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DIGITAL AND AI-ASSISTED TOOLS IN TEACHING ENGLISH TO YOUNG LEARNERS: METHODOLOGICAL FOUNDATIONS AND CLASSROOM PRACTICE

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Abstract

The article examines the methodological foundations for the use of digital and AI-assisted tools in teaching English to young learners. It argues that the value of a tool is determined by the learning function it performs rather than by its technical capability, and classifies tools accordingly into presentation and input, practice and repetition, production and interaction, and assessment and record-keeping. Three realistic classroom functions of AI-assisted tools are distinguished from claims unsupported by classroom evidence. The constraints specific to young learners are examined, and selection criteria together with the required teacher competences are proposed.

Keywords: young learners, digital tools, artificial intelligence, computer-assisted language learning, multimedia learning, differentiation, feedback, screen time, teacher competence, selection criteria.



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KICHIK YOSHDAGI O‘QUVCHILARGA INGLIZ TILINI O‘RGATISHDA RAQAMLI VA SUN’IY INTELLEKTGA ASOSLANGAN VOSITALAR: METODIK ASOSLAR VA DARSDAGI AMALIYOT

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Annotatsiya

Maqolada kichik yoshdagi o‘quvchilarga ingliz tilini o‘rgatishda raqamli va sun’iy intellektga asoslangan vositalardan foydalanishning metodik asoslari tahlil qilinadi. Vositaning qiymati uning texnik imkoniyati bilan emas, bajaradigan o‘quv vazifasi bilan belgilanishi asoslanib, vositalar to‘rt guruhga — material taqdim etuvchi, mashq qildiruvchi, nutq hosil qildiruvchi va baholovchi guruhlarga ajratiladi. Sun’iy intellektga asoslangan vositalarning darsdagi uchta real vazifasi dalilga asoslanmagan da’volardan farqlanadi. Kichik yoshdagi o‘quvchilarga xos cheklovlar ko‘rib chiqilib, vositani tanlash mezonlari va o‘qituvchidan talab etiladigan kompetensiyalar taklif etiladi.

Kalit so‘zlar: kichik yoshdagi o‘quvchilar, raqamli vositalar, sun’iy intellekt, kompyuter yordamida til o‘rgatish, multimedia ta’lim, tabaqalashtirish, qayta aloqa, ekran vaqti, o‘qituvchi kompetensiyasi, tanlov mezonlari.



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ЦИФРОВЫЕ И ОСНОВАННЫЕ НА ИСКУССТВЕННОМ ИНТЕЛЛЕКТЕ СРЕДСТВА В ОБУЧЕНИИ АНГЛИЙСКОМУ ЯЗЫКУ МЛАДШИХ ШКОЛЬНИКОВ: МЕТОДИЧЕСКИЕ ОСНОВЫ И ПРАКТИКА

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Аннотация

В статье рассматриваются методические основы использования цифровых и основанных на искусственном интеллекте средств при обучении английскому языку младших школьников. Обосновывается, что ценность средства определяется выполняемой им учебной функцией, а не техническими возможностями, и на этом основании средства делятся на четыре группы: предъявляющие материал, обеспечивающие тренировку, поддерживающие порождение речи и осуществляющие оценивание. Три реальные классные функции средств на основе искусственного интеллекта отграничиваются от утверждений, не подкреплённых практикой. Рассмотрены ограничения, специфичные для младшего школьного возраста, и предложены критерии отбора средств и требуемые компетенции учителя.

Ключевые слова: младшие школьники, цифровые средства, искусственный интеллект, компьютерная поддержка обучения языку, мультимедийное обучение, дифференциация, обратная связь, экранное время, компетенции учителя, критерии отбора.



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INTRODUCTION

The presence of digital tools in the primary English classroom is no longer a matter of choice for most teachers. Interactive boards, tablets, classroom applications, video platforms and, more recently, generative language models are available in schools, and parents and administrators frequently expect them to be used. The pedagogical question, however, is not whether such tools are present but what they are used for, and here the practice is far less settled than the equipment. A tool introduced without a clear learning function tends to occupy lesson time without producing a measurable gain, and the enthusiasm that accompanies a new device is a poor predictor of its instructional value [1].

The methodological framework needed to answer this question already exists in the research on multimedia and computer-assisted learning, which has established that learning outcomes depend on how information is presented and processed rather than on the medium in which it is delivered. The principles derived from this work — that words and pictures together are more effective than words alone, that extraneous material reduces learning, that the learner must be active rather than merely receptive — apply to a tablet application in exactly the same way as to a printed worksheet [2]. The introduction of a digital tool therefore changes the delivery, not the underlying methodology, and its evaluation should follow the same criteria that apply to any other classroom material.

The aim of this article is to establish the methodological foundations for the use of digital and AI-assisted tools in teaching English to young learners and to formulate practical criteria for their selection. The tasks are to classify the tools by the learning function they perform, to describe what each group does well and poorly, to identify the realistic classroom functions of AI-assisted tools, to examine the constraints that apply specifically to young learners, and to specify



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the teacher competences required. The material consists of methodological literature on young learners and on technology in language teaching, together with classroom observation in a private primary school setting.

MAIN BODY

Classifying digital tools by their technical type — application, platform, board, device — is of little use to a teacher planning a lesson, because tools of the same type may serve entirely different purposes. A functional classification is more informative, and four groups can be distinguished. Presentation and input tools deliver new language: video clips, animated stories, picture dictionaries, audio recordings by native speakers. Practice and repetition tools provide controlled drilling: matching games, spelling applications, flashcard systems with spaced repetition. Production and interaction tools support learner output: recording applications, simple video-making tools, collaborative writing spaces. Assessment and record-keeping tools collect and display performance data: quiz platforms, progress dashboards, digital portfolios. A lesson normally uses tools from more than one group, and the sequence in which they are used corresponds to the stages of the lesson [3].

Presentation and input tools are the strongest group for young learners, and the reason is that the difficulty of listening comprehension at this age lies less in the language than in the absence of context. A video clip or an animated story supplies visual context continuously, so that the learner can follow the narrative even when a proportion of the words is unfamiliar, and this makes comprehensible input available at a level that a purely audio recording could not sustain [4]. The limitation of this group is that comprehension is passive: the learner may follow the story perfectly and produce nothing. The teacher



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intervention required is therefore an output task attached to the input — retelling with picture prompts, ordering the events, answering questions with a partner — and without such a task the tool delivers exposure but no practice.

Practice and repetition tools are the group most often overestimated. Their strength is genuine: they provide unlimited repetition without teacher fatigue, they give immediate right-or-wrong feedback, and applications that schedule repetition according to forgetting curves are more efficient for vocabulary retention than uniform review [5]. Their weakness is equally clear. The practice they provide is almost always recognition rather than production: the learner selects the correct picture or the correct word from a set of options and is never required to retrieve the word unaided. Recognition and production are different abilities, and mastery of the first does not guarantee the second. The teacher intervention required is to follow digital practice with a production task in which the same items must be produced without support.

Production and interaction tools are the weakest group for this age range, and the reason is developmental rather than technical. Producing a recording, a short video or a written text requires planning, typing or writing skill and sustained attention, and young learners possess these to a limited degree. The tools that do work at this age are those that reduce the production load: a recording application that captures a single sentence, a drawing application in which the learner labels a picture, a simple slide with one image and one caption. The methodological principle is that the digital component should carry the mechanics of production while the learner supplies the language, and any tool that reverses this relation, requiring the learner to spend most of the time managing the interface, should be rejected regardless of its capabilities.



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Assessment and record-keeping tools have a use that is often overlooked, namely their value to the teacher rather than to the learner. A quiz platform that displays which items the class answered incorrectly gives the teacher information that would otherwise require individual marking, and this information can be used to adjust the next lesson. Used as a source of evidence for planning, such tools are efficient. Used as a source of scores, they carry the risks familiar from assessment research: a visible score displayed to the whole class shifts attention from the task to comparison with others, and for weaker learners the effect on motivation is negative [6]. The recommendation is therefore to use these tools for aggregate class data and to keep individual results private.

AI-assisted tools require separate treatment because expectations of them are currently higher than the classroom evidence supports. Three functions are realistic at present. The first is material generation: producing a short text at a specified level, a set of comprehension questions, a differentiated worksheet or a role-play scenario takes a teacher considerable time and can be substantially accelerated. The second is differentiated practice: generating additional items at different difficulty levels for learners who finish early or who need more support. The third is preliminary feedback on written work, in which the tool identifies mechanical errors and the teacher addresses content and meaning. In all three functions the tool produces a draft that the teacher checks, and the check is not optional, since generated material regularly contains level mismatches and factual errors [7].

Functions that are frequently claimed but not supported by classroom evidence should be distinguished from these. Conversational practice with a generative model is often presented as a substitute for speaking practice with a partner, but for young learners it lacks the features that make peer interaction valuable:



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negotiation of meaning with a real interlocutor, the need to make oneself understood, and the social motivation of talking to a classmate. Automatic assessment of speaking is unreliable for child speech, which differs acoustically from the adult speech on which such systems are typically trained. Fully personalised learning paths, in which the system determines what each learner studies next, presuppose an accurate model of the learner that current classroom tools do not possess. These functions may become viable, but planning a course around them at present is premature.

Several constraints apply specifically to young learners and should govern any decision about digital tools. Screen time is the most obvious: recommendations for primary-age children indicate short and purposeful sessions rather than extended use, and a lesson in which the device is in use for most of the period is difficult to justify pedagogically as well as developmentally. Reading ability is a second constraint: many otherwise suitable applications require the learner to read instructions in English, which excludes beginners; tools with picture-based or audio instructions should be preferred. Data protection is a third: applications that require accounts, collect personal information or display advertising should not be used with children, and school-level approval should precede any classroom use. A fourth constraint is the substitution risk, since a learner working with a device is not working with a classmate [8].

From these considerations a set of selection criteria follows, and the criteria can be applied to any tool in a few minutes. First, what learning function does the tool perform, and does the lesson need that function at that point. Second, does the learner produce language or only recognise it. Third, how much of the learner's attention does the interface consume relative to the language. Fourth, can the tool be used without reading English instructions. Fifth, does it require personal data



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or display advertising. Sixth, does it provide the teacher with usable information about the class. Seventh, is there a non-digital alternative that achieves the same result more simply; if there is, the non-digital alternative is normally preferable, because it requires no equipment and cannot fail technically [9].

The effective use of these tools depends on teacher competences that are not primarily technical. The first is the ability to state the learning objective of a tool before using it, which is what prevents technology from becoming an end in itself. The second is the ability to evaluate generated material critically, which has become essential as AI-generated worksheets and texts enter classroom practice: a text generated at a stated level is frequently not at that level, and a teacher who cannot judge this will use unsuitable material. The third is contingency planning, since equipment fails and a lesson that depends entirely on a device cannot proceed. The fourth is the ability to integrate the digital component into a lesson rather than to append it, so that what the learner does on the screen connects directly to what the learner does before and after it.

A question that arises whenever digital tools are introduced systematically is how they affect the balance of classroom interaction, and this is a methodological rather than a technical issue. Interaction in a language classroom occurs along three axes: teacher to learner, learner to learner, and learner to material. Digital tools strengthen the third axis, and they do so efficiently, because a device can supply individualised material to every learner simultaneously in a way that a teacher cannot. The risk is that they strengthen it at the expense of the second, since a learner working with a tablet is not talking to a classmate. The practical consequence is that the introduction of a tool should be accompanied by an explicit decision about which axis it replaces: if it replaces teacher-to-learner presentation, the gain is real, because the teacher is freed to work with



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individuals; if it replaces learner-to-learner interaction, the loss is likely to exceed the gain at this age.

The pattern that follows from this reasoning is the alternation of individual digital work with paired non-digital work within a single lesson. A short input segment on the board, followed by individual practice on devices, followed by a paired speaking task using the same language, uses each mode for what it does best and does not allow any of them to occupy the whole lesson. The transitions between the modes require management, and in a primary classroom the transition is where most of the lost time occurs. Two practical measures reduce this: devices are distributed and collected by a fixed routine rather than individually, and the paired task is explained before the devices are opened, so that the class does not have to be brought back to attention while screens are still active.

A final consideration concerns the durability of the decisions described here. The tools available change rapidly, and any list of specific applications becomes obsolete within a few years, whereas the functional classification and the selection criteria do not, because they are derived from how children learn rather than from what a particular product does. For a school planning its use of technology this has a direct implication: investment should be concentrated in teacher competence rather than in specific platforms, since a teacher who can state the learning function of a tool and evaluate its output critically will use whatever is available effectively, while a school that has trained its staff in one platform must retrain them when it is replaced. The same reasoning applies to AI-assisted tools, whose capabilities are changing faster than those of any earlier classroom technology [10].

A separate practical question concerns the preparation time that these tools require of the teacher, since a tool that saves classroom time but consumes



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preparation time has not necessarily produced a net gain. Three categories can be distinguished. Tools with high setup cost and high reuse value, such as a set of flashcards built in a spaced-repetition application, are worth the initial investment because the material is used across several years. Tools with low setup cost and immediate value, such as a video clip with a prepared comprehension task, are the most efficient and should form the everyday core of digital practice. Tools with high setup cost and single use, such as an elaborately designed interactive presentation for one lesson, are rarely justified, however impressive the result. Applying this simple test before preparation begins prevents a great deal of wasted effort, and it is the criterion most often ignored when a teacher first begins to work with a new platform.

One further observation concerns the role of the parents, which in a private school setting is more prominent than in a state one. Parents commonly equate the visible use of technology with the quality of teaching, and a lesson conducted without devices may be perceived as less modern regardless of its effectiveness. This perception creates pressure to use tools for display rather than for learning, and it is worth addressing directly rather than accommodating. The most effective approach is to make the functional criterion explicit in communication with parents: to explain which learning function each tool performs and to show what the learner produces as a result. A parent who has seen a recording their child made, or a set of words their child can now use, is far less concerned with how many applications were involved in producing it.

CONCLUSION

The pedagogical value of a digital tool in the young learner classroom is determined by the learning function it performs, not by its technical capability,



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and tools are therefore best classified by function: presentation and input, practice and repetition, production and interaction, assessment and record-keeping. Presentation tools are the strongest group at this age because they supply the visual context that makes listening comprehension possible, but they require an attached output task. Practice tools are the most overestimated, because the practice they provide is recognition rather than production. Production tools work only when they reduce the mechanical load and leave the language to the learner. Assessment tools are most useful to the teacher as evidence for planning and least useful as publicly displayed scores.

AI-assisted tools have three realistic functions at present — material generation, differentiated practice and preliminary feedback on written work — and in each of them the tool produces a draft that the teacher must check. Conversational practice as a substitute for peer interaction, automatic assessment of child speech and fully personalised learning paths are not supported by current classroom evidence and should not be built into course planning. The distinction matters because a school that adopts tools on the basis of the second set of claims will not obtain the benefits available from the first.

Four constraints govern the use of any such tool with young learners: limited and purposeful screen time, restricted reading ability which favours picture-based and audio instructions, data protection which excludes tools requiring personal accounts or displaying advertising, and the risk that a device substitutes for interaction with classmates. The seven selection criteria proposed above operationalise these constraints, and the last of them is the most frequently neglected: where a non-digital alternative achieves the same result more simply, it is normally preferable. The competences that effective use requires are



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pedagogical rather than technical, and the most important of them is the ability to evaluate generated material critically.

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