tongue Classroom in Primary School in Sweden. *International Electronic Journal of Elementary Education*, *13*(5 SE-Articles), 699–711. https://www.iejee.com/index.php/IEJ EE/article/view/1217

Weischedel, R. M., Voge, W. M., & James, M. (1978). An artificial intelligence approach to language instruction. *Artificial Intelligence*, *10*(3), 225–240.

Wijayanto, B. (2018). I am learning Activities in Higher Order Thinking Skill (Hots) Oriented Learning Context. *GEOSFERA INDONESIA*, *3*(2), 122–130. https://doi.org/doi: 10.19184/geosi.v3i2.8126

WU, J., KATO, T., & YANG, D. (2013). Developing a smart classroom for Chinese language learning using a smartphone and tablet. *Educational Technology Research*, *36*(1–2), 153–165. https://doi.org/10.15077/etr.KJ00008 877033

Wulandari, Maria Adventina Sunardiyah, Susilo Surahman, Pandu Adi Cakranegara, & Hermyn B. Hina. (2022). Manajemen Kepemimpinan Transformatif dalam Mengembangkan Budaya Literasi di Sekolah Dasar Negeri 34 Sebelitak .

EDUKASIA: Jurnal Pendidikan Dan Pembelajaran, *3*(3 SE-Articles), 857–864. https://www.jurnaledukasia.org/index.php/edukasia/article/view/207

Wulandari, T. (2024). *Mapel Bahasa Inggris Wajib Mulai TA 2027/2028 di SD, MI, dan Sederajat*. DetikEdu.Com. https://www.detik.com/edu/sekolah/d-7265127/mapel-bahasa-inggris-wajib-mulai-ta-2027-2028-di-sd-mi-dan-sederajat

Xolbayev, F., & Ikromova, G. (2024). EFFECTIVE TEACHING METHODS IN PRIMARY SCHOOLS. *Conference Proceedings: Fostering Your Research Spirit*, 120–122.

https://doi.org/10.2024/7qg73h87

Zhang, X. (2020). The Application Research of Artificial Intelligence and Big Data Analysis Technology in University Foreign Language Teaching. *Journal of Physics: Conference Series*, *1684*(1), 12022. https://doi.org/10.1088/1742-6596/1684/1/012022

Zhetpisbayeva, B. A., Shelestova, T. Y., & Abildina, S. K. (2017). Examining teachers' views on implementing English as L3 into primary schools: A case of Kazakhstan. *International Electronic Journal of Elementary Education*, *8*(4 SE-Articles), 659–674. https://www.iejee.com/index.php/IEJEE/article/view/139