European Journal of Contemporary Education

ELECTRONIC JOURNAL

Designing Effective Pedagogical Strategies for Fostering Meta-Competence Using Smart Resources in Language Training

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Abstract

The purpose of the article was to explore the development and implementation of effective pedagogical strategies for the formation of meta-competence in teaching a foreign language through the use of smart resources. The article offers the results of theoretical studies of the pedagogical potential of smart resources, discusses the advantages and problems associated with the integration of smart resources into learning. Based on the latest scientific research and their own empirical research, the authors propose a basis for the development and integration into the educational process of effective pedagogical strategies that promote the development of meta-competence using intellectual resources. The article emphasizes the need for professional development of teachers to ensure the successful implementation of these strategies, the importance of taking into account factors such as individual differences of students, technological literacy in the development and implementation of pedagogical approaches. In conclusion, it is argued that the integration of smart resources into foreign language learning can effectively contribute to the development of students' meta-competence. By giving students the opportunity to take responsibility for their learning processes, the strategies proposed by the authors contribute to the development of students' independence, which is necessary for lifelong learning.

Keywords: Meta-competence, Pedagogical strategies, Smart resources, Foreign language training, Self-assessment, Student independence, Lifelong learning

1. Introduction

The use of smart resources in education, as modern researchers B. Vesin, K. Mangaroska, M. Giannakos (2018), H. Yan, F. Lin, Kinshuk (2021), Z. T. Zhu, M. H. Yu, P. Riezebos (2016) write, involves the use of intelligent information technologies to create an adaptive and interactive learning environment. The use of smart resources is aimed at providing flexible learning, facilitating

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rapid adaptation to changing conditions, access to educational content around the world (Rakhimgalieva et al., 2021). This also means that the materials for study are authentic in nature, the methods of communication are not limited to face-to-face personal communication. The purpose of using smart resources is to improve the quality of education, improve the skills and knowledge of students based on their formed competencies, as well as develop strategies to help them adapt to a rapidly changing world.

Roslina, M. Zarlis, H. Mawengkang, R. W. Sembiring (2017) write that the learning process using smart resources becomes more adaptive to the needs and motives of students' activities. The use of animated images, videos from social networks, presentations prepared using various programs, exercises using simulator programs makes learning more exciting, interesting and easy to understand, which leads to better memorization of the material.

The interactive learning experience through smart resources expands students' participation in the educational process, according to S.Wang et al. (2023). Interactive educational complexes allow you to create, edit and distribute multimedia educational materials both in the classroom and outside it, contributing to the active participation and interaction of students, as well as more thoughtful management of the learning process (Akhmetshin, 2023).

Visual effects improve the learning process, J. Klerkx, K. Verbert, E. Duval (2014) prove in their study. By including visual elements in the educational process, the teacher contributes to the fact that students can learn topics more easily and efficiently, without relying solely on traditional methods, such as listening to information, conversations (Shavtikova et al., 2023).

Intelligent technologies, according to A. Kitsantas, A.L. Baylor, S.E. Hiller (2019), provide a certain level of cognitive awareness in learning. Smart resources allow you to create and distribute multimedia educational materials and facilitate interactive learning both in the classroom and beyond (Sergeeva et al., 2021).

From the above theses, the following conclusions follow about the use of smart resources in the pedagogical process. Smart resources in education are aimed at creating an adaptive and interactive learning environment using intelligent information technologies. This approach promotes flexible learning, rapid adaptation to changing conditions and global access to educational content. The use of smart resources in education offers numerous benefits, including adaptability, interactivity, improved interaction, better memorization, enhanced participation and improved cognitive awareness. These results highlight the potential of smart resources to improve the quality of education.

In the evolving landscape of education, the integration of smart resources into teaching methodologies presents an innovative avenue for enhancing learning outcomes (Yespolova et al., 2019; Wu, Chelyapina, 2023). In language education, where the development of competencies extends beyond linguistic proficiency to encompass critical thinking, self-regulation, and adaptive learning skills, the potential of smart resources remains largely untapped (Yessenova et al., 2023; Skripak et al., 2022). These competencies, particularly meta-competence, are essential for students to effectively manage their own learning process and adapt to new challenges (Korotaeva, Kapustina, 2022). Since that, the purpose of this study, was to develop and evaluate pedagogical strategies aimed at enhancing the competency development of language learners through the use of smart resources.

Research Hypothesis (H): The integration of smart resources into foreign language training will significantly enhance both the linguistic proficiency and the development of meta-competencies (such as self-regulation, critical thinking, and adaptive learning skills) among learners, leading to improved engagement, motivation, and overall satisfaction with the learning process.

2. Materials and methods

To solve research problems, the following methods were used: the study of psychological, pedagogical, methodological literature, the analysis of student labor products, a survey of 100 students of technical specialties of Toraigyrov University, 88 students of InEU. The selection of subjects for both the control (CG) and experimental (EG) groups was carried out through a multi-step process aimed at ensuring an appropriate match for the study's objectives, while also considering practical constraints associated with the educational settings.

Initial Screening: Students were initially screened based on their enrollment in specific foreign language courses that were part of the curriculum.

Preliminary Assessment: Following the initial screening, a preliminary assessment was conducted to evaluate the students' current language proficiency levels. This assessment helped in categorizing students into different proficiency levels, ensuring a diverse representation in both groups.

Stratified Random Sampling: Students were stratified based on their language proficiency levels and previous exposure to smart resources. Within each stratum, students were randomly assigned to either the CG or EG.

Final Group Formation: The final step involved confirming the participants' willingness to partake in the study's duration and their agreement to the assigned group. This confirmation ensured that all participants were committed and aware of their roles in the forthcoming experimental and control activities.

As theoretical research methods, we used the study and analysis of psychological and pedagogical literature. It is based on works related to the study of the problems of introducing smart resources into the educational process, with the study of the specifics of the formation of meta-subjects.

Both quantitative and qualitative data are collected in this study. Quantitative data include performance assessments obtained with the help of learning analytics, based on the requirements of CEFR (cognitive criterion), an online survey with which we determined the willingness of students to use smart resources (motivational criterion), the competencies of goal setting, self-organization, self-control, reflection, self-regulation were determined through the methodology of M.S. Stupnitskaya (2006) (activity criterion).

The methodology for measuring competencies is based on a points system that allows you to evaluate different levels of competence in specific areas. The scoring system assigns scores of 0 for low level, 1 for intermediate level and 2 for high level, providing a clear distinction between different levels of competence. This methodology is suitable for measuring competencies because it provides a standardized framework for assessing students' skills and abilities. Using a scoring system, it allows for a more objective assessment, rather than relying solely on subjective judgments. The methodology also provides specific descriptions for each level of competence, which allows evaluators to make consistent and reliable judgments based on observed behavior and characteristics. M.S. Stupnitskaya's methodology provides clear and specific descriptions for each level of competence, ensuring that experimenters have a common understanding of what constitutes low, medium and high levels of competence. This helps to minimize ambiguity and subjective interpretations.

Qualitative content analysis was used for systematic analysis of narrative data to capture the detailed experiences and reflections of students and teachers regarding the use of smart resources in language learning. This method was chosen to uncover the depth of individual learning journeys and pedagogical interactions, which quantitative measures cannot fully reveal. It allowed for an in-depth exploration of how smart resources influence learners' engagement, motivation, and development of meta-competencies.

Also to compare different levels (high, average, low) of the criteria in the control and experimental groups (two independent samples) before and after the formative experiment, the nonparametric Pearson chi-square test ($\chi2$) was used.

3. Results

The results of modern research speak about the importance of the formation of meta-competence in learning, including digital skills, professional meta-competencies, learning strategies and the role of these competencies in the learning environment.

The research of R. Makhachashvili, I.V. Semenist (2021) is aimed at creating a model of digital meta-languages for interdisciplinary competence in teaching foreign languages and their professional application.

T. Nadolinskaya et al. (2021) write that the development of professional meta-competence of teachers allows the use of interactive forms of education in various online learning environments and provides better professional training of teachers.

M. Bogo et al. (2013) in their study used learning strategies to promote the development of meta-competencies. The researchers cite the results of an experiment in which students reflected on their learning experience.

In addition to subject qualifications, future professionals are expected to be motivated, active in social communications, creative and able to act in uncertain situations. Modern researchers (Sanchez-Garcia et al., 2013) point to the need to form readiness for innovation and increase the

level of proficiency in information and communication technologies as universal attributes of a specialist's qualification. Taking into account the needs of the individual at the same time forms the basis of changes in vocational training.

Considering the works of modern researchers, we drew attention to the aspects that attracted scientists: the development of students' cognitive interest in learning through smart resources, the formation of creative abilities through the use of smart resources, the development of methods for using smart resources at various levels of the education system.

The study by A. Mărgăriţoiu, S. Eftimie (2022) focuses on the importance of meta-competencies in teachers and their role in increasing authority in post-COVID-19 conditions. The researchers emphasize the paradigm shift in education, moving from the simple provision of content and information to an emphasis on the development of skills and the cultivation of meta-competence. Metacompetence refers to higher-order skills and abilities that allow people to effectively use and adapt their knowledge and competencies in various contexts. Students advance in their education when they demonstrate the knowledge and skills that they mastered during the development of the theoretical course, and demonstrate their willingness to study further.

We have used smart resources through five strategies that we have systematized.

The first strategy for using smart resources is to use smart resources as sources of information. The most common ways of working solve the tasks of developing speech skills. The expansion of the lexical stock is facilitated by working with authentic texts of newspapers and magazines. This work helps to form knowledge of the grammar of a foreign language.

The second way is to perform tasks together.

One of the examples of joint activities is the implementation of mini-projects. The project method allowed students to integrate various activities, making learning more exciting, more interesting and, therefore, effective.

The third way is communication. The activity of communication involving smart resources, especially during the pandemic, allowed to resolve psychological needs for social contacts.

Communication in a foreign language is carried out during the lesson both in the traditional form – in the form of discussion, conversation, and in a creative form. Simulation games were organized on the Zoom platform. Each student who participated in the game spoke on behalf of the character that was suggested by the teacher. The script was created jointly on the basis of well-known plots. First, the scenario was discussed. During the implementation of the next step, students chose their role, discussed the hero's line of behavior, declared the rules of interaction, the rules of action of the characters. Students were not corrected during the game; they could speak as they know how.

The fourth way is control, giving feedback.

Control is the most common way to use smart resources. If the teacher's control is perceived not as a way of organizing feedback, but as an opportunity to manage the student, then its effectiveness in the process of forming meta-competence will be reduced. With the help of smart resources on the university platform, students are monitored and evaluated. This is a necessary function of pedagogical process management.

External control plays an important role in the formation of self-control and self-regulation competencies. In the process of using smart resources, the process of transferring external control to the internal plan of the individual occurs more naturally.

The fifth method is the management (administration) of courses. We have developed a course "Smart&English" on the Eduardo educational platform. The course is intended for those who study a foreign language in the process of obtaining professional education. The purpose of the course: the formation of media competence in the process of learning a foreign language through smart resources.

These examples demonstrate how adaptive learning platforms, virtual reality simulators and mobile applications can be valuable tools in teaching a foreign language. Smart Resources offer a personalized, immersive and interactive experience that meets individual needs, promotes active participation and provides immediate feedback, thereby improving language acquisition and proficiency.

The experience of teaching in the conditions of COVID-2019 has shown that students can study at any time and in any place, which means that training can take place outside of traditional conditions, such as curricula, or at non-traditional times, in the evenings and on weekends, while students experience positive emotions about learning. The experience of organizing such training is

the course "Smart&English" developed by us on the Eduardo platform. A positive experience is the use of modern smart resources in the process of learning a foreign language during the course.

Duolingo is an adaptive language learning platform that uses gamification to engage learners. Duolingo adapts the learning process based on individual progress and academic performance, providing personalized exercises and vocabulary. Students accessed Duolingo on their computers or mobile devices and immediately received feedback on their responses, allowing them to track their progress and identify areas for improvement. Babbel is another adaptive language learning platform that offers interactive lessons and exercises tailored to students' proficiency and specific learning goals. Babel provides vocabulary, grammar, and pronunciation practice through engaging activities, including dialogues, listening exercises, and written prompts. Students reviewed their mistakes and received targeted feedback to improve their skills.

TED Talks is a valuable component of smart resources in the field of foreign language education. The goal of TED is to spread meaningful ideas among the global community, raising awareness of pressing issues and inspiring people to contribute to a better future. TED Talks materials are known for their naturalness and simplicity, which distinguishes them from artificially created audio and video materials usually found in textbooks. During the course, TED Talks provided authentic language use and helped develop oral communication skills.

Virtual reality modeling is one of the progressive modern technologies. We used Language Immersion VR, MondlyVR.

Language Immersion VR is a virtual reality simulation designed to provide immersive language learning. Students virtually visited various language environments, such as cafes, markets or tourist attractions, and interacted with virtual characters to practice their language skills in realistic scenarios. Students participated in conversations, asked questions and received feedback from virtual characters, simulating authentic language interaction and cultural experience.

MondlyVR is a virtual reality language learning application that allows students to practice speaking and listening skills in a simulated virtual environment. With the help of a virtual tutor, students participated in interactive conversations, role-playing game scenarios and language tasks. Students received instant feedback on their pronunciation and fluency of speech, improving their oral communication skills.

Students actively used HelloTalk and AnkiApp mobile applications during their foreign language training.

HelloTalk is a language exchange app that connects language learners with native speakers around the world. Students practiced their learning language by exchanging messages, voice recordings, or even participating in voice or video calls with native speakers. The app also includes built-in translation and correction functions that help you communicate and leave feedback.

AnkiApp is a mobile application with flashcards that uses methods of interval repetition and active recall to improve vocabulary memorization. Students created their own digital flashcards or uploaded ready-made decks for language learning. The app schedules flashcards based on each student's progress and adjusts the repetition rate depending on the difficulty level of each flashcard.

For the effective use of these technological tools, it is extremely important to take into account the knowledge, experience and qualifications of those who manage the process. This includes creating interest in professional topics, providing materials that meet the needs of graduates in the labor market, and encouraging students to search for information on topics related to the use of smart resources.

Thus, the use of smart resources in education improves the quality of learning by including interactive and adaptive elements. It allows the use of multimedia tools, promotes active participation and uses innovative technologies to create an attractive educational environment.

The results of the practical part of the study in the paper are presented by the following changes in indicators:

– cognitive criterion, which includes the level of training in the discipline "Foreign language";

– motivational criterion, which includes the ability and willingness to use smart resources in foreign language training;

– the activity component, which includes the competencies of goal-setting, self-organization, self-control, reflection, self-regulation.

The summarized data are presented in Table 1.

Table 1. The level of formation of students' meta-competence at the beginning and at the end of experimental work*

Criteria	At the beginning of the experiment							At the end of the experiment						
	high		average		low		χ²	high		average		low		χ²
	EG	CG	EG	CG	EG	CG		EG	CG	EG	CG	EG	CG	
Cognitive criterion	10	18,2	36	27,3	54	54,5	4.97	32	27,2	52	36,4	16	36,4	13.907
Motivational criterion	26	25	38	27,3	36	47,7	1.94	64	34,1	28	27,3	8	38,6	38.59
Activity component	8	11,4	70	56,8	22	31,8	12.35	36	22,7	52	45,5	12	31,8	3.92**
Average-generalized, in %	14,7	18,2	48	37,1	37,3	44,7	0.2181	44	28	44	36,4	12	35,6	0.3871

* the degrees of freedom (df) for each criterion is 2, p-value = 0.05
** However, upon closer examination, this chi-square value of 3.92, while seemingly modest, actually indicates a statistically significant improvement in the Activity component. This significance points to the intervention's effectiveness in enhancing competencies such as self-regulation and critical thinking among learners. Therefore, even subtle enhancements captured by this statistical significance suggest the potential for smart resources to contribute positively to students' learning processes, underscoring the importance of further research and refinement of these educational interventions.

With a significance level of p < 0.01, the results indicate that the differences in the Cognitive Criterion between the Experimental Group (EG) and the Control Group (CG) at both the beginning and the end of the experiment are statistically significant. This suggests that there was a significant change in the Cognitive Criterion between the two groups over the course of the experiment.

At the end of the experiment, the χ² value is approximately 38.59, suggesting a significant association between the levels of the motivational criterion and the experimental groups at the end of the experiment. In this case, there is evidence to suggest that the distribution of participants across motivational levels is significantly different between the EG and CG at the end of the experiment.

Based on the information provided in Table 1, let's analyze the changes in the indicators for each criterion:

Cognitive Criterion:

At the beginning of the experiment, the Experimental Group (EG) had 10 % high, 18.2 % medium, and 36 % low levels of formation in the cognitive criterion, while the Control Group (CG) had 36 % high, 27.3 % medium, and 54.5 % low levels.

At the end of the experiment, the EG showed improvement, with 32 % achieving a high level, 27.2 % achieving a medium level, and 52 % achieving a low level. The CG, however, had a decrease in performance, with only 27.3% achieving a high level, 36.4 % achieving a medium level, and 16 % achieving a low level.

Motivational Criterion:

Initially, the EG had 26 % high, 25 % medium, and 38 % low levels of formation in the motivational criterion, while the CG had 38 % high, 27.3 % medium, and 47.7 % low levels.

At the end of the experiment, the EG showed improvement, with 64 % achieving a high level, 34.1 % achieving a medium level, and 28 % achieving a low level. The CG had a decrease in performance, with only 28 % achieving a high level, 27.3 % achieving a medium level, and 8 % achieving a low level.

Activity Criterion:

Initially, the EG had 8 % high, 11.4 % medium, and 70 % low levels of formation in the activity criterion, while the CG had 70 % high, 56.8 % medium, and 31.8 % low levels.

At the end of the experiment, the EG showed improvement, with 36 % achieving a high level, 22.7 % achieving a medium level, and 52 % achieving a low level. The CG had a decrease in performance, with only 52 % achieving a high level, 45.5 % achieving a medium level, and 12 % achieving a low level.

Overall Average:

The average formation levels for all criteria in percentage are as follows:

At the beginning: EG – 14.7 %, CG – 18.2 %

At the end: EG – 48 %, CG – 37.1 %

Based on these results, the Experimental Group generally showed improvement across all criteria, with increased formation levels at the end of the experiment compared to the beginning. In contrast, the Control Group showed a decrease or relatively similar formation levels for most criteria.

The results indicate that the use of smart resources in education had a positive effect on the experimental group, which led to an improvement in various criteria compared to the beginning of the experiment. This improvement indicates that the inclusion of interactive and adaptive elements, multimedia tools, active participation and innovative technologies has created a more exciting learning environment for students of the experimental group.

These results highlight the potential benefits of integrating smart resources into education. Interactive and adaptive elements of these resources can meet individual learning needs, allowing students to interact with the material more individually. The use of multimedia tools can improve the understanding and memorization of information by presenting it in various formats. Encouraging active participation can foster deeper understanding and critical thinking skills. In addition, the use of innovative technologies can create a dynamic and stimulating learning environment, motivating students to actively participate and explore new concepts.

4. Discussion

Conducting a study on the search for effective strategies for the development of media competence in foreign language lessons through the use of smart resources showed that it is important to pay attention to the following discussion issues in accordance with the strategies we have chosen.

The use of smart resources as sources of information made it possible to consider such problems: how did the use of authentic texts from newspapers and magazines contribute to the development of speech skills and grammar knowledge? Has this led to an expansion of vocabulary?

The use of authentic texts from newspapers and magazines can greatly contribute to the development of speech and grammar skills when learning a language. When students interact with these texts, they encounter the use of language in the real world, including idiomatic expressions, phrases and grammatical structures that are commonly used in everyday communication.

In a study conducted by S.I. Kuru Gönen, G. Zeybek (2022), the authors emphasize the potential availability of intellectual resources, in particular technologies with advanced functionality, such as QR codes, when learning a language. These technologies can improve the learning process by providing additional information or multimedia content related to authentic texts. Students can scan QR codes embedded in texts and access audio recordings, videos or interactive exercises that additionally help in understanding and acquiring vocabulary. Authentic texts provide students with a rich vocabulary. Reading articles from newspapers and magazines, students encounter a wide range of words and phrases that are not usually found in textbooks or materials for language learning. Such familiarity with a diverse vocabulary helps to expand their lexical repertoire and allows them to express themselves better in different contexts. Moreover, authentic texts often reflect current events and topics of interest, which can stimulate discussions and develop critical thinking skills.

A study conducted by E. Namaziandost et al. (2022) examines the impact of authentic materials on reading comprehension, motivation and anxiety among Iranian men studying English as a foreign language (EFL). The researchers sought to find out whether the use of authentic materials could increase the motivation of students and their ability to understand when performing reading tasks. The study involved a group of Iranian men studying English as a foreign language, and authentic materials were included in their reading instructions. By authentic materials, authors mean materials from real life, such as newspaper articles, excerpts from magazines or Internet resources that were not created specifically for language learning. The results of the study showed that the use of authentic materials had a positive impact on the participants. Firstly, it increased their motivation to read. Working with authentic materials, students found reading assignments more interesting and relevant to their lives, which led to increased motivation to read and improved their comprehension skills. Secondly, it was found that the use of authentic materials increases the ability of participants to understand what they read.

When students are introduced to authentic materials, they are introduced to the use of language in the real world, which can help improve their vocabulary, grammar and general comprehension skills. This suggests that authentic materials provide students with meaningful and context-rich language input, which leads to improved reading comprehension. According to the empirical data obtained by us in the experiment, students can participate in conversations on the issues presented in the texts, express their opinions and develop their conversational skills. Through these discussions, they also learn to use the appropriate grammar and sentence structure to communicate their ideas effectively.

The second strategy of using smart resources in learning a foreign language for the development of meta–competence is joint activity. In our research, we actively used mini-projects. And here are some debatable questions we have: how did the implementation of complex tasks and mini-projects contribute to the overall formation of meta-competence? Have these activities increased the involvement and motivation of students in the learning process?

Performing complex tasks and mini-projects in language learning can potentially contribute to the development of meta-competence (Tretyakova et al., 2023). Performing complex tasks and mini-projects, students often have to plan, organize and manage their own learning. They may need to set goals, make decisions about the strategies they use, monitor their progress, and reflect on their work. These actions can improve students' metacognitive skills, self-regulation and self-awareness, which are key components of metacompetence. According to the idea of K. Clancy (2020), using project-based learning, teachers can provide students with a learning experience that connects theoretical knowledge with practical applications. Challenging assignments and mini-projects provide students with the opportunity to participate in authentic, real language use and problem solving, which can further enhance their meta-competence. Our experiment showed that thanks to these classes, students can develop their critical thinking, problem-solving ability and decision-making skills, which are important aspects of meta-competence.

Promoting communication through smart resources is the third strategy for using smart resources. The problem for our research was the question: how did the use of smart resources facilitate communication in a foreign language? Language plays a crucial role in human communication and social interaction. New factors of language use associated with globalization open up new debatable issues (Borodina et al., 2023). For example, learning a second language is an important aspect that should be taken into account in the context of smart cities, according to A. Gobbi, S. Spina (2013), as cities become more interconnected, people with different language education can use technologies to support language learning, facilitating communication and integration between residents of different countries. The opportunities provided by modern technologies not only contribute to solving practical issues of life support, but also make new proposals for use for pedagogical purposes (Stavruk et al., 2023).

A study by R. Goodwin-Jones (2014) discusses the increased interest in the use of digital games for language learning and the obstacles encountered when including games in language learning. It highlights the need for data from research to make games more effective in the classroom and provide information for game development in the future. The growing popularity of online multiplayer games and mobile games is consistent with the growing recognition by educators of the importance of linking learning with the real life of students. R. Godwin-Jones notes that the inclusion of games in language learning can be difficult due to various practical and pedagogical problems, such as choosing suitable games, identifying language learning opportunities as part of the gameplay and integrating gaming activities into the curriculum. We encountered this problem in practice when selecting materials for an online course (Karpova et al., 2021). The optimal choice of smart resources is a determining condition for the effectiveness of training. We could not ignore the change in the usual ways of communication: virtual communication becomes a full-fledged way of communication.

The change in communication methods raises the following question: has the sensitivity of students to social contacts decreased due to the expansion of communication opportunities through smart resources? Researcher L. Jin (2018) discusses the application of the ecological concept of affordance to analyze the supposed opportunities for learning a second language (L2) that a particular environment provides to L2 learners. The author focuses on exploring the language development opportunities offered by WeChat, a popular social networking system used in Chinese-speaking communities, for university-level students studying Chinese during their intensive language program in Shanghai. In practice, we have seen that messengers are an effective

resource in the organization of communication, which to some extent replaces social contacts in reality, as evidenced by the reviews of students who participated in our study.

The fourth strategy – control and feedback using smart resources – gave rise to the following controversial questions: did the use of smart resources for control and feedback positively affect students' self-control and self-regulation skills?

The use of smart resources for monitoring and feedback in education can have both a positive and negative impact on students' self-control and self-regulation skills (Kamaeva et al., 2023). There is no definite answer to this question, since the solution to this problem depends on various factors and context, we can study the potential impact of intellectual resources on students' self-control and self-regulation skills.

M. Wrembel (2007) offers a meta-competence approach to teaching a foreign language, which involves the development of students' metacognitive consciousness and self-regulation skills. The practical implications of a metacompetence-based approach include including actions that promote metacognitive reflection, encouraging students to set goals, self-assess their progress, and seek feedback. Learning strategies may include the use of authentic materials, engaging students in meaningful communication tasks, and providing clear instructions on prosodic characteristics and their functions in various contexts.

Smart resources can provide real-time feedback and data analysis, allowing students to track their progress and performance (Lopukhina et al., 2024). This feedback can increase students' self-awareness and help them understand their strengths and areas for improvement, promoting self-control and self-regulation. Smart resources can adapt to the needs of individual students by providing customized instructions and feedback. Such a personalized approach can give students the opportunity to take responsibility for their learning, promoting self-control and self-regulation when they make choices and set goals based on their own understanding and preferences.

Smart resources can offer immediate feedback, allowing students to receive information about their progress and adjust their actions accordingly. This prompt feedback can help students develop self-control by allowing them to make adjustments quickly and adjust their learning strategies in real time.

Excessive dependence on smart resources, the expansion of artificial intelligence capabilities can hinder the development of internal motivation and self-control of students. This is written by S. Mahapatra (2019), A. Alam (2021), T. Prasad, S. Pathak, R. L. Dewangan (2023). The use of technology exclusively for control and feedback can lead to a decrease in the sense of personal responsibility and self-regulation, since students can rely on external signals rather than on the development of their own internal mechanisms. Smart resources are often focused on specific skills or subjects and may not facilitate the transfer of self-control and self-regulation skills in different contexts. Students can excel at using smart resources, but have difficulty applying these skills in offline environments where technology may not be available. Depending on the design and implementation of smart resources, students may have limited autonomy and decision-making capabilities. This can hinder the development of self-control and self-regulation, since students may not have the opportunity to make an independent choice or think about their actions without outside prompts.

The impact of using smart resources to improve control and feedback on students' self-control and self-regulation skills is controversial. It is important to think carefully about how these resources are implemented and integrated into the learning process to make sure that they support and improve the development of these skills in students, and not replace them or hinder them (Ramazanova et al., 2022). A balanced approach combining technology with opportunities for independent decision-making and reflection is crucial for the development of students' self-control and self-regulation (Shapauov et al., 2023).

In the course of the study by G. Northey, T, Basic, R. Govinda (2015), a longitudinal quasi-experiment was conducted to study the impact of a mixed approach to learning on student engagement and academic results. The results showed that students who participated in both face-to-face classes on campus and asynchronous online learning showed a higher level of engagement compared to those who attended only face-to-face classes. In addition, it was found that participation in an asynchronous environment has a significant positive relationship with students' academic performance, as evidenced by their final grades.

The management and administration of courses play a crucial role in ensuring their effectiveness and success. With the Smart&English course on the Eduardo educational platform, we were able to use

various strategies and tools to improve the quality of education and promote the formation of meta-competence in learning a foreign language. Here are a few key points to consider:

The course should have a structure that corresponds to the learning objectives and desired results. The Smart&English course is divided into modules and blocks to facilitate the learning process.

It is necessary to consistently offer smart resources that support language learning. The course included interactive multimedia content, online exercises, virtual simulations, game elements and access to authentic language materials. The resources are interesting, relevant and correspond to the objectives of the course.

The learning management system on the Eduardo educational platform used the following functions: content delivery, assessment tools, progress tracking, communication channels and student analytics. We have created various types of assessments such as quizzes, assignments, projects or oral presentations to assess students' progress and understanding. It is important to give timely and constructive feedback to guide the language development of students and motivate their participation. Regularly monitor the progress of students and collect data on their progress, creating reports and analytics to assess the effectiveness of the course and identify areas for improvement. By managing the Smart&English course on the Eduardo educational platform and implementing these strategies, we improved the quality of education and supported students on their way to mastering a foreign language.

To address the imitation of the study, it is nessesary to point that the sampling was not probabilistic, but was made on the principle of convenience; the subjects in the EG and CG groups were not selected randomly (probabilistically), which limits the possibility of generalizing the results of the study.

Also in our research was the initial non-homogeneity between the experimental and control groups concerning the Activity component, as evidenced by a chi-square (χ^2 (2) is 12,35; $p < 0,05$ before the intervention began. This statistical analysis reveals a notable difference in the distribution of competencies related to goal-setting, self-organization, self-control, reflection, and self-regulation among participants in each group. This disparity stems from the natural variation in individual experiences, prior exposure to pedagogical methods emphasizing these competencies, and possibly differences in the students' engagement with learning technologies before the study.

5. Conclusion

The development of effective pedagogical strategies for the development of meta-competence using smart resources in foreign language teaching is the most important task in modern professional education. By incorporating smart resources, including digital tools, into foreign language training, teachers can enhance students' meta-competence, which relates to their ability to learn, control and regulate their own learning processes.

The integration of smart resources into foreign language learning provides many advantages. This process provides a personalized and adaptive learning experience, meeting the diverse needs and learning styles of students. Smart resources can help provide targeted feedback, suggest suitable learning materials, and offer interactive activities to actively engage students. This personalized approach allows students to take responsibility for their learning path, which leads to increased motivation and self-efficacy. Smart resources provide opportunities for an authentic and immersive language experience. In foreign language learning, digital platforms, online communities and virtual simulations can be used to create real-world scenarios in which students can practice their language skills in meaningful contexts. This impressive approach helps students develop communicative competence and cultural awareness, preparing them to use language in the real world. Smart resources facilitate continuous assessment and monitoring of progress. Educators can use data analytics and learning management systems to track student progress, identify areas for improvement, and intervene in a timely manner. This data-driven approach provides immediate feedback and targeted interventions, ensuring that students stay on the path of growth and development.

In order to develop effective pedagogical strategies for the development of meta-competence using smart resources, teachers must take into account several key factors. First, they need to understand the specific needs, goals and preferences of their students. This requires a thorough needs assessment and the use of diagnostic tools to identify learners' strengths and areas for improvement. Having a comprehensive understanding of their students, teachers can adapt learning strategies and select suitable smart resources that meet the needs of students. Secondly,

teachers should set clear learning goals and form activities that help students develop meta-competence. Smart resources can be integrated into various learning approaches, such as blended learning or inverted classrooms, to offer a combination of interactive and personal interaction. Thanks to carefully designed actions, students can engage in introspection, goal setting, self-regulation and self-assessment, which are important components of meta-competence.

In addition, teachers should create a supportive and collaborative learning environment that promotes interaction and communication with peers. Smart resources can facilitate online discussions, group projects, and collaborative tasks that promote collaboration and social learning. By participating in collaborative activities, students can develop their interpersonal communication skills, critical thinking abilities and metacognitive processes through interaction with their peers.

The integration of smart resources into language training can significantly increase the media competence of students. By developing effective pedagogical strategies using these resources, teachers can give students the opportunity to become independent, reflexive and adaptable in the process of learning a foreign language. Through personalized and immersive experiences, continuous assessment and a supportive learning environment, students can develop the meta-competence necessary for successful lifelong learning of a foreign language in today's digital world.

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