INTELLECTUAL CAPITAL IS THE FOUNDATION OF INNOVATIVE DEVELOPMENT

INNOVATIONS IN EFL TEACHING

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«European Science»
Book 18. Part 2

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Stavytska I., Lavrysh Y., Chugai O., Havrylenko K., Sokyrska O.

INTELLEKTUELLES KAPITAL - DIE GRUNDLAGE FÜR INNOVATIVE ENTWICKLUNG

INNOVATIONEN IN DER EFL-LEHRE

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The monograph is devoted to the actual problem of integrating digital educational technologies into EFL teaching at higher education institutions. In the perspective of the issues of the monograph, there is an analysis of innovations that the process of improving teaching in technical universities requires. Research materials are of theoretical and practical interest and can be used in formal and informal education of students and post-graduate students of pedagogical universities, as well as researchers of trends in the development of the educational space, for the training and retraining of scientific and pedagogical staff, specialists in the field of didactics, and all those who are interested problems of modern education.

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Inhalt / Content

CHAPTER 5
PRONUNCIATION AS AN IMPORTANT ASPECT OF ELT: MODERN TRENDS

KAPITEL 1 / CHAPTER 1 [1]
FUNDAMENTAL CONCEPTS AND METHODS FOR INTEGRATING DIGITAL EDUCATIONAL TECHNOLOGIES IN THE LEARNING PROCESS

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1.1. The implementation of digital educational technologies in both theoretical and practical aspects of education

Over the past few decades, the rise of digital technologies has completely transformed the way people live, work, and learn. With the proliferation of smartphones, tablets, and computers, people are constantly connected to the internet and have access to vast amounts of information and knowledge. This has led to the emergence of digital educational technologies that have the potential to revolutionize the way we teach and learn.

The implementation of digital educational technologies in both the theoretical framework and practical aspects of education has become increasingly popular in recent years. Educational institutions worldwide are leveraging these technologies to enhance the quality of education and provide students with an engaging and interactive learning experience. These technologies include e-learning platforms, digital textbooks, educational apps, online resources, and virtual classrooms, among others.

The benefits of digital educational technologies are numerous. They allow students to learn at their own pace, provide access to a wealth of information, enable interactive and collaborative learning, and enhance student engagement and motivation. These technologies also provide teachers with a powerful tool to manage their classrooms effectively, monitor student progress, and provide personalized learning experiences.

Bykov (2019) argued that the use of digital educational technologies in the classroom could enhance the learning experience and improve student outcomes. Bykov suggested that digital technologies can help students develop critical thinking skills, increase engagement and motivation, and provide access to a wider range of educational resources. However, Bykov also acknowledged that there are challenges to implementing digital technologies in the classroom, including the need for teachers

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to develop new skills and the potential for technology to be a distraction rather than a tool for learning.

Digital educational technologies have been integrated into the theoretical framework of education in various ways. For instance, online courses and Massive Open Online Courses (MOOCs) have provided new opportunities for learners to acquire knowledge and skills from a wide range of subjects and topics. Moreover, digital educational technologies have made it possible for educators to create engaging and interactive learning experiences for students, using multimedia resources and tools. According to Dicheva et al. (2015), online learning platforms can improve student engagement, retention, and learning outcomes, as well as offer personalized learning experiences based on student needs and preferences.

The initiative to introduce the format of open universities belongs to the Massachusetts Institute of Technology (MIT), which launched the Open Course Ware project in 2001. The project aimed to provide free access to educational course materials from the university. Other universities supported this initiative and made their educational and scientific programs available to a wide audience. The result of such innovations was the emergence of the concept of online education.

According to Polat (Polat et al., 2004), online education is a form of distance education that uses internet technologies to enable controlled interaction among teachers and students while preserving all components of the educational process, such as goals, content, methods, and organizational forms. Teachers create distance courses that are structured information products designed to help students acquire the content and skills needed in specific academic disciplines. Overall, Polat's definition emphasizes the use of technology to facilitate learning and interaction between teachers and students who are geographically separated.

In Ukraine, the implementation of distance or online learning is carried out by the Constitution of Ukraine, the Laws of Ukraine "On Higher Education" (2002), Laws "On the National Program of Informatization" (1998); "On Copyright and Related Rights", "On Information", "On Amendments to Certain Legislative Acts of Ukraine on Legal Protection of Intellectual Property"; the resolution of the Cabinet of Ministers of Ukraine dated 23.09.2003 № 1494, "On Approval of the Program for the Development of Distance Learning System for 2004-2006"; the Regulation on Distance Learning (approved by the Order of the Ministry of Education and Science of Ukraine in 2013). According to the National Strategy for the Development of Education in Ukraine for 2012-2021, the use of Internet access tools and educational

platforms, and electronic educational resources in the educational process is an important and essential component of the effective work of higher education institutions (2012).

Bykov identified three levels of online distance learning courses in 2008, as follows: (1) computer-based learning, which is designed for frequently repeated tasks where the system determines the answers, (2) artificial intelligence systems, which enable expert interaction between students and teachers to correct learning, and (3) obtaining educational information from high-quality modern lectures or courses developed by leading scientists using modern communication tools. Recognizing the fact that developing students' ability for self-development and continuous learning is a leading task of higher education, the use of digital educational technologies is seen as an effective means of practically implementing this task.

The strategic direction of information modernization of the education system in Ukraine is enshrined at the legislative level and reflected in a number of normative legal documents, namely: the National Program of Informatization (1998); the National Doctrine of Education Development (2002); the State Program "Information and Communication Technologies in Education and Science" for 2006-2010 (2005); the Law of Ukraine "On Basic Principles of Development of the Information Society in Ukraine for 2007-2015" adopted on January 9, 2007, under No. 537-У; the Decree of the President of Ukraine "On Measures to Ensure Priority Development of Education in Ukraine" (2010); the State Targeted Program "100 Percent" (2011); the National Project "Open World" (2012); the National Strategy for the Development of Education in Ukraine for the period up to 2021 (2013); Order of the Ministry of Education and Science No. 466 of April 25, 2013; On approval of the Regulation on distance learning (2013); the resolution of the Cabinet of Ministers of Ukraine of May 15, 2013, "On Approval of the Strategy for the Development of the Information Society in Ukraine"; the draft Concept of the Development of Education in Ukraine for the period from 2015 to 2025 (2014); the "Roadmap of Educational Reform (2015-2025)" (2015); the resolution of the Verkhovna Rada of Ukraine "On Recommendations of Parliamentary Hearings on the topic: "Reforms of the Information and Communication Technology Sector and Development of the Information Space of Ukraine" (Official Gazette of the Verkhovna Rada, 2016, p. 191).

Thus, at the legislative level, the expediency and necessity of the process of informatization of modern Ukrainian society have been declared. It is possible to identify key trends in the informatization of education in Ukraine: creating conditions

for the development of digital critical competencies and media literacy, ensuring free access for each person to digital educational resources according to their needs, introducing distance education, developing modern digital teaching tools, promoting individualization and autonomy in the learning process through the creation of individual modular programs based on specific capabilities and needs, developing methodological support for the effective implementation of digital technologies and criteria for evaluating the quality of tools, creating a system to increase the level of digital competence of teachers, and ensuring the development of a national global network of education and science.

The scientists identified the following advantages of using digital resources (Andreyko, Skarlupina, 2019):

- Variability and diversity of information and reference resources for optimizing information search and meeting the educational and professional needs of each student;
- Presentation of information in various multimedia modes: video, audio format, hyperlinks;
- Interactivity of digital tools;
- Motivation to learn by adapting resources to the interests and level of knowledge of students;
- Providing objective evaluation through automated quality control of task performance;
- Development of systematic, critical, and creative thinking;
- Time-space unlimited access to resources;
- Creating conditions for simultaneous group and individual work;
- Creating a virtual authentic language and cultural environment for practicing language skills;
- Developing digital critical competencies when evaluating the quality of information resources.

Among the shortcomings of traditional foreign language teaching, researchers have identified the dependence of teachers on textbooks that do not always meet the real needs and interests of students. Digital educational resources provide an opportunity to address this issue and allow students to choose resources independently. The comprehensive use of various foreign language learning tools promotes the expression of students' individuality. The openness and accessibility of learning products that students download on the network or online platforms contribute to the

development of responsibility for the quality of the educational product.

Information and communication technologies create conditions for universities to form a comprehensive system of universal knowledge, skills, and competencies. They open the way for the individual to search for information and learning activities based on an individual educational trajectory. Therefore, the use of digital technologies in the process of individualization of learning is a purposeful process of changing the content, methods, and organizational forms of learning. However, this process changes not only the forms but also the personalities of both students and teachers, as the integration of digital technologies is not only a technological but also a didactic process, associated with conceptual changes in the preparation of initial methodological support, development of an assessment system, and updating of the content of learning. Studies by scientists confirm that the use of digital technologies significantly affects the improvement of pedagogical activities and academic performance.

Having reviewed scientific works and analyzed the research results on the integration of technology for self-learning, a group of scientists led by Fang (Fang et al., 2012) proposed a model of integrating web resources (see Fig. 1.1) into the self-learning process. The main focus of this study is to examine the effectiveness of self-learning grounded in web-based environments. According to the model, the web environment offers the student an unlimited number of resources and informational messages. Resources provide either individual work mode or work with partners or with a teacher. As we can see, the main tasks for students are to analyze their technical tools, make the right choice of resources, and work mode, and choose the type of interaction. During the self-learning process, students usually search for an educational platform on the Internet with a wide selection of resources. Learning through web technologies, although well-established, is still a problem for students. Compared to traditional formal learning, students' readiness to accept and use web resources depends on their level of digital competence. The use of Internet learning sources is mandatory for blended learning contexts. Otherwise, obtaining the desired learning outcome is impossible. As mentioned above, the use of digital educational technologies affects the learning outcomes of students differently, which can be caused by contextual and cognitive factors.

Individual self-learning using web resources has a positive impact on motivation to learn, meaning that more self-directed students demonstrate an active approach towards tasks that involve technology and are more motivated to adopt online learning strategies and achieve their learning goals.

To explore the potential of web resources, there is a need to study the typology of free learning web technologies (Bower, Torrington, 2020), which offers educators 226 technologies categorized into 40 types and 15 clusters. Analyzing web resources allows us to evaluate trends in online learning technology development over the past five years, such as marketing, and the trend toward using integrated platforms and tools.

To be classified within the typology, resources must satisfy specific conditions, which are as follows:

1. They need to be available without charge or have a version that is freely accessible for ongoing use.
2. They must be accessible via a standard web browser.
3. They should allow for the personalization of content to meet individual requirements and enable sharing of content.
4. They must have educational and instructional features.

It is imperative to undertake an analysis of several suggested resources.

1. Synchronous text discussion: the mentioned resources allow users to exchange text comments in real time. Examples of such resources are Twitter (http://twitter.com) which allows users to publish short public text comments; Chatzy (http://chatzy.com) and Backchannel Chat (http://backchannelchat.com) which allow users to create private chat streams on the Internet that can be shared through a URL; Slack (https://slack.com) which offers synchronous text tools for collaborative work that allow groups of users to send instant messages, plan, and share information.

2. Discussion forums: promote asynchronous text discussions among groups of users. This is useful for reflective conversations where real-time interaction is not necessary. ProBoards (http://proboards.com) or ReadUps (http://readups.com) are social platforms where users can read a book together and post text comments. Separate discussion forums can be integrated into more elaborate sets of tools (such as learning management systems).

3. Tools for creating notes and documents allow groups of users to collaborate with authors in real-time and view each other's changes. Evernote (http://evernote.com) provides a sophisticated web interface for creating notes including inserting images and file management but only allows for viewing, not simultaneous writing. Google Keep (www.keep.google.com) is a service for creating notes, including text, lists, images, and audio, accessed through a Google account. Microsoft Word Online (https://www.office.com/launch/word) allows for publishing, editing, sharing, and collaborative work on Word documents through OneDrive. Zoho

Writer (http://zoho.com/docs) is an alternative to Google Docs. Canva (https://www.canva.com) provides convenient manipulation of images.

4. Creating online books: Websites for creating online books allow users to create stories based on images and text and share them through a URL or repository. StoryJumper (http://www.storyjumper.com) and Tikatok (http://tikatok.com) allow students to create and publish e-books by uploading their images and text. StoryBird (http://storybird.com) offers a wide selection of artistic themes, templates, and graphics to structure a story. Mixbook (http://mixbook.com) is a website for creating books based on uploaded photos, allowing for collaborative authorship and sharing. Bookcreator (https://bookcreator.com) provides a convenient interface for combining text, images, audio, and video to create, read, or publish books.

Fig. 1.1. Classification of web resources (Bower, 2015)

In the process of integrating web resources, it is important to adapt and optimize the online and offline design of educational courses to reduce barriers for students in learning technologies and to enhance their internal motivation to learn. The development of individual characteristics is achieved through the encouragement of

critical reflection, creativity, and personal initiative. This is in line with the idea of collaborative, democratic, and decentralized learning, which is of great importance in fostering student autonomy.

The main idea of enhancing the educational space with technology is not just to use technology for the sake of implementing it, but also to promote pedagogical strategies and improve educational paths to enhance the perception and understanding of learning information, as well as to develop students' metacognitive abilities such as reflection and self-reflection, which increases learning effectiveness and motivation. In modern education systems, teaching and technology should synergize and complement each other. Successful implementation of technology in the learning process requires a new constructive way of thinking, which is associated with increasing demands for digital competence of teachers, but not limited to them.

One of the problematic issues is determining the effectiveness of technology implementation in the learning process. Information technologies should be carefully integrated and combined with the content of teaching and pedagogical tools, complementing the methods and forms of educational strategies, rather than replacing them. According to Paul Fyfe (2015), "Simply integrating technologies into the learning process without a thought-out didactic system of developing the initial process is not enough. Educators must think holistically and change the functions of a modern teacher in the realities of digital life in both academic and non-academic settings" (Fyfe, 2015, p. 263).

The concept of Technological Pedagogical Content Knowledge (TPCK) combines technology, teaching, and content to offer a tool that suggests ways to consciously choose and coordinate pedagogical strategies with technologies. Initially proposed by Lee Shulman in 1986, it was later supplemented by Mishra and Koehler in 2006. They emphasized the importance of implementing technology as it enables teachers to develop personalized and authentic materials and teaching strategies. Researchers note that students' digital learning products (blogs, videos, Internet reviews, etc.) visualize and personalize knowledge perception and demonstrate the quality of the applied teaching strategies. However, teachers need skills and knowledge to select and critically evaluate the effectiveness of educational technologies according to planned educational goals. The key idea of the concept is the interrelation of the three didactic components of teaching: knowledge content (what to teach), pedagogy (how to teach), and technology (tools and resources).

The pedagogical and content components are the basis for the teacher's ability to

effectively carry out pedagogical activities. It is necessary to know why and how to teach, as well as to be competent in the subject being taught. The "technology knowledge" component involves knowledge of modern teaching technical means, such as the ability to work with an electronic board, knowledge of the possibilities and limitations of chat, how to use LMS to optimize students' learning activities, and so on.

The TPACK model is a framework that aims to explain the complex interactions between technology, pedagogy, and content knowledge. It is represented graphically as an intersection of three planes: Technological Content Knowledge (TCK), Technological Pedagogical Knowledge (TPK), and Pedagogical Content Knowledge (PCK) (see Fig. 1.2).

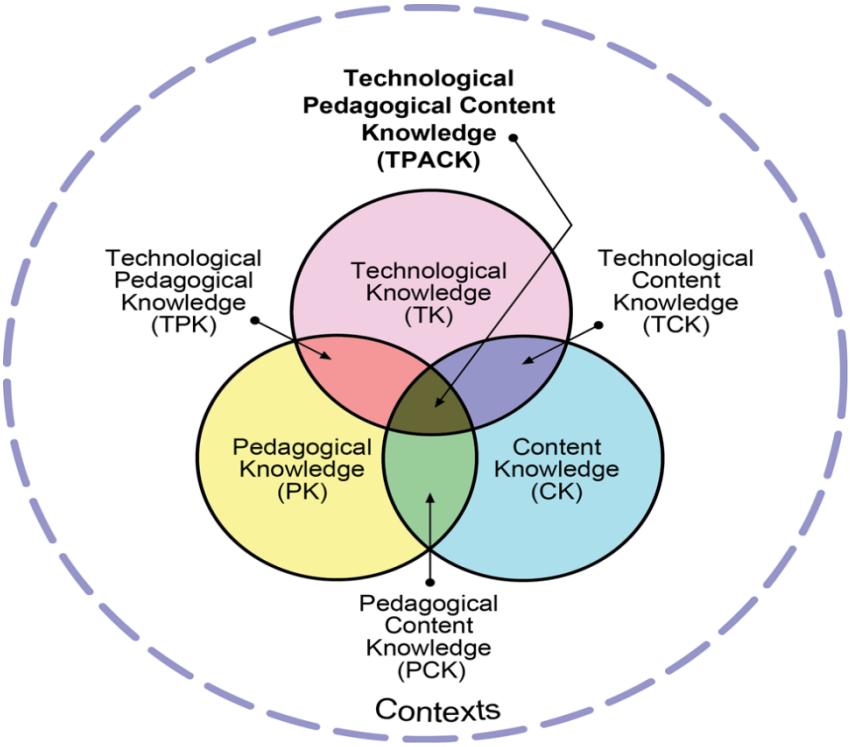

Fig. 1.2. Models of integration of digital technologies. TPACK model

The TCK plane refers to the knowledge of how to use specific technologies and tools in a given content area. TPK refers to the knowledge of how to use technology to enhance teaching and learning. PCK refers to the understanding of how to teach a specific content area.

The intersection of these three planes at the center creates the TPACK plane, which represents the ability to integrate technology effectively into teaching and learning practices while considering the content and pedagogical objectives. The TPACK model provides a holistic view of technology integration in education and

emphasizes the importance of considering the interplay between technological, pedagogical, and content knowledge.

An important issue is the development of criteria for evaluating the acquired knowledge and skills of integrating ICT according to the TPACK model. Scientists (Harris, Grandgenett, and Hofer, 2010) have developed a methodology for assessing key TPACK concepts based on four criteria, each with four levels of development (see Table 1.1). The reliability and validity of the model have been proven. The authors note that the rubric for evaluating technology integration in the educational process will help teachers more accurately assess the effectiveness of using ICT in their professional activities and promote integration into educational programs.

Several recent studies have focused on the relationship between TPACK knowledge and teachers' characteristics, particularly their professional self-efficacy. In this context, it is important to mention the research by Sahin, Akturk, and Schmidt (2009), who demonstrated a positive correlation between TPACK knowledge and teachers' self-efficacy levels. These results are consistent with other studies (Abbitt, 2011) that have shown that technology knowledge increases self-efficacy levels in ICT integration. Among the factors that influence the use of technology in the educational process are beliefs in one's efficacy, pedagogical knowledge, and cultural context.

Before selecting a technology, it is recommended to determine the problem and goal that the teacher is focused on when planning the lesson. The next step in planning is to search for a technology that meets the goal. The final step is to evaluate the accessibility and quality of the technology. One of the guidelines is to identify students' learning needs related to content in combination with teaching activities and appropriate educational technologies. We propose an algorithm for integrating educational technologies by the TPCK concept (see Fig. 1.3).

In addition to the successful implementation of digital didactics in education, a change in the thinking style of teachers towards constructive or design thinking is noted as a necessary condition. This transformation is possible with the presence of the following professional skills:

1. Creating an adaptive learning environment in which students freely determine the purpose, content, and learning strategies, and control and evaluate their personal learning progress.

2. Designing interactive content by choosing and designing tasks, problems, projects, and events using digital resources to promote student learning and creativity.

Table 1.1. Categories for assessing the degree of technology integration into the learning process.

Criterion	4	3	2	1
Program goals and technologies	The selected ICT fully corresponds to the program's goals	The selected ICT corresponds to one or several program goals	The selected ICT partially corresponds to the program goals	The selected ICT does not correspond to the program goals
Teaching technologies	Using ICT optimally supports the implementation of teaching strategies	Using ICT supports the implementation of teaching strategies	Using ICT minimally supports the implementation of teaching strategies	Using ICT does not support the implementation of teaching strategies.
Choice of technology selection (alignment with objectives and teaching methods)	The technology chosen fully meets the program's objectives	The technology chosen meets one or several of the program's objectives	The technology chosen partially meets the program's objectives	The technology chosen does not meet the program's objectives
Content, combined with methods and technologies	The content, learning strategies, and technology choices align perfectly with each other within the educational program	The content, learning strategies, and technology choices align with each other within the educational program	The content, learning strategies, and technology choices partially align with each other within the educational program	The content, learning strategies, and technology choices do not align with each other within the educational program

3. Applying alternative or authentic forms of assessment according to the goals and content of learning; using assessment to intensify learning.

Thus, by creating an innovative and meaningful educational environment, teachers ensure measurable learning outcomes that meet the expectations of all stakeholders in the educational process.

However, the implementation of such an environment is possible only if students are provided with high-quality and reliable educational resources. In our opinion, the ability to evaluate the quality of digital resources should be developed not only in

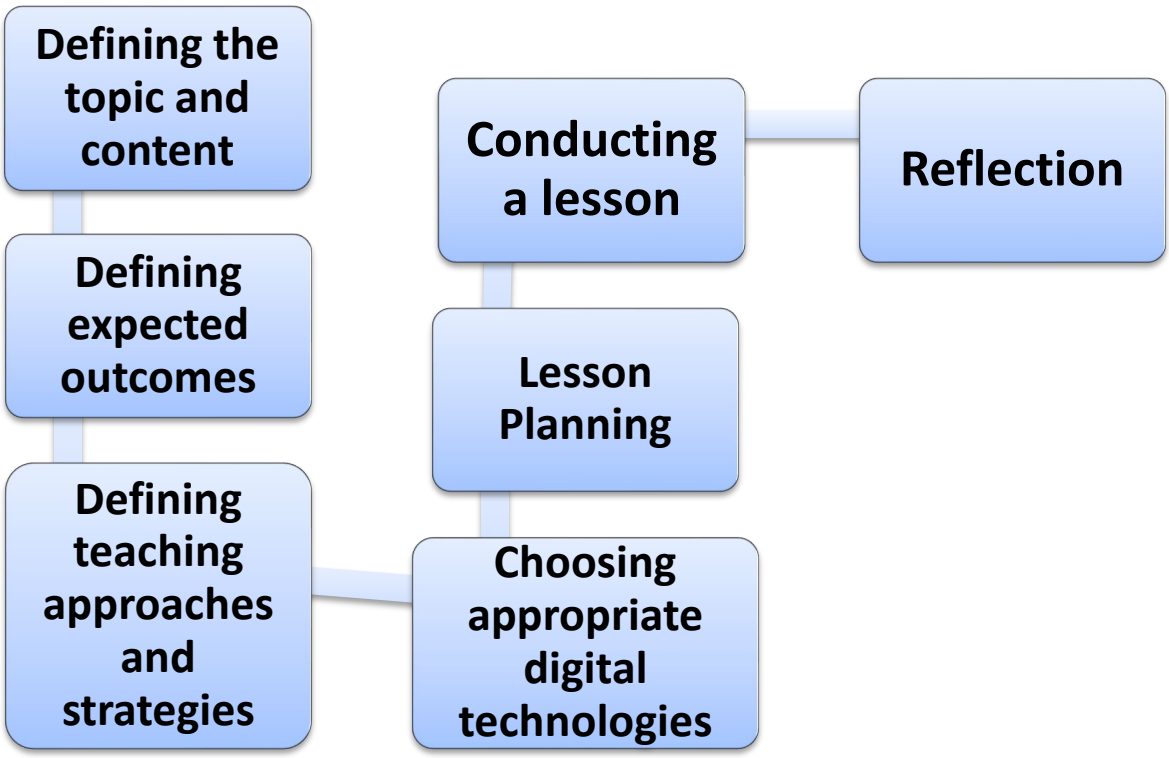

Fig. 1.3. TPCK Algorithm

teachers but also in students. To achieve this, it is important to teach students digital literacy and critical thinking skills for finding and evaluating the quality of the information provided on the Internet. The main skill of students is to find a website related to the topic and copy or paste the text, while the ability to select sources, critically interact with the content, and consider the value of the information provided remains beyond the learning process. On the other hand, students are offered a plethora of digital resources to choose from, but the reality is that there are too many resources, and students find it difficult to find a high-quality and effective platform or application because they do not know the criteria for selecting resources and the principles of using these resources.

1.2. Strategies for developing digital and media literacy

A large number of pedagogical research emphasize the benefits of developing media and information literacy skills, which are related to critical thinking skills, and emphasize the need to integrate strategies for mobile and e-learning into the educational process (Kim, Shumaker, 2015). This is a strategy that goes beyond simply

checking a website for the necessary information. UNESCO's concept defines the competencies of a modern professional that combines:

Information literacy – the ability to find, summarize, and analyze information;

Media literacy – the ability to access resources and create content;

Digital literacy – the ability to use information technologies according to their capabilities and specifications.

According to the definition by the Association of Higher Education in the United States (Information Literacy Competency Standards for Higher Education, 2000), information literacy is the ability to find, access, evaluate, and use information that encompasses all disciplines, all learning environments, and all levels of education. Academic research on the development of information literacy in higher education reveals problems of mismatch between understanding the importance of information and media literacy skills and the realities of their formation in the educational process. DaCosta (2010) states that "There is an obvious gap between the information literacy skills that instructors want their students to have and those that they actively support and develop" (p. 218). Therefore, media and information literacy are not separate skills and abilities that students can develop independently and as needed, but a continuous and systematic process that should be planned and integrated into educational programs and components.

To develop the mentioned skills and create a comprehensive system for integrating digital educational technologies into the learning process, an experimental study was conducted. Since our research aims to find practical ways and solutions, it combines data collection and analysis to ensure an in-depth study of the effectiveness of e-learning. Was collected quantitative data through surveys about students' problems and skill levels before the experiment, and we checked the quality of the research results through individual interviews with students and instructors after the experiment. Testing was provided to determine the level of skill and knowledge formation. After information literacy classes, to obtain feedback, we conducted individual surveys with students regarding the topics, necessity, and effectiveness of such classes.

During the preparatory stage, we conducted a survey of students regarding the most problematic issues related to learning with digital technologies. Students were asked to choose from a list of problem questions and add their options based on personal experience, including:

✓ Determining keywords for the search

✓ Differentiating between peer-reviewed and non-peer-reviewed journals as sources of scientific information

✓ Evaluating the quality of information sources

✓ Evaluating the validity of information

✓ Differentiating between popular and scientific resources

✓ Types of articles and databases, and tools for working with them.

The second questionnaire related to the level of ability to evaluate the quality of information. We adapted and used survey tools developed by Lisa Beutelspacher, a researcher in the Department of Information Science at Heinrich Heine University in Düsseldorf, Germany (Beutelspacher, Henkel, Schlögl, 2015). The main advantages of the evaluation tool are its objectivity, informativeness, and appropriateness for students' abilities and skills to self-assess the results of their activities. We adapted the list of questions according to the research purpose and the context of our educational environment.

1. What are some examples of search engines you are familiar with?

• Google

• Bing

• Yahoo

• Other

• I am not familiar with any search engines.

2. What are the primary indicators of a website's quality?

• Design

• Image quality

• Language

• Authorship

• Number of ads

• Types of articles

• Audience

• All of the above criteria.

3. When researching an unfamiliar topic, what are the best sources to begin with?

• Journals

• Encyclopedias or dictionaries

• Library catalogs

• Websites

• I don't know

4. Which statement is true regarding research on the Internet?

• One should check as many websites as possible

• Only one search engine should be used

• Different websites should be compared

• Only information that confirms your personal opinion should be sought

• I don't know

5. If you need to write a comparative document on the latest innovations in engineering in Ukraine and the USA, what keywords would you use to search for information?

• Ukraine, USA, innovations

• Ukraine, USA, engineers

• Ukraine, engineering

• USA, innovations

• I don't know

6. In which types of publications are scientific research findings typically first published?

• Books

• Encyclopedias

• Scientific journal articles

• Conference papers

• Manufacturer websites

• I am not sure

7. What criteria can be used to assess the quality of a Wikipedia article?

• Presence of bibliographic references

• Comments on the article discussion pages

• Number of images in the article

• Length of the article

• I am not sure

8. Where can one find the summary of a scientific article?

• Abstract

• Bibliography

• Conclusion

• Introduction

• I am not sure

9. What is the meaning of the term "peer review" in scientific publishing?

• The article has been reviewed and revised by the author's friends and colleagues

• The article has been reviewed by experts who proposed changes

• The article has been edited by the publisher

• I am not sure

10. How can one determine which scientific articles have generated the most attention in the scientific community?

• By the number of times they have been cited in other articles

• By the number of times they have been mentioned in the media

• By the number of comments they have received on social media

• By the length of the articles

• I am not sure

Our research involved 47 students from two academic groups in their second year of study when they begin to familiarize themselves with conducting research for their qualification works. The control group consisted of 22 students, and the experimental group consisted of 25 students. Both groups were asked to conduct independent internet research on the topic of "Implementation of Sustainable Development Goals in Ukraine" and prepare a presentation in English. During practical classes, teachers used digital technologies (Kahoot, Quizlet, Google Classroom, etc.), so students had experience with mobile devices and resources in class. The research lasted for two months, during which students had eight classes: five classes on information literacy using mobile learning tools for the experimental group and three classes on conducting and presenting research for both the control and experimental groups. Only students in the experimental group (n = 25) had integrated classes in English language and media and information literacy education. In these classes, students learned the basic topics of searching for and evaluating information sources. To assess the results of the study, we developed a rubric consisting of two parts: presentations (content, layout, language used) and quality of sources.

Therefore, the main goal of the research was to teach students basic rules of media and information literacy using critical thinking skills to evaluate the originality, reliability, and credibility of information. To identify problems that students could not solve independently during web research, we asked them to fill out a questionnaire, the results of which are presented in Table 1.2.

Table 1.2. Problematic issues

	Problem Content	Percentage
1	Definition of key terms	53%
2	Distinguishing between reviewed and non-reviewed publications	77%
3	Evaluating the quality of information sources	83%
4	Distinguishing between scientific and popular sources	80%
5	Types of articles and how to differentiate them	64%

Regarding the results of the second survey on information literacy, we observed that the majority of students (96%) turn to Internet resources to search for scientific information, while only 4% of students visit libraries to find reliable scientific sources because they do not trust the information provided on the internet. During the study, 54% of students used only one search engine and referred to sources that are easily accessible, free, and understandable in terms of language and content; 37% of students checked all proposed pages and chose one source based on its popularity and number of visits. Only 8% of students compared websites and chose based on their content, while 92% of students considered various types of Wiki-encyclopedias and manufacturer websites to be the most credible and reliable sources because, according to students, books and encyclopedias are outdated and contain a lot of additional information. "Wikipedia articles provide all the necessary information with a large number of reliable references", students commented on their answers to the 6th and 7th questions during the interview. Regarding the selection criteria for the source, 43% chose the number of references as the key criterion, 37% paid attention to comments, and 20% of students used links proposed in the Wiki-encyclopedia. Answers to the 10th question about the validity of the article varied significantly: 75% of students chose the date as the main criterion, 20% chose the source, and 5% chose the author. No one chose the number of citations or the length of the article.

The primary conclusions of the survey results indicated a lack of knowledge and a low level of critical thinking skills in both groups. The results of the summary interview with the students from the experimental group were more positive, and comparing the results of the research from both groups, teachers, as well as participants, were convinced of the difference in the quality of the material presented by the experimental and control groups. Both groups tried to find reliable sources and accurate information, but the control group spent more time searching for information, could not find data based on factual information, and about 35% of their references

were unreliable. In contrast, students in the experimental group demonstrated significant facts with reliable data and sources in a shorter period and with less effort. All respondents agreed that the experiment was useful and productive, and they wanted to improve their knowledge and skills in information literacy in the future.

Analyzing the strategies, measures, and digital educational technologies used during the experiment, we propose a brief overview of the most useful and interesting tools for students. To improve critical analysis skills, we suggested that students choose programs such as Google Keep, Evernote, or Seesaw, which help integrate data from mobile devices, visualize information using infographics, help identify patterns and key ideas, edit, annotate, search for evidence to evaluate information. These tools allow students to create digital portfolios of their work, allowing teachers to monitor the dynamics of the learning process, and control and direct search and learning activities.

To help students develop the skill of identifying keywords, the following digital educational resources were suggested: Google Trends, Keywords Everywhere, and Keyword Shitter. The characteristics of popular and scholarly articles, as well as reviewed journals, were explained using examples provided in the resources of the company EBSCO, which creates and publishes scientific databases. Students were given explanations regarding the key characteristics of articles they should pay attention to when searching for articles: content, author, audience, language, infographics, structure, methodology, and bibliography. Table 1.3 presents a brief description of the proposed learning strategies for developing the ability to evaluate the quality of information.

Students create mind maps for proposed topics using resources such as Mindomo, MindMeister, or MindMup.

One of the advantages of using digital educational technologies is the ability to individualize the learning process and adapt it to the capabilities and needs of students. Therefore, we offer students more than one application or platform for completing tasks, as this diversifies their experience, helps them find their learning style, and improves their media and information literacy skills.

Developing information literacy is an extremely important skill for university graduates, as it helps them grow professionally and achieve self-realization. In summary, we will outline several recommendations for the successful implementation of the learning process with the support of digital educational technologies:

- The expected learning outcomes should be clear and understandable to students

Table 1.3. Learning Strategies

Goal	Strategy	Task
Creating a mind map to identify keywords	Collaborative learning strategy	Students create mind maps for proposed topics using resources such as Mindomo, MindMeister, or MindMup
Teach the basic rules for evaluating the quality of information	Cooperative learning strategy	Students search for reliable sources of information on a topic assigned by the teacher and develop criteria for evaluating the quality of information
Evaluate the quality of information through critical analysis	Individualized learning strategy	Students are provided with criteria for evaluating the quality of information and samples of information sources. Using critical analysis methods, students must determine high-quality sources. We recommend using the platform www.exploratree.org.uk, which provides instructions for structuring the process of analyzing the quality of information
Teaching to distinguish between popular and scientific articles	Situational learning strategy	Students are given articles of different genres and characters, and using the EBSCO platform, they determine the type of article
Providing knowledge about the peculiarities of article reviewing	Peer assessment	Students create content, develop criteria for peer assessment, and review each other's works

for activity planning.

- Feedback from the teacher should be timely and constructive.
- Learning strategies should take into account individual capabilities and needs, learning styles, and motivation by integrating different types of digital educational technologies.
- The choice of resources, study time, and level of complexity should be flexible to personalize learning.

The analysis of learning strategies allows us to conclude that the features of the development of knowledge and skills in information and media literacy justify the growing need for teaching students critical analysis of digital content and resource quality. Privacy and security rules are also components of information literacy that should be part of the educational content, promoting the prevention of internet bullying and personal information loss. To effectively implement the described learning process, it is necessary to create an innovative learning environment with subject-to-subject communication in universities, where students and teachers have the opportunity to experiment with digital educational technologies, learning strategies, and materials according to the needs and capabilities of all subjects involved.

We offer a list of resources for learning foreign languages:

VOA Learning English offers real-time news stories to engage students who are learning English. The website contains reading content on various topics for students with different levels of language proficiency, including world news, politics, culture, business, science, social studies, life in the USA, and pop culture. Some articles may also include short audio clips and videos (most limited to approximately 1,500 words). News broadcasts are also read at a third slower than normal speed, making them easier to understand. The main role of VOA is to provide programs for radio, television, and the internet outside the US in English and other languages.

PodBean is a podcast app and player for finding, downloading, and listening to your favorite podcasts, audio broadcasts, FM, radio, and audiobooks anywhere and anytime. The app allows you to listen to over 50 million episodes of podcasts from around the world, with content ranging from news, comedy, education, sports, and more.

Quizlet is an online learning tool that saves time by helping students prepare for tests with interactive tools and games. In Quizlet, information is organized into "study sets" that users, such as teachers or students, add to their accounts. When using Quizlet, students log in and select the appropriate set of terms to study, which may be created by the teacher or other users. Due to its accessibility and flexibility, Quizlet can be used for students at any level of knowledge.

The Corpus of Contemporary American English (COCA) is the only large, genre-balanced corpus of American English. It is the most widely used corpus of English, linked to many other English corpora, which offer an unprecedented understanding of English language variation. The corpus contains over a billion words of text (25+ million words annually from 1990-2019) from eight genres: popular

magazines, newspapers, academic texts, television, movie subtitles, blogs, and other web pages.

Grammarly is a writing and grammar checker designed to help writers correct their mistakes. The resource can be used on the internet, as an application for Windows or Mac, or as an extension for Chrome, Safari, Edge, or Firefox. After authors create a rough draft of the text, they can paste or upload it, and suggestions for improvement and correction appear, and users can choose to make changes on the spot or delete the suggestions. Users can also access advanced error logs. Grammarly is free to download and use for basic grammar and spelling checks, but there is a Premium version that adds features such as goal setting, plagiarism detection, and advanced feedback (especially for readability).

YouGlish is a simple way to learn the correct pronunciation of words by hearing them pronounced in YouTube videos. This tool uses YouTube to play back the commonly spoken pronunciation of words in different languages by native speakers. YouGlish is very user-friendly, and thanks to its YouTube base, YouGlish is accessible from any device with a web browser.

"ToPhonetics" is an online converter that transforms English text into phonetic transcription or the International Phonetic Alphabet (IPA). Simply insert or type the English text into the text field and press the "Show transcription" button. The educational potential includes the choice between British and American pronunciations. When the British variant is selected, the sound [r] at the end of a word is pronounced only after a vowel. The structure of the text and sentences (line breaks, punctuation, etc.) is preserved in the phonetic transcription, making it easier to read. Words in all caps are interpreted as abbreviations, and if a word is not found in the database, the transcription will show hyphens between the letters.

"Lingro" is a free website that helps students learn languages and offers additional features. It has a standard dictionary that translates words into 11 languages, as well as a web browser that allows you to upload a webpage and then click on any word to get an immediate translation. Users can also download a browser plugin that does the same thing but has a wider range of features. Users can create and categorize word lists, which can be used in learning and games. There is also an option to add a mini-dictionary icon to your website, allowing others to translate it. To add a word to the dictionary on the site, click on the dictionary builder, and then select the language. A list of words that have not yet been translated by the user community will appear, then select a word from the list and add your translation.

The **"HotPotatoes"** package includes six programs that allow you to create interactive exercises with multiple choice, short answer, mixed sentences, crossword, matching, and ordering exercises, as well as exercises to fill in the blanks. HotPotatoes is free and can be used for any purpose and any project.

GoogleForms is a web application that allows you to collect information from users through personalized surveys or quizzes. Then the information is collected and automatically connected to an electronic spreadsheet. The electronic spreadsheet is populated with answers to surveys and tests. This is a simple and one of the easiest ways to save data directly in an electronic spreadsheet.

ProProfs platform is the easiest online software for creating quizzes and tests. There is also access to a library of over 100,000 ready-made questions of 10 different types, including fill-in-the-blanks, multiple choice, and more using the quiz-making tool. Images, presentations, and videos can be added to make the quiz interactive. Quizzes work well on all types of devices, including desktops, laptops, and mobile phones. After publishing the quiz, it can easily be shared via email, embedded on a website or blog, or even shared with private groups, with each user having their login credentials. There is also the ability to create quizzes in over 70 languages using our online quiz tool.

Padlet provides opportunities for creating and collaborating through interactive multimedia bulletin boards. It is a website and app that allows students to organize information on virtual bulletin boards using a simple drag-and-drop system. Students can start with a template or a blank page and add text, links, images, videos, and documents. Padlet boards can be shared with others via email or social media or embedded on a website. Padlet is ideal for brainstorming, collaboration, research projects, and presentations.

Flipgrid is an innovative educational tool that allows educators to create engaging and interactive video-based discussions for their students. It has a wide range of abilities that can be used for teaching various subjects, including language learning.

One of the key abilities of Flipgrid is its ability to promote active learning. In language learning, students need to practice speaking and listening skills, which Flipgrid enables through its video discussion feature. Teachers can create topics related to language learning and have students record their responses in the target language. This allows students to practice speaking and listening skills in a low-pressure, asynchronous setting, while also promoting self-reflection and critical thinking. Another benefit of Flipgrid is its ability to provide opportunities for peer feedback and

collaboration.

Quibblo is a social networking and quiz-making website that can be used as a tool for teaching various subjects, including language learning, geography, history, and literature. It allows teachers to create quizzes, surveys, and polls that students can take either in the classroom or remotely. Quibblo's quiz-making tool allows teachers to create quizzes with multiple choice, true/false, and short answer questions. They can also add images, videos, and audio files to the questions to make them more interactive and engaging for the students.

Microsoft Project is a powerful project management tool that can be used to teach project management concepts to students. With its wide range of features and capabilities, Microsoft Project can help students learn about scheduling, budgeting, resource allocation, task management, and much more.

Evernote is a powerful note-taking application that can be used as a valuable tool in teaching. It allows users to create notes, organize them, and access them across multiple devices.

Popplet is a user-friendly and intuitive digital tool that allows users to create visually appealing mind maps, concept maps, and diagrams. It is a versatile tool that can be used in various educational settings, including classrooms, online courses, and self-directed learning. One of its primary abilities of Popplet is its capacity to enhance learning and teaching by enabling students to create and organize their ideas clearly and engagingly. With Popplet, students can develop their critical thinking skills by analyzing and synthesizing information from various sources and constructing visual representations of their understanding. Teachers can also use Popplet to present information in a visually appealing way, making it more accessible and engaging for learners.

Schoology is a cloud-based learning management system (LMS) that is designed to help teachers and students manage their academic activities in a centralized platform. It is a user-friendly platform that offers a wide range of features that simplify the management of various aspects of the teaching and learning process. One of the key features of Schoology is its ability to provide teachers with a platform to create and manage courses. This includes the ability to create assignments, assessments, and learning materials such as videos, presentations, and documents. Teachers can also use Schoology to track student progress and provide feedback on assignments. Another feature of Schoology is its ability to facilitate communication between teachers and students. Teachers can use Schoology to send announcements, messages, and

reminders to students, while students can use it to ask questions and seek help from their teachers.

Blogger is a popular blogging platform that allows users to create and publish blogs for free. It was created by Pyra Labs in 1999 and was later acquired by Google in 2003. Blogger is a user-friendly platform that requires minimal technical knowledge, making it a popular choice for bloggers who want to start their blog without having to worry about the technical aspects of web development. One of the key features of Blogger is its simplicity. Users can easily create a new blog by selecting a template and customizing it to their liking. Blogger offers a wide range of templates that users can choose from, or they can create their custom templates using HTML and CSS. This makes it easy for users to create a professional-looking blog without having to hire a web designer.

WordPress is a popular content management system (CMS) that is widely used for creating blogs, websites, and online portfolios. It is a versatile platform that is used by individuals, businesses, and organizations of all sizes. WordPress has many abilities that make it a valuable tool for students in various educational settings. WordPress has a simple and intuitive interface that allows students to create and manage their blogs and websites without needing any technical skills. This makes it an ideal platform for students who want to showcase their work or create a digital portfolio. Another ability of WordPress for students is its flexibility. WordPress can be used to create a wide range of websites, including blogs, e-commerce sites, and online forums.

LiveJournal is a social networking platform that was launched in 1999. It is a blogging platform that allows users to create and share their blogs, as well as read and comment on other users' blogs.

Twitter is a social media platform that allows users to post short messages or "tweets" of up to 280 characters. While Twitter is often associated with casual use and social networking, it also offers several abilities for teaching, including microblogging, real-time communication, hashtags, and authentic learning experiences.

Tumblr is a microblogging and social media platform that was launched in 2007. It allows users to create and share multimedia content in the form of short blog posts, photos, videos, and other types of media. While Tumblr is often used for personal blogging and social networking, it also offers several abilities for teaching. Tumblr offers a flexible platform for students to express their ideas and creativity. Teachers can use Tumblr as a tool for assignments such as creative writing, visual storytelling, or multimedia projects. Students can also use Tumblr to showcase their work and

receive feedback from their peers.

ScoopIt is a content curation platform that allows users to discover, curate, and share content across various topics and industries. It is a powerful tool for content marketers, researchers, and social media managers looking to stay up-to-date with the latest trends and news in their respective fields. With ScoopIt, users can easily create their content hubs and curate content from around the web to share with their audience.

An **ePortfolio** is a digital collection of evidence that showcases an individual's learning, achievements, and professional development over time. In the context of teaching, ePortfolios can be a valuable tool for teachers to reflect on their practice, track their professional growth, and showcase their accomplishments to potential employers. By using an ePortfolio, teachers can document their teaching philosophy, lesson plans, student work, and other evidence of their effectiveness as educators.

A **wiki** is a collaborative website or platform that allows users to create, edit, and share content in real time. In the context of teaching, wikis can be a valuable tool for promoting collaboration, knowledge-sharing, and critical thinking among students. By using a wiki, students can work together to create and edit content, share resources, and engage in ongoing discussions and debates.

WebQuest is a structured, inquiry-based learning activity that uses the Internet as a primary source of information. In the context of teaching, WebQuests can be a powerful tool for engaging students in authentic, real-world learning experiences that promote critical thinking and problem-solving skills. By using WebQuest, students are presented with a real-world problem or challenge and are tasked with using the Internet to research and develop a solution.

TED Talks are a series of engaging and informative presentations that cover a wide range of topics and disciplines. In the context of teaching, TED Talks can be a valuable tool for enhancing student learning and promoting critical thinking skills. By incorporating TED Talks into their lesson plans, teachers can expose students to new ideas and perspectives, and inspire them to explore topics in greater depth.

MOOCs, or Massive Open Online Courses, are online courses that are designed to be open and accessible to anyone with an internet connection. MOOCs offer a wide range of courses and disciplines, and they can be valuable tools for teaching and learning. By using MOOCs, teachers can provide students with access to high-quality, engaging course materials from leading universities and experts from around the world.

The increasing use of digital technologies and social media in daily life has led to the need for individuals to be proficient in digital and media literacy. The ability to

access, analyze, evaluate, and create media content has become an essential skill for success in the 21st century.

Strategies for Developing Digital and Media Literacy:

1. Teaching Digital Citizenship: Digital citizenship education aims to help students become responsible digital citizens by providing them with the knowledge, skills, and attitudes needed to navigate the digital world safely and effectively. This includes understanding online privacy, cyberbullying, and digital footprints.

2. Project-Based Learning: Project-based learning is a teaching method that emphasizes active learning, critical thinking, and collaboration. It allows students to develop digital and media literacy skills through real-world projects that require them to research, analyze, and create digital content.

3. Media Creation: Media creation involves students in creating their own media content, which requires them to develop digital and media literacy skills. Students can create videos, podcasts, blogs, and other digital content that allows them to develop their creativity, critical thinking, and communication skills.

4. Collaboration: Collaboration is essential in developing digital and media literacy skills. It allows students to work together to solve problems, analyze media content, and create digital content. Collaboration also promotes communication, critical thinking, and teamwork skills.

The use of digital educational technologies has gained significant attention in the field of education, both in theory and practice. Educators are exploring new ways to integrate these technologies into the learning process to improve student engagement and enhance learning outcomes. This monograph provides an in-depth examination of the fundamental concepts and methods for integrating digital educational technologies into teaching practice. The various types of digital educational technologies, such as hardware, software, and online tools, are discussed, along with their potential benefits and limitations. The TPACK model is also explored as a framework for effectively incorporating technology into teaching practice. The successful integration of digital educational technologies requires a deep understanding of the technology and its impact on the learning process. It is crucial for educators to continuously learn about the latest digital educational technologies and stay up to date on best practices for their integration into teaching practice to prepare students for success in the digital age.

KAPITEL 2 / CHAPTER 2 [2]
DIGITAL EDUCATIONAL TECHNOLOGIES AS A MEANS OF INDIVIDUALIZING FOREIGN LANGUAGE LEARNING FOR STUDENTS AT UNIVERSITIES

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2.1. Digital educational technologies as a means of individualizing foreign language learning

Digital technologies have become an increasingly important aspect of education in recent years. They offer a range of possibilities for teachers and students in choosing the means and forms of foreign language learning. The development of digital technologies, mobile technologies, computers, and Web 2.0 network services has led to growing attention to the problem of individualized learning and language learning. Digital technologies provide students with not only much wider access to resources but also accessibility for autonomous learning (Reinders and White, 2011). The rapid increase in internet resources, network services, and educational software together activates the search and desire of students to learn new things and self-improve (Godwin-Jones, 2007).

The integration of digital technologies into education has become a subject of many educational studies. It is related to the rapid development of the requirements of modern information society for university graduates. The process of integrating digital technologies has become more relevant as modern students are born into a digital age and are comfortable using digital technologies.

However, for effective learning using digital technologies and maximizing their pedagogical potential, teaching is necessary. It is not entertainment and games that students learn on their own. Learning strategies for working with technologies differ from those used in the classroom, so teachers also need to increase their level of digital competence. The feasibility and effectiveness of integrating digital technologies and individualized learning into education are related to the rapid development of the requirements of modern information society for university graduates (Hauck & Hampel, 2008). The process of integrating digital technologies has become the subject of many educational studies. Shetzer and Warschauer (Shetzer, & Warschauer, 2000, p.176) suggest that autonomous students with high levels of digital competence are

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capable of taking responsibility for their own learning, working on individual and joint projects that are available to both local and global audiences. However, this was proposed even before the era of Web 2.0, when Internet users gained access to editing and managing websites and platforms. Modern students are born into a digital age and are comfortable using digital technologies, which makes the integration of these technologies into education even more relevant.

One of the most important skills that students need to develop is the ability to distinguish relevant and irrelevant information critically. To achieve this, the instructor must carefully plan and design the strategy to inform students about various ways they can choose to learn and determine how to use high-quality digital content from the first day of class.

Two main aspects of integrating technology are identified for mastering foreign language skills: basic and intermediate. The basic aspect involves using the internet as an asynchronous source of additional materials to provide students with reading or listening texts. The intermediate aspect involves organizing and creating online educational materials by instructors and giving students access to them. Under these conditions, instructors retain some control over the material that students have access to, while students still have a wide range of options to choose from regarding specific texts or materials they want to work with, as they can choose from the categories proposed by the instructor.

Recent studies (Sockett, 2013; Sundqvist, Sylvén, 2016; Lee, 2019) demonstrate that language learning occurs autonomously when students find multimedia resources that match their abilities and interests. These types of activities may initially be unrelated to learning, but rather to leisure or socialization. Nevertheless, even under such conditions, students gradually realize that learning can take place through online activities. This, in turn, requires more targeted attention to the development of language competence, which occurs along with transformations in primary motivation, oriented towards leisure, to constant, internal motivation oriented towards learning.

This type of learning is defined as "self-directed natural learning"(Benson, Chik, 2010, p. 74) and questions the traditional approach based on sequential learning programs, the study of grammatical rules, and the development of discrete skills, instead aligning with a language based on the use of patterns and clichés (i.e. multi-word units of vocabulary and grammar) that are considered as the foundation for language acquisition.

One of the advantages of technology-based language learning is the ability to

present the authenticity of the language in various contextual variations, from which students learn how the language is used idiomatically and how it changes depending on the context, registers, or speech acts (Sockett, 2013, p.55). In fact, repeated listening to songs, watching several TV series episodes, or repeating game scenarios help learn patterns through "high-frequency and contextual exposure to vivid examples" (Sockett, Toffoli, 2012, p.148). In the process of repeated listening and viewing, students go through a series of cognitive processes, including "forming categories, identifying patterns and novelty, as well as imitation" (Sockett, 2013, p.51). This process is likely effective not for all users but only for intermediate and advanced language learners (Lai, Hu, Lyu, 2017).

A number of modern studies focus on the integration of mobile devices (Chik, Ho, 2017). The widespread use of mobile devices, especially smartphones, is one of the main factors in the growth of informal language learning on the Internet (Godwin-Jones, 2018). Streaming services such as Netflix are available for mobile devices, as are virtually all online services today, typically through specialized applications. Smartphones allow for extensive customization, leading to highly individualized program configurations, context, and settings. Since these devices have become constant companions of people, they are always accessible. Smartphones are used to bridge the gap between local and global, as well as between leisure and work or study. They provide learning that can connect real-life experiences with global communities on the Internet. This contextualized learning experience promotes an ecological model of learning that encompasses the student, peer networks, friends and family, educational or professional contexts, and global communities. Mobile devices provide a high degree of on-demand access and freedom of choice, often associated with student autonomy (Murray, Lamb, 2018).

During the implementation of digital technology integration, Jiménez and Pérez (2001) propose adhering to the following conditions:

-taking into account the existing quantity of technical resources available to educational institutions and teachers, including the availability of technical staff to solve a range of mechanical, software, and technical problems.

-taking into account the number of technological tools available to students, both at home and in educational institutions.

-the actual level of digital literacy of students and teachers.

-motivation to use technology and the readiness to effectively use these tools by both students and teachers.

-the appropriateness and methodological justification for the use of digital educational technologies.

Based on the opinions of students regarding autonomous learning using digital technologies, researchers have found that the role of teachers changes, and students perceive them as consultants who provide assistance in managing the learning process, advising them on learning strategies, creating an atmosphere that encourages and supports autonomous learning, recommending resources, and encouraging active use of these resources (Fang & Zhang, 2012). According to Wang (2007), technology integration in language classrooms not only saves time but also inspires creativity and provides new opportunities for students. Wang (2007) argues that among the different roles of teachers, students are more interested in the role of consultant for providing resources and learning strategies rather than the role of teachers providing assistance in planning, monitoring, and evaluation processes.

Scientists attribute the cause of such a change to the lack of confidence in their abilities among students to participate in extracurricular activities, or the lack of information about possible educational resources and opportunities, or the lack of skills to effectively use resources (Gamble et al., 2012). This conclusion is supported by the results of Alajmi's research (Alajmi, 2011), in which students indicated in questionnaire responses that they lack understanding of the educational potential of technological resources, orientation in the diversity of technological resources, and experience in effectively using technological resources for learning. Therefore, from the perspective of students, the support that teachers can provide in promoting independent use of teaching technologies should focus on exchanging information about resources, encouraging active use of technological resources, and helping to develop the ability to effectively use resources for participation in self-directed individualized learning.

Research also confirms that students use the technological resources that their teachers use in class. For example, the experience of using blogs in class helped to transform their use from entertainment tools into learning tools. Moreover, the guidance of instructors on the use of technological resources for learning is crucial in helping students make the transition from using technologies as entertainment tools to using them as learning tools. Teachers support students by encouraging and guiding them on how to use technological resources for learning. Carson and Mynard (Carson, Mynard, 2012) identified various ways in which teachers can promote self-directed learning, including providing students with conceptual information that increases their

awareness of the language learning process and metalinguistic and metacognitive concepts; providing methodological information about resources, strategies, and engaging students in experiments to determine what works for them and what doesn't; and providing psychological support for affective management.

The research results allow us to state that it is important not only to focus on what teachers can do with technology in the classroom, but also to investigate how to maximize the potential of technology for learning by increasing the quantity and quality of independent use of learning technologies by students outside the classroom. An example of such research is the work of Lai (2015). The researcher found that teachers influenced students' independent use of language learning technologies outside the classroom through encouragement, recommendations on resources, and support for independent behavior. The use of technology by teachers in the classroom affects student behavior outside the classroom, but this is only one effective factor. Other supporting means include online assignments for out-of-class work that involve the use of technological resources and instructions on using technological resources for learning, web quests, creating presentations, and working with online trainers. The study's conclusions emphasize the importance of increasing teachers' awareness of the significant support they should provide to students to improve their independent use of learning technologies outside the classroom (Lai, 2015). The study also calls for more attention to be paid to studying the essence of the teacher's influence on the use of technologies aimed at independent learning, as well as studying effective ways in which teachers can exert their influence to promote independent use of technology for more effective learning.

Different forms of support have varying functions in promoting the independent use of technology for language learning. Encouragement alone is insufficient, as teachers need to play an advisory role in guiding students on the selection and effective use of technology for learning. This calls for professional development initiatives aimed at equipping teachers with the knowledge and skills required to provide consultations to meet the individual learning needs of students. Several research studies have explored the effectiveness of remote learning, and they reveal that students use the same metacognitive strategies, including self-direction and affective strategies, as classroom learners.

In their study, Koban-Koç and Koç (2016) explored cognitive, metacognitive, and social strategies used by students in individual self-directed online learning. The results showed that while students monitored the results of their learning, they used fewer

cognitive and social strategies. Only a few students set learning goals, and less than half planned how to study English online. Similarly, students rarely translated unfamiliar words, instead using language guessing strategies based on context when reading. The study suggests that classrooms can be transformed into resource centers with computer-assisted language learning and multimedia devices to provide students with different ways of using learning strategies effectively.

VELA software, developed by the Hong Kong University of Science and Technology, is an interactive online system that provides advice to students on learning English and offers opportunities to solve language learning problems using metacognitive strategies. Another effective way of developing individual self-learning through the use of learning strategies on the internet is eTandem, a distance learning system and language learning program that promotes student autonomy and understanding of socio-cultural peculiarities. The effectiveness of this form of autonomous learning was studied by Stickler and Lewis (2008), who concluded that the partnership between the language native speaker student and the language learner student fostered interdependence and support, enabling students to manage their learning and make decisions about what, how, and when to learn.

In electronic tandem, students behave autonomously, making important decisions in the learning process, thus developing metacognitive skills as they compare speech structures of their native language with the foreign language for a deeper understanding of the principles of construction. The University of Oviedo in Spain and the University of Sheffield in the UK have successfully integrated the eTandem technology into their curriculum. Little (2003) argues that in tandem, individualization is envisaged as the very form of learning from the very beginning, as the students themselves must behave autonomously.

A study (Joshi,2011), was conducted to examine how mobile devices contribute to personalized learning, the skills they develop, and whether smartphones satisfy all educational needs of students. Results showed that smartphones help students acquire skills in personalized learning, critical thinking, creative thinking, communication, and collaboration. Students who use smartphones are aware of how to set personal goals, and smartphones help them seek help and correct their mistakes. While students still rely on teacher support to set learning goals and evaluate their effectiveness, the study emphasizes the importance of teacher support and practice in the process of mastering personalized learning skills. Access to information via smartphones encourages meaningful communication between teachers and students, enabling the creation of

high-quality work. The use of smartphones increases students' level of critical and creative thinking, develops their communication and collaboration skills. However, a smartphone can never replace a teacher, and students still rely on achieving their learning goals.

A group of scientists led by Fang (Fang et al., 2012) proposed a model for integrating web resources into the self-learning process. According to the model, the web environment offers students an unlimited number of resources and informational messages. Students must analyze their own technical means, make the right choice of resources, work mode, and choose the type of interaction. However, learning through web technologies still remains a problem for students. The use of internet sources is mandatory for blended learning contexts. The level of readiness to accept and use web resources depends on students' level of digital competence. Individual self-learning through web resources positively affects motivation to learn. Therefore, it is important to integrate and optimize online and offline course design to reduce barriers to students' acquisition of learning technologies, thereby increasing motivation to learn.

Autonomous language learning is a complex process that involves cognitive, social, physical, pedagogical, and socio-political contexts. Through technology, the teacher sees the student in complete interdependence of individual and social contexts. Autonomous learning encourages critical reflection, creativity, and personal initiative. The development of individual characteristics is achieved through shared, democratic, and decentralized learning, which is of great importance in the development of student autonomy. The study concludes that smartphones and web resources contribute to personalized learning, but teacher support and practice are crucial for the development of personalized learning skills.

2.2. Educational and organizational approaches to integrating digital educational technologies into the process of teaching foreign languages

The use of digital technologies is one of the directions of informatization of education and, at the same time, contributes to the formation of information culture as a component of a professional culture of a specialist, the development of such professionally significant qualities as professional and language competence, mobility, adaptability, autonomy.

Foreign language teachers realize the obvious fact that language cannot be learned

only in the conditions of formal education. Educational technologies contribute to expanding opportunities beyond the university and provide free access to authentic resources. The use of technologies has become a powerful and dynamic means of developing students' autonomy (Benson, 2004, O'Rourke & Schwienhorst, 2003), and for this purpose, various types of technologies are used, such as Massive Open Online Courses (MOOCs) (Schwienhorst, 2003), blogs (Lee, 2011), virtual learning platforms (Collentine, 2011) and digital narratives (Halfner, Miller, 2011).

The most widespread and multifunctional digital resource that combines individual independent learning and foreign language learning, we consider open online courses developed by leading scientists and educational practitioners. Let's consider the structure and possibilities of this resource.

Massive Open Online Courses (MOOCs) are a massive digital course hosted in a virtual environment designed to attract a wide audience to independent personalized learning. As a special type of digital education, MOOCs can be viewed as a combination of education elements (teaching/learning) and elements of social intervention (propaganda/publicity). There are four popular MOOC platforms: Coursera, Edx, Canvas, FutureLearn; Udacity. In Ukraine, the popular platform is "Prometheus." Coursera is a platform created by an American venture investment developer in collaboration with well-known American universities, offering a large number of courses in computer science, humanities and social sciences, economics, medical sciences, engineering and construction, and more.

Teachers who collaborate with the course have the opportunity to evaluate students. Based on the results of the final test, students receive a diploma. Edx is an open access MOOC platform jointly developed in collaboration between the Massachusetts Institute of Technology and Harvard University. The platform offers free and paid courses in computer science, chemistry, electronics, and humanities and social sciences. Udacity is another platform developed by a professor at Stanford University and a venture capitalist. This platform offers online courses in computer science, natural sciences, mathematics, and programming. Udacity not only issues students with a corresponding certificate upon completion of the course, but also allows students to transfer the course credit to the appropriate academic credit through agreements with universities.

A typical course aims to teach and has a clearly structured content, developed lessons for teaching and consolidating material, instructions for practical tasks, interactive forms of control or assessment. Depending on the technical capabilities of

the platform, interactivity can take the form of structured discussions, tests and questions, quizzes, or exercises with subsequent peer assessment. Many projects proposed on online platforms have informational and methodological support from leading universities and scientists. A typical course development team includes several different groups: an academic team (teachers, tutors), a digital learning team (project managers, digital education experts), and a media production team (videographers, producers/editors). Information messages are presented in a multimodal mode, that is, using different types of media: video and audio formats, animation, presentations, etc.

An online course has a weekly structure, and the amount of material to be learned is calculated in hours per week. Each week introduces a new topic or section. The structure, content, and forms of course organization depend on the discipline, the developers' vision, and technical capabilities. Typically, a course includes several units, each of which includes a series of topics or lessons, followed by a quiz or task to assess understanding of the material. In addition, the course may include more complex practical assignments, such as group projects or research papers.

The system of individual independent learning activity during work with the course is similar to the formal learning system and consists of the following stages: familiarization with the educational material, diagnosis of abilities and needs, assessment of prior preparation, planning, development of organizational strategies, and self-assessment. The feature of distance learning is that the educational material is created by experts and the information messages are relevant and of high academic quality, the forms of material presentation are determined, educational strategies are chosen, and there is help from tutors and the community that takes the course simultaneously with the learner.

The analysis of open distance courses allows us to conclude that online learning is an effective tool for developing students' abilities to communicate, exchange information, cooperate, and use foreign languages. This method of learning is a real opportunity to rethink what is essential in the teaching and learning processes, to analyze personal strategies for creating, exchanging, and assimilating knowledge.

Among the digital technologies that combine foreign language learning and the formation of individualized autonomous learning, we propose using digital narratives and open access distance courses. Let's consider the essence and didactic potential of digital narratives. According to L. Tymchuk (2016), a digital narrative is a dynamic means of conveying information messages expressed in a common digital code. Digital narratives include texts, presentations, stories, video messages, blogs, descriptions, and

professional information messages. Digital narratives are applied at all stages of continuous formal and informal education, underscoring their boundless didactic potential. Foreign language narratives can serve as a self-made learning product for summative assessment. Students choose the topic, format, structure of the narrative, language genre, and register, and select the appropriate vocabulary and grammatical structures. In studies on narratives, Tymchuk notes that digital stories are effectively used for the development of personal reflection, a key skill of individualized autonomous learning. Narratives have the function of transforming views of the world around and personal experience, freeing up hidden accumulated negativity (Tymchuk, 2016, p.91). By creating narratives, students reveal new ways of their development and self-discovery, perceive their experience in a new way, and transform their personal vision of life situations to overcome difficulties and further self-development. Based on the above observations, we can assert that digital narratives are a powerful universal digital tool for language learning and developing critical thinking and creativity.

The use of technological means is divided into six main educational categories: resources for literacy learning, web tools, digital information resources, social media sites, learning management systems, and cloud services:

1. Resources for literacy learning, such as e-books, blogs, and discussion forums, promote learning through demonstrating examples of well-written ideas and texts. This is especially important in foreign language learning, as authentic texts demonstrate living and standardized language.
2. Web tools, such as podcasts, wikis, and media editors, provide opportunities for students to demonstrate their learning in various ways. Using these tools helps students not only develop digital competency skills but also enables them to share information and receive support from an authentic audience.
3. Digital information resources provide students with timely feedback. Instant access to encyclopedia sites, podcasts, expert websites and blogs, as well as media sites, allows students to interact effectively with content and experts. Web research is the most common use of technology. Although students require knowledge and skills to critically evaluate the quality and validity of information they find on the Internet, it is clear that useful and previously inaccessible resources can help students research practically any topic, and the freedom to choose resources promotes the development of individualized learning skills.
4. Social media facilitates social interaction, although some instructors consider their educational potential to be low. Students create interest and research topic

communities, exchange information, communicate with experts if necessary, and interact with instructors. Social media can connect resources and systems, provide recommendations for further reading and information search based on the latest queries and previous research by students, and provide access to current knowledge and expertise.

5. Learning management systems (LMS) help teachers manage and organize learning content, track student progress, and provide feedback. LMS includes a range of tools, such as course materials, calendars, discussion forums, and assessments, that facilitate teaching and learning processes.
6. Cloud services are resources for storing and managing data on remote servers located on the Internet, rather than on a local server or personal computer. Cloud services are not only a resource for accessing information from anywhere and at any time, but also a tool that shapes the essence of personalized learning, demonstrating new ways of recording and reproducing information in any form. Many useful resources such as Google Apps, Gmail, Microsoft 365, LinkedIn, and YouTube are located on cloud services.

In our time, issues of developing open digital educational resources, filling and working with educational cloud services, including the creation of distance learning resource centers, remain relevant. The process of implementing the latest technologies in the educational process requires addressing such current issues as setting up and maintaining hardware and software, improving the digital competence skills of teachers, and complying with sanitary and hygiene standards during continuous equipment operation.

An important prerequisite for the effective use of digital resources is the issue of evaluating the quality of resources and teaching students how to do this for further independent work. Developing an effective tool is challenging as it needs to combine the evaluation of pedagogical components and graphic design. We propose using a tool for assessing digital resources developed by El Mhouti (El Mhouti, Abderrahim & Nasseh, 2013) as a basis. This tool combines four key components of digital learning resources: academic content, pedagogical, didactic, and technological components. In the context of developing skills for personalized autonomous learning, this tool has been adapted and three components have been added to some of the components: interactivity, or quality feedback (to the pedagogical component), orientation towards developing self-learning skills (to the didactic component), and structural-functional interdisciplinary coherence of educational material (to the academic component). In

our opinion, such classification can significantly improve the quality assessment of digital educational resources. Let's look more closely at the content of these components.

The quality aspect of academic content involves evaluating the quality of information presented in the digital learning resource. The following criteria are known for determining the quality of academic content:

-the criterion of reliability, accuracy, reliability, and safety of information messages;

-the criterion of relevance, usefulness, and compliance with the interests, age, and needs of the user;

-structural-functional interdisciplinary coherence of educational material, which contributes to the unification of knowledge and correlates with the principle of authenticity, as students in real life have to solve interdisciplinary problems that are not limited to communication issues.

The process of harmonious interpenetration of educational components expands the scope of general and professional competencies. Training in solving interdisciplinary tasks activates scientific and cognitive activity, promotes further scientific activity, which ensures continuity and sustainability of the results of individualized learning.

The assessment of the pedagogical component is of paramount importance. To promote individual independent learning and the possibility for students to construct their own knowledge, digital resources should take into account the principles of differentiation, systematicness, activity, and continuity. Evaluating the educational resource involves studying its purpose, tasks, teaching strategies, and assessment provisions. The main criteria are:

-the quality of text formulation or tasks, which determines the degree of understanding of the content by students. The degree of understanding is influenced by simplification or adaptation of content or language level, explanations of abbreviations, the presence of a dictionary, a brief description of the resource, the use of visual information representation (graphs, diagrams, drawings), as images, layouts, presentations, pace, topics, proposed fonts, and design contribute to students' interest in the content of the resource;

-the quality of the resource structure: whether the structure of the digital educational resource corresponds to the expediency of its use in the pedagogical context due to the presence of such characteristics as organizational logic, simplicity

of orientation (for example, a summary, site plan), ease of navigation (back - forward, back to the homepage), and readability of pages;

-the quality of teaching strategies and forms of organization of learning, based on techniques, methods, approaches, and various educational models for differentiating learning styles. Teaching strategies should be based on active learning approaches (constructivism, socio-constructivism) for building meaningful and motivating situations to actively engage in learning.

The main subordinate criteria for evaluating pedagogical strategies are as follows: clearly defined learning objectives and resource goals; degree of differentiation of strategies and tasks according to learning styles, flexible in application (for example, encouraging teacher intervention, providing opportunities for cooperative, problem-based learning, etc.), materials and proposed tasks encourage the use of diverse learning styles and strategies (such as oral, written, multisensory opportunities for accessing additional information or material); the resource promotes active student engagement through the option of polling, which should encourage reflection; the resource encourages student creativity through the development of unique interpretations or solutions; the resource may encourage group interaction; the resource promotes the development of critical thinking, research skills, problem-solving, group decision-making, etc.

The next criterion is the didactic aspect of quality, which focuses on evaluating the role of educational activity, content, and epistemology. The following key criteria are identified for evaluating the quality of the didactic aspect:

- authenticity of educational activity: tasks should reflect real-life or professional problems that a student may face outside the classroom;

- content of the learning instrument: consideration of the reality, relevance, and accuracy of the learning resource, correspondence of the content to the digital learning resource, the goal and the target audience;

-focus on developing self-learning skills, which involves tasks with elements of planning, developing evaluation criteria, and analyzing previous mistakes.

The last criterion determines the technical quality of the digital learning resource. Indeed, it is unacceptable for the user to be unable to achieve learning results due to technical issues. As in the case of learning criteria, compliance with technical requirements and recommendations regarding the field of use and target audience is important. Technical quality is assessed according to the following criteria:

- the design and organization of the visual product should promote proper use

of colors, interactivity, graphic quality, and pleasant aesthetics for selected images and illustrations. The visual sequence and sounds presented in digital learning resources, particularly those related to information design, affect the aesthetic and pedagogical impact of the resource. When designing presentations, developers should consider the principles and theories of cognitive load, multimedia learning, and information visualization;

- a clear interface to simplify navigation. When manipulating the resource, the user should be able to find a plan, index, or detailed table of contents, and the proposed options should be clear and sequential;
- technological innovation. Multimedia methods are aimed at combining and using the possibilities of new technologies in education to improve the quality of knowledge transfer and assimilation.

If teachers make all decisions regarding the conditions of use of a specific digital resource, students do not have the opportunity to become independent. However, having too much freedom of choice, students become distracted and cannot focus on one goal and choose the most useful resource. Providing options is one way to help them learn how to navigate and evaluate resources. In addition, variability ensures individualization of learning. Students mainly use resources that teachers demonstrated in the classroom. We propose the following steps:

1. Demonstrate the digital tool and practice its use during classroom sessions. Offer support and provide suggestions to help students get used to using digital resources in the language learning process;
2. Hold discussions and discussions on digital educational technologies, during which students are provided with answers to typical questions:
   - is the digital tool free to use?
   - do I need to register and provide an email address?
   - is the material I create saved in open access?
   - can the tool be used on a computer / Android device / iOS device?
   - how will it help me improve my English?
3. Offer students to find information about how to use the resource on the Internet themselves. The teacher can suggest where to look for information or check it, but the search process should be carried out independently by the students;
4. Conduct reflective discussions on the experience of working with resources, during which students exchange thoughts, links, and experiences, analyze advantages and limitations.

Available internet tools such as bubbl.us, Mindmeister, Mind42, and Popplet allow for structuring one's ideas, while social bookmarking sites like del.ico.us and Symbaloo are used for saving and managing online resources. The use of these tools allows for easy archiving, searching for ideas and resources, and building strategies for further learning and searching. Such an approach not only promotes individualization and independence but also develops students' creative abilities. It also corresponds to the psychological and personal characteristics of students: introverts prefer creating animated figures, while extroverts will create videos.

If instructors strive to play an active role in supporting student self-management and monitoring, the use of web tools becomes more critical. Howland et al. (2012) emphasize that digital resources serve as cognitive tools that can help students articulate and demonstrate their internal cognitive processes. Digital technologies better support learning when students are given opportunities to learn through tools as a means, rather than perceive the tool as a source of information. To keep an online journal, we recommend resources such as Penzu, Journalate or Diaro. They allow you to sort entries into folders, mark them with keywords, search and synchronize content on mobile devices and the internet. Since most of us use smartphones with built-in audio and video recording capabilities, making a short recording or video can be just as quick as typing. Most of these resources allow you to add photos, and some allow you to attach files. We find blogging platforms like WordPress, LiveJournal and Blogger interesting for work, where you can also add images, audio or video to your blog. These tools offer ready-made templates for students to create their own internet space or publications. Another feature of blogs is that they archive posts chronologically and facilitate the assignment of tags to blogs. By using blogs, students can review their reflections on learning over a period of time and organize their placement under different tags for analysis of various categories of publications. Blogs contribute to the social construction of knowledge in the community by allowing teachers and students to post comments on each blog post. Another feature of blogs is that they allow students to articulate their knowledge in different media formats, such as drawings, graphs, tables, text, and audio. In recent years, audio blogs (such as PodBean) have allowed users to use voice recordings as an expression medium instead of text. Teachers engage students in reflection by analyzing their blog posts and comments to determine what they have learned and how it can be related to their

Creating electronic portfolios is another means that students can use for reflective thinking. In the context of individualized self-directed learning, e-portfolios are used

for storing and organizing the results and evidence of one's learning in digital format. Electronic portfolios can be used to demonstrate students' knowledge on specific topics or completed projects. To create an electronic portfolio, students need to collect relevant evidence and organize them in a way that reflects their learning process. Developing a reliable e-portfolio requires skills in reflection and synthesis of knowledge and skills. This goes beyond simply writing a resume about learning experiences. Digital platform tools such as ePortfolio.org provide students with opportunities to create e-portfolios.

Reflective practice in higher education is not a new idea, as most professional fields encourage reflective sessions and it should become a necessary skill for students to develop within their digital capabilities. In order to reflect on learning outcomes, we propose using resources such as Kahoot, Socrative or Anketa Everywhere for questionnaires. This is important as not all students may be able to adequately evaluate the quality of their work. The teacher proposes questions for answers, and students respond using the specified resources.

In addition to surveys, we recommend using collaboration platforms such as Padlet or Todays Meet to share thoughts on activity results, experience with resources, and provide advice to other students.

Online surveys and quizzes can help students identify gaps in their learning and plan further actions. G-Suite tools such as Google Drive and Google Classroom allow for creating shared documents with peer review, where students can track feedback history and corrections. These features can be used to help students identify changes within iterations, understand their personal learning gaps, and set goals for improvement. Digital tools such as Microsoft Project provide students with a simple interface for planning, and Gantt charts, which can be created in Microsoft Excel or Google Sheets, are another tool for tracking project progress and monitoring or improving plans. An additional advantage is the chat, which simplifies social interaction between teachers, students, and their peers, which can also be used as a means of self-management and monitoring student progress. Social learning networks such as Edmodo or Schoology can be used to support these processes, as these systems allow teachers to create individual and shared spaces. Teachers can use individual spaces for students to post their work, comment or use synchronous chat for discussions.

2.3. Recommendations for implementing the process of individualized autonomous foreign language learning with the support of digital educational technologies

The key characteristics of modern civilization transformations are innovation, dynamic changes, and an expanded communicative environment. New times require a correlation of the system of values with the existing conditions of existence in the information society and the real needs of modern youth. Acquired knowledge and skills quickly lose their relevance, and there is a need to master new knowledge. Therefore, the goal of modern higher education institutions is to develop students' lifelong learning skills in order to always be competitive. In order to form a self-sufficient personality capable of navigating the diversity of communications, it is necessary to change the way students are involved in the learning process, creating new motivating incentives and equal relationships between the subjects of the educational process, which is possible by implementing the principles of individualized learning. Thus, educators contribute to the development of humanistic and tolerant pedagogy, which is needed not only for the democratization of the educational space but also for society as a whole.

It is appropriate to formulate practical recommendations for teachers on the implementation of autonomous individualization of foreign language learning for students of engineering specialties and to provide explanations of the algorithm for assessing the competence of individualized foreign language improvement. We propose six steps for the effective and logical implementation of the aforementioned process.

Step 1 - The process begins with identifying the students' previous language learning experiences and their beliefs regarding individualized language learning. Students are asked to briefly describe their understanding of individualized language learning and their experience, analyzing their successes, mistakes, advantages, and disadvantages. Students reflect on positive and effective learning situations or tasks and/or strategies they have used.

Step 2 - Conducting a diagnostic test to determine the level of language proficiency and the problems that hinder successful task performance. The diagnostic test is based on the Common European Framework of Reference for Languages (CEFR) for determining levels of proficiency in a foreign language. It consists of four parts to determine proficiency levels in speaking, reading, listening, and writing. The

number and level of tasks gradually become more challenging with the completion of each subsequent task. We recommend creating a "My Plans and Desires" action plan in which students develop their own learning trajectory and set goals. In the context of formal professional education, it is desirable for the goals to meet the requirements of professional educational standards.

Step 3: To effectively analyze the previous experience, the next step we suggest is to conduct a skills audit, which will identify the skills that students already have and those that may be needed to complete the task. Reflecting on their previous learning, its effectiveness, strengths and weaknesses, students practice the skill of critical reflection. The skills audit is conducted by students marking one of three responses according to the skill: "I can", "I want to learn this" or "it's not important to me." The questionnaire consists of two blocks, "personal autonomy" and "educational autonomy." After analyzing the results of the diagnostic test, students choose one or two priorities to work on, and this is how the decision-making process takes place, and they create an action plan based on the teaching materials provided by the teacher for individualized learning. Students can discuss the results of the audit with the teacher, and the teacher can use the results of the audit as a basis for classroom learning activities. Also, at this stage, it is appropriate to determine the individual cognitive style for effective selection of strategies and tools.

Step 4: Developing criteria and descriptors for self-assessment of results. According to their priorities, needs, goals, or interests, students choose skills to improve or problems to solve. Then, together with the teacher, they discuss the criteria for assessing task performance. General criteria for assessing language skills are provided in descriptors for language levels developed by the European Language Commission. In addition, if students work with a learning resource or distance course on an online platform, the criteria for successful completion are already included in the online system. The teacher only explains the specifics of the criteria and what to pay special attention to. This work algorithm is effective at the initial stages of individual learning. At more advanced levels and in cases where the task involves a project, the teacher, together with the students, creates rubrics for evaluation.

Step 5. Individualized training of skills during direct contact with the teacher and individual self-study of students on previously identified problems. Some individualized self-study skills can be trained in the classroom: finding information, critically analyzing the quality of information and its sources, analyzing digital educational resources according to the needs and abilities of students, information

processing, creating a plan for completing tasks, developing peer assessment skills. These skills can be trained during group project research (completing a web quest, creating a presentation or interactive poster, recording audio or video messages, creating digital narratives, etc.). During this stage, students fill out a "reflective journal" in which they note the initial problems and the teacher's advice regarding their solution, list and evaluate the effectiveness of initial strategies and useful digital educational resources used by students during individual work.

Step 6. Filling out a self-assessment sheet (reflective map) after completing a certain task. Self-assessment is later discussed with the teacher. This discussion is a pedagogical dialogue that allows both the teacher and the student to compare their points of view regarding the level of language competencies and the learning process. This dialogue should be conducted in accordance with the basic rules of counseling: the teacher actively listens to the student, asks questions for clarification, asks for details, reformulates statements, summarizes, helps focus on priorities, and asks about next steps. This form of work is the most important element of assessment, as self-assessment, as a process of learning as a whole and the quality of language competencies, is a very complex cognitive process. Students often try to determine the criteria for evaluating their competencies, but without proper training, they are inclined to either overestimate or underestimate themselves, which leads to demotivation. Previously developed criteria indicate the direction of assessment and provide the opportunity to compare one's internal perspective with the external perspective. Students typically value the fact that they can engage in self-reflection and be involved in the assessment process. This way, they gain new insights into their competencies, learning principles, and make informed decisions about their future learning.

Summarizing the above conceptual ideas, we have come to a theoretically justified conclusion that improving the quality of professional education requires further improvement of the organization of autonomous individualized learning processes based on personality-oriented and digital humanistic pedagogy, and involves the use of digital educational technologies, interactive teaching methods, multimedia tools, and the implementation of electronic learning tools. Blended learning forms, complementing traditional ones, contribute to the realization of individual creative potential and professional self-realization.

Conclusions

Digital educational technologies are a field of research that studies the processes of analysis, design, development, implementation, and evaluation of learning environments and educational materials with the aim of improving teaching and learning. It is important to remember that the goal of educational technologies is to enhance education.

In the higher education system, teachers must make informed decisions regarding the choice of digital educational technologies and resources for transforming the learning process. When making decisions, it is necessary to take into account the needs and abilities of all subjects of educational activity, as well as the didactic potential of the resource and its multifunctionality. This is a difficult task, but factors such as the digital curriculum and content of the resource, evaluation requirements, controllability parameters, security functions, and technology functionality are key to choosing the right educational technology. First, it is necessary to determine the goals and needs, and then use all our knowledge, including technologies, to create the most effective learning environment for students. Educational technologies also stimulate the process of solving problems related to motivation to learn, the development of skills for individualized autonomous learning, critical and creative thinking. During the process of integrating digital educational technologies, teachers should be aware of three available types of technological convergence: additive, integrated, and independent. It is important to understand which type is best to use, why, and how to implement this method of integration.

Through research, we have concluded that the digital educational environment represents a complex set of conditions and opportunities for autonomous, individualized learning. The sense of change in the organization of the educational process in the context of digitalization lies in increasing the didactic effectiveness of integrating digital technologies into the learning process. This can be achieved through the implementation of individualized learning - transforming a unified and general educational process for all into a set of individual educational paths created taking into account students' personal educational needs and their individual psychological and pedagogical characteristics.

KAPITEL 3 / CHAPTER 3 [3]
THE POWER OF GAMES: WHAT, WHY AND HOW TO EMPLOY IT IN EDUCATION

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Introduction

Games were exploited in education a long time ago, their ability to capture and hold attention of players were known to ancient civilizations. If those principles according to which game players develop their skills and enrich their experiences, were applied in real life, it would be possible to improve educational systems, increase productivity at work, create collaborative communities, and solve many other problems of human beings at a global scale. In order to achieve this goal, it is necessary to destroy the stereotypes about games and create a partnership of the main actors from various spheres of life (McGonigal, 2011, p.14). Combining games with learning, applying rewarding game elements to the educational content sparkles learners' interest, stirrs curiousity and competitive spirit, opening endless possibilities of learning in various spheres of human life (Arnold, 2014; Giang, 2013).

Innovation and technology of the 21-st century opened new perspectives. Human's basic needs and desires are the same, but the ways of motivating digital learners are drastically different from those which were effective before (Prensky, 2001; Qian & Clark, 2016). Ubiquity of technological advances, digital devices, new applications has given rise to the search for other approaches in education to meet learners' needs. Thus, game-based teaching methods gain theoretical foundations and prove to be effective for diverse learners in various educational environments. What makes games in education powerful is fusion between engaging students and technological opportunities, which open many ways of delivering and processing information efficiently. Immediate feedback, cost-effectiveness, students' autonomy lead to changing traditional teacher-centered classrooms into learner centered, turning teachers into facilitators, supervisors and designers (Gamification and the Future of Education, 2016, p.42). In addition, games enable access to education, a fundamental human right, especially in cases when traditional formal access is denied or not possible. Digital game-based learning ensures not just access but access and learning for those underprivileged students who otherwise may drop out, fail exams or not show

[3]**Authors:** *Chugai Oksana*
84208 printed signs - 2.1 author's sheets

progress during their study (Design and Approach to Digital Game-Based Learning, 2018).

However, it would be erroneous to consider games "silver bullets" which will automatically change education systems for better. Mechanical duplication of successful gamified practices may fail, stipulating learners' progress and even causing harm (Sheldon, 2020.) Therefore, gamification should be present at all the stages of teacher training, professional development programs, curriculum design in order to meet students' social needs in new changeable environments (Gamification and the Future of Education, 2016, p.42). It is possible to describe "digital divide" as reluctance of pre-service and in-service teachers to use digital games in their classes which is based on stereotypes (Blume, 2019, p.20). Destroying those stereotypical attitudes, applying the principles of game mechanics and game dynamics equips educators with the tools, which make students excited about their studies. Designing lessons like games engages students through unleashing their creative potential and empowering them. Presumably, getting started with using game elements may eventually lead to creation of multiplayer classrooms which accommodate a wide variety of learners' needs (Sheldon, 2020.)

2.1. Defining game as a system

Games belong to people like legend or myths. It is impossible to claim where exactly a certain game originated, as similar games were played in different places at different times. African and Balkan games were much more popular in the United Stated and Canada by the year 2000, because the games' countries of origin were overwhelmed by famine and war (Duckert, 1993, p.15). The evidence about games in ancient times is provided by archaeology. Various artifacts recovered from cemeteries, cathedrals and other places, graphic information like murals and paintings, prove the popularity of games. In addition, they provide details on what kind of games existed then and how they were played. There are other sources of information related to games: ancient writers mentioned the names of the games in their literary works, antigambling laws were imposed in Rome over 2000 year ago, and the ancient Chinese manuscripts presented controversial issues related to gambling of the workers, to name just a few. In fact, books and folklore sources mentioning playing games are abound (Avedon & Sutton-Smith, 1971, p.21–23).

There have been claims that traditional or so-called classic games are dying out. Moreover, that because of video and computer games, organized sport and television the ability of young people to play old school games is lost. However, it is far from the truth, rather than discarding classic games, children preserve them and adapt continually. Running and chasing games like competitive ball games, cops and robbers have been popular despite the fact that they go back to the ancient time, when humans had to hunt and battle in order to survive. Traditional card games are also adapted to the needs of digital natives, when players create their own cards, rules, and objects depending on situations, play online or offline, individually or in teams (Duckert, 1993, p.18).

There are many approaches to describing what a game is, it may be: a form of play, amusement, recreation, sport involving specific rules, sometimes using special equipment, requiring skill, knowledge and stamina; a condition of a leg when someone limps; wild animals, birds or fish hunted for sport or food. The explanations of etymologists relate the usage of the same word to describe behavior of humans as well as animals, which after many transformations resulted in the word "game" referring to a human activity, a twisted leg and a non-domestic animal (Avedon & Sutton-Smith, 1971, p.2–3).

It is important to distinguish between the notions of "play" and "game". While play is considered to be a type of behavior, therefore unique and individual, game is a structured activity which is possible to recreate by others in various environments. Play is seen as an exercise of voluntary control systems, which is open-ended regarding outcomes. In contrast, game is defined as an exercise of voluntary control systems in which the participant's control over procedures target a given goal (Avedon & Sutton-Smith, 1971, p.5–7, p.236–377). Some researchers use the terms "play" and "game" interchangibly, addressing humans as players first of all. Thus, Huizinga (2004, p.446), one of the most prominent researchers in the area of entertainment, disembarks the myths of play and games as non-significant and superficious, stating that play was invented earlier than culture (Huizinga, J. (1955). Another term "meaningful play" is also widely used, as three terms "play", "game" and "meaning" are closely connected (Salen & Zimmerman, 2003, p.47). In fact, play in the context of a game emerges from interactions between the players, so that is what makes it meaningful. The essence of interactions is making choices, which means that every action players take should have a result (Salen & Zimmerman, 2003, p.49). There are two approaches to define meaningful play: descriptive and evaluative. The descriptive approach focuses on the

relationship between players' actions and results, which exist in a carefully designed system of a game. The evaluative approach states that actions and results should be discernable (predictable) and integrated (interconnected) into the whole system of a game (Salen & Zimmerman, 2003, p.52). In fact, an action is discernable when players know what the result would be. Otherwise, actions taken by players, would be random and chaotic. The relationship between an action and its results is integrated if any move has not only an immediate outcome, but it changes the whole game and its overarching goals. Therefore, relationships between actions and results reveal the meaning of a game in general. Successful game design is based on meaningful play, but, at the same time it is important for single actions and results to be discernable and integrated into the whole game (Salen & Zimmerman, 2003, p.50–51).

The notions of game and play are defined using two approaches, typological and conceptual. Typological, which considers the forms of game and play in real life, considers play as a broad concept, whilst game as narrow. Indeed, comparing playful activities people are engaged on a daily basis, like playing in a sandpit or roundabout, with others, like backgammon, cards or Scrabble, only some may be considered as games. Play is not as formalized as game, the rules are less strict, there may be no winners, as far as players enjoy the process. However, conceptual approach considers play as being a fundamental, but still a component of game (Salen & Zimmerman, 2003, p.84).

Comparison of the definitions made by some prominent researchers indicates disagreement on game elements despite the fact that ten out of fifteen elements are chosen by more than one author. In particular, seven out of eight researchers agree on such game elements as rules, which limit players' actions, and five on the fact that games are goal-oriented. Three authors believe that games involve decision-making, various events or activities, some kind of a conflict, they also state that games are not connected to real life and not obligatory to play. Two definitions of games contain such elements as imaginary aspects, systems of resources, and no profit. Just one author thinks that games are not serious, definite or efficient, they constitute a form of art and create social groups (Salen & Zimmerman, 2003, p.91–92). Researches highlight the elements which are present in the majority of games: purpose, procedure, rules, number of players and their roles, patterns of interaction, results or rewards (Avedon & Sutton-Smith, 1971, p.422). Still, it is possible to focus on four basic game elements like objects, attributes, internal relationship and environment. Objects may be tangible or not, attributes are qualities of the system and its objects, internal and external contexts

the system belongs to. There are three levels of a game as a system: formal, experiential, and cultural, which are interconnected and should be taken into account when designing a game (Salen & Zimmerman, 2003, p.67–68).

One of the key characteristics of a game is interactivity, as a player makes choices taking explicit actions which involve a game system, another person or people, an object, or an idea. At a formal level a player interacts with objects, at the social level with other people, and the cultural, which includes other contexts beyond the play. Interaction between people means that they take turns to initiate reciprocal actions within a game system. Evidently participants should actively listen, think, and then react by saying or doing something in response, therefore, this process is cyclic and may be repeated many times (Salen & Zimmerman, 2003, p.69–70).

Game design is a process of creating a particular context for the participants to have meaningful interaction, which may be done by a single person or a team of people. In some cases it is not possible to clearly indicate the designer as games may originate from traditional folk or fan culture a long time ago. "The context" is the environment presented by various location, items, narratives and modes of behavior (Salen & Zimmerman, 2003, p.54). The concept of structure or rules is basic in understanding the context, as it provides understanding of various combinations and interactions between signs and game elements (Salen & Zimmerman, 2003, p.60). "The participants" of a game are players who interact with each other or other elements of a game within various contexts. "Meaning" is closely connected with the players' actions and results throughout their play. The study of the processes related to making meaning is called semiotics, for which "sign" is one of the key concepts (Salen & Zimmerman, 2003, p.55–56). According to Peirce (1958), the term "sign" is something, which means something else for somebody in some respect or capacity. The concept of a sign suggests its basic characteristics: representation of something else than itself; its interpretation results in acquiring some meaning; its interpretation, and, therefore, meaning are strongly influenced by context (Pierce, 1958, p.37). These characteristics are crucial for understanding of games, as the meaning of signs depends on their interpretation, and the outer environment which is created by people. Thus, a sign has its value only in case the participants of a game agree on its meaning (Pierce, 1958, p.59).

There are numerous possible ways of classifying games. According to the usage, games are classified into six main groups:

1) games used for recreational purposes (gambling games, board and table games,

sports);

2) military usages (games in military science);

3) business and industrial games (games in business and industry);

4) games in education (games in teaching different subjects);

5) games in diagnostic and treatment procedures (games in psychiatry, physiatry, general medicine, etc.);

6) games in social science (games in political science, economics and sociology) (Avedon & Sutton-Smith, 1971, p.237–376).

Another classification consisted of seven genres was approved by academicians who implement gamification in higher education:

1) action games are video games which require response;

2) adventure games create obstacles for a player to overcome;

3) fighting games suggest winning or losing battles;

4) role-playing games when players try different identities;

5) simulations look like real world where players complete various tasks;

6) sports games remind of real kinds of sports;

7) strategy games require players to survive in fictional settings (Gros, 2007).

Games are classified according to their dimensions, which are preconditions of players' behavior influencing the process and results. Therefore, by selecting suitable dimensions it is possible to make a gamified experience more controlled, enjoyable and educational. There are some dimensions typical for the most widespread games:

1) body contact (pushing, touching, using props, competitive or not);

2) bodily activity (static vs. mobile, rigid vs. fluid, vocal expression);

3) skill requirements (imagination, manipulation, language, reaction time);

4) chance determination of success (luck games using dice, spinners);

5) competition (winning or losing, goal or opponent directed, team or individual);

6) use of space (amount and space usage);

7) time considerations (natural termination, well closured steps);

8) prop usage (playing, obstacle and goal props);

9) role-taking (function differentiation, control position, imagination roles);

10) rule complexity (progress making, special rules);

11) interdependence of players (Avedon & Sutton-Smith, 1971, p.408).

Summing up, a game may be defined as a system in which players engage in an artificial conflict managed by rules, the result of which is quantifiable. Game design is the process of creating a game, from which meaningful play emerges when

encountered by a player (Salen & Zimmerman, 2003, p.93). Gamification is understood as using the mechanics of games in various spheres of human life to make learning more engaging. However, one should remember that any definitions are open for interpretations and debates (Apostol et al., 2013).

2.2. The driving force: why to play games

Compared to games, real life does not always motivate people, provide pleasures and challenges, develop close connections with others or bring ultimate happiness. The word "phenomenon" is used to describe the popularity of games, which is indicated by hundreds of millions who spend more and more time playing games. While some may devote to games just one or two hours per day, for "active players" this number is as much as thirteen hours per day. Remarkably, spending at least twenty-two hours a week equals a part-time job (McGonigal, 2011, p.4). Considering all the varieties of games, it is possible to claim that most people enjoy playing at least few kinds of games (Hägglund, 2012, p.3).On the other hand, there are non-gamers, who are sure that playing games is a waste of time and parents, educators and politicians call for action in order to stop the expansion of this addiction. However, playing games belongs to basic human needs and desires like surviving, having a family, being happy, reaching the goals, which has remained the same since the ancient times (McGonigal, 2011, p.5–6).

There have been many attempts to define human motivation, when Greek philosophers considered motives to be related to physical needs like eating or drinking, and the needs of human mind like curiosity or partnership. In the 20th century human motives were considered to belong to ether those looking for pleasure or avoiding pain. There is another division of motives, one category called drives associated with extrinsic motivation, examples of which are hunger, thirst and pain avoidance, while another category called intrinsic motivation (IM), examples of which are curiosity, autonomy and play (Reiss, 2004). Intrinsic motivation, self-regulation and well-being are considered to be in correlation with three main human needs: competence, autonomy and relatedness. In case of satisfaction of these needs intrinsic motivation, self-regulation and well-being are enhanced, which is significant for many spheres of human life, especially health, education and work (Ryan & Deci, 2000). However, proponents of multifaceted theories argue that human nature is too complicated to fit

the prescribed number of categories. Indeed, those individuals, who are motivated by the need to play, may lack motivation by curiosity or autonomy. Therefore, the hypothesis that play, curiosity and autonomy constitute a desire for competence, is undermined. Highly motivational are also values like social contacts, revenge, social status, to name just a few (Reiss, 2004).

According to McGonigal (2011), all human beings are divided into two categories: gamers now and gamers in the future (p.12). Therefore, it is necessary to get understanding of how games work, influence societies and lives of people, why so many people are addicted to them, what to do in order to use all the opportunities provided by games. Those who develop games, know how to motivate people to work hard and reward their efforts, how to build cooperative and collaborative networks, how to encourage players to challenge their abilities on a larger scale. Obviously, game design is not just a clever trick, but the twenty-first-century way of thinking which may change the world for better (McGonigal, 2011, p.12–13).

Critics of games claim that the reason of their popularity is that people escape from reality. However, there are games, which have strong connections with real life and may be called antiescapist games (McGonigal, 2011, p.125). Alternate reality games (ARC) create a special environment for players who, in order to win a game, solve real life problems, work with enthusiasm, built strong relationship with other people and become more confident in their success. **"**Chore Wars", which is another version of "World of Warcraft", involves family members, groupmates, neigbours or colleagues, who compete with each other and, as a result, do their house chores with enthusiasm and inspiration. Indeed, everyday routine duties are not obligatory anymore, because they are adventures the players are looking forward to. Thus, the players become heroes leveling up their avatars' power, being satisfied by reaching the aims, getting rewards and having real benefits from their virtual gold (McGonigal, 2011, p. 120–121).

The most powerful features of games appealing for players are called "four freedoms of play". The freedom to experiment is related to many opportunities a player has to choose the best strategy for completion of the task. The freedom to choose identity is not only about exploring and observing the environment, but about trying various identities and patterns of behavior for a player. The freedom of effort suggests variations between intense and relaxing modes of play. The freedom of interpretation is related to unique experiences of players because of their individual, social and cultural characteristics (Klopfer et al., 2009, p.4–5). Having the ability to make

personal choices, try different identities, alterate their playing mode, draw their own conclusions makes players think that their actions and decisions matter, which is empowering and engaging.

Game mechanics, game dynamics and emotions are driving forces which motivate behaviour and satisfy human needs. Game mechanics are systems regulated by rules following which players interact and improve their practice receiving immediate feedback. By combining game mechanics like building blocks it is possible to create various ways to motivate players. Movement is an example of game mechanics, when either players change their location, or cause something else to move. Resource management is involved in many games, when players manipulate with tokens, ammunition, money, eventually changing the results of the game. Spying is a part of many games, when players should collect information from conversations of others, break into someone's homes, or cheat. However, situations which tempt players into rescue operations, are also common (Hägglund, 2012, p.3–4).

Game mechanics works better combined with game dynamics, which ensures that players act in a predicted way. In addition, it provides equal opportunities for anyone to succeed (Hägglund, 2012, p.4). Four player personality types, often represented as Clubs (Killers), Diamonds (Achievers), Hearts (Socializers), and Spades (Explorers), ensure that balance. As defined by Bartle (1996), their behaviour is determined by their distingushed features. Apparently, killers look for fighting, achievers collect rewards, socializers rely on communication with other players, explorers descover something new and share their findings with others. Killers act on other players demonstrating their strength over other players, they use their accumulated knowledge to practice their fighting skills and show their superiority. Achievers focus on acting of the world, they take pride in their status in the game and in the time needed to achieve it, whilst socialisers look for interaction with other players, treating the world of game as a setting for communicative activities between various characters existing there. Their primary goal is to learn more about others and introduce themselves. Explorers look for interactions with the world, they appreciate something new they learn as the result of that communication (Bartle, 1996).

It is possible to sustain constant interest to a game by balancing four dimensions: players vs world, and acting vs interacting. Thus, in order to focus on players, connectivity between the rooms, the number of facilities for communication, simultaneous players should be increased. On the contrary, to emphasise world, building facilities should be easy and intuitive, and building priviliges should be

encouraged, keeping just basic communication facilities (Bartle, 1996). Finally, emotions of players determine direction and outcomes of their actions, creating atmosphere of competition and cooperation. The concept of the "flow" reflects the emotional state when a player is totally focused on the task and cannot stop moving towards the goal enjoying this process. (Csikszentmihályi, 2005). Needless to say that driving forces of a game are interconnected and balanced (Figure 1)

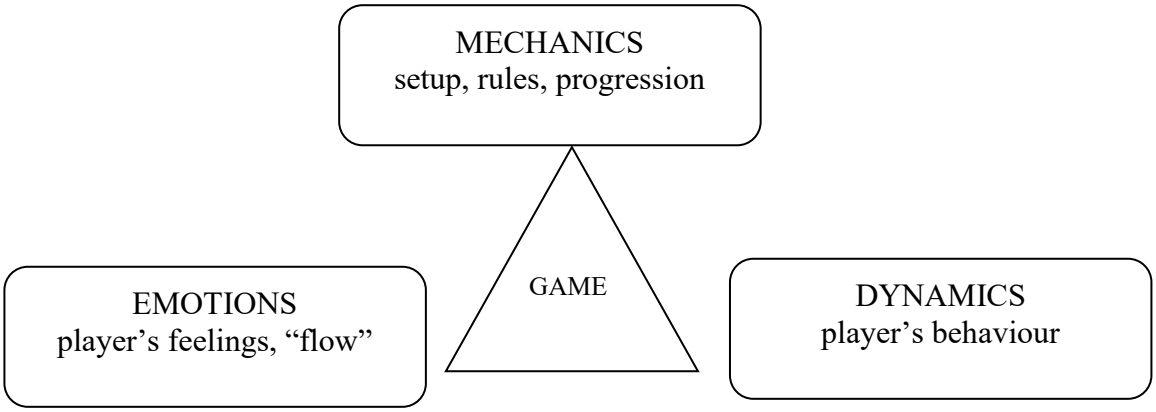

Figure 1. Driving forces of a game

(Robson et al., 2015, p.416).

Mechanics represents goals, rules, context, which engage players. Dynamics is related to players' behavior when they are on the way of reaching the goals of the game. Emotions represent players' feelings and reactions during a game, which contribute to engagement and learning (Robson et al., 2015, p.416). Therefore, but keeping these forces interconnected and balanced, it is possible to create an engaging gamified environment in any sphere of human life.

2.3. Using games in education

Playing games has been considered a form of learning since ancient times, as in order to play a game and have enjoyable experience children have to follow the rules, otherwise, it does not work (Avedon & Sutton-Smith, 1971, p.322). The researchers define the concepts of games and gamification, exemplify both and highlight their importance, they also investigate the problem of applying gamification to education (Apostol et al., 2013; Barata et al., 2013; Dichev & Dicheva, 2017; Ilhan, 2021).

Enjoyment is highlighted as the most prominent feature of using games in education, regardless of the amount of the material which may be the same or even less than usually. Two aims are reached by using games at the lesson: motivating students and preventing management problems, which are especially acute in high school and at college levels (Avedon & Sutton-Smith, 1971, p.315).

Positive impact of gamification on academic performance is proved by many researchers who, first of all, highlight boosting students' motivation, at the same time describing the difficulties of planning and implementing the ideas in practice (Dominquez et al., 2013; Sera & Wheeler, 2017; Dichev & Dicheva, 2017; Turan & Goktas, 2015; Cameron et al., 2019). Using games is not limited by age, it is an inseparable part of tertiary education in general, and professional training, corporate education in particular (Lytovchenko, 2016). The research in the 1960s mainly focused of four hypotheses: students show more enthusiasm and interest by participating in gamified activities, they learn more and retain information longer than when involved in traditional activities; and, finally, their attitudes change drastically. According to Avedon (1971), the first hypothesis was accepted at that time, the one about student's genuine interest in games compared with traditional activities in class. The researcher came to the conclusion that games in simulations are useful tools for getting and keeping students interested in the activities at lesson (Avedon & Sutton-Smith, 1971, p.321). One of the studies of gamified learning, which involved 13,000 students and more than 900 teachers from fifteen countries, indicated success rate 71% of students obtained A, B or C, while game-based approach success rate reached 93% of students received an A, without a B, C, or D. Moreover, students completed twice as much of the material in a shorter period of time (Sheldon, 2020). The main idea of using games in education is that the subject matter, be it for a history or language lesson, is offered in the form of a game. There is a notion of a "good" game in education as the one which helps the learner to learn. For example, at the beginning of a new academic year students play a game "Bingo" to learn each other's names, which has a practical value and creates a friendly atmosphere at the lesson (Avedon & Sutton-Smith, 1971, p.315).

Using games in education starts in nursery school, but with leaving primary and secondary school for higher education establishments, "games" may be referred to as "simulations", or these terms may be used separately, as "games and simulations" (Vlachopoulos & CMakri, 2017). Some educators claim that "simulations" in higher education reflect real life situations and drastically differ from "games". Anyway, expanding from business and industry to economics and political science, games have

become an integral part of university curricula. Thus, it is possible to talk about games with simulated environments, research and development of which is performed by sociologists, anthropologists, economists, and many other experts. These "good" games develop problem solving and decision-making skills in a wide range of contexts such as business management, economics, international relations, political science, to name just a few (Avedon & Sutton-Smith, 1971, p.319–320).

The unique feature of games as simulations is that players learn by going through some experiences of witnessing the consequences of their actions, which is impossible in case of using traditional teaching methods. Having the hands-on experience allows the players to learn decision-making and problem-solving techniques in a contemporary society. Using games in education promotes development of communication and cooperative skills, changes players' attitudes towards learning, creating a friendly atmosphere by lowering affective filter, removing fears of doing something wrong (Avedon & Sutton-Smith, 1971, p.320).

However, the assumption that any game-based learning environment fosters students' problem-solving skills is erroneous. Motivation and engagement are necessary preconditions for reaching the goals of an educational game. According to the results of the research, problem-solving competence may be enhanced in case of creating an environment which provides attainable challenges, autonomy for students to take decisions, and tasks which require solving problems (Eseryel et.al., 2014, p.51). Creating educational games, which are as attractive as commercial games, collecting the data of students' attitudes and emotions, assessing their cognitive, decision-making and other self-regulation processes is extremely challenging (Eseryel, D. et.al., 2014, p.52).

Pedagogical potential of games is yet to be explored, considering their impact on students' lives. Application of games could be much more than just replacing a textbook by online flashcards, breaking away from the traditional approaches in education based on memorization. Instead, students could have their own educational paths in a maze of science and art by exploring, interacting, experimenting, sharing, creating, assisting others in achieving their goals. One scenario aimed at leveling up science and engineering education of high-school students used a curriculum consisted of electronic and physical games. The role of a teacher was to monitor activities of students, adapt the rules of the games to their needs, design contested spaces. Students worked in heterogeniuos groups named gaming communities, solving problems together and sharing what they learnt from their experience with others. Eventually,

students achieved such a level of autonomy that the interference of teachers was minimized, and using critical thinking, experimenting, learning on their own mistakes, students developed competencies which are needed in real life, far beyond gameplay (Squire & Jenkins, 2003). Using games in education, which fosters motivation and engagement, greatly influences students' problem-solving abilities and critical thinking, but it depends on design features of a game. Complexity of problem-solving tasks in a game should be combined with students' autonomy in order to reach their goals (Eseryel, 2014; Cicchino, 2015).

Considering the issue of using games in education, it is necessary to take into account gaming experience of schoolchildren and students. In fact, most of them are game players from an early age, therefore having access to online games and virtual reality their entire lives. Consequently, they have high expectations of active participation, immediate feedback and positive encouragement. However, in traditional classrooms they have to overcome obligatory obstacles and experience mostly negative feedback without an opportunity to have another try. The gap between real and virtual world is growing causing disillusions, apathy and discouragement (McGonigal, 2011, p.127). In order to sparkle students' interest to their subjects, more and more educators use or create their own games, combining game elements with the educational material. At the same time some researchers and educators claim that including games in traditional lessons is a positive improvement, but not significant enough. Thus, the first school "Quest to Learn", where all educational experiences were designed like games, was created in New York, serving as a model for other projects all around the world. Lessons turned out to be quests, home assignments looked like secret missions, and textbooks contained coded messages, which meant that completion of the tasks was a self-chosen goal had to be achieved in a highly competitive environment, better or quicker than others (McGonigal, 2011, p.128–129). Assessment policy allowed several attempts to complete a "mission" and level up, accumulating the desired number of points and getting positive encouragement. The focus shifted from grades to the process, motivating learners to strive for another educational experience. Each student who demonstrated a particular achievement became an expert and designed quests for others, generously sharing with them their intellectual superpowers like problem solving, strong collaboration and innovative thinking (McGonigal, 2011, p.130).

Games have three basic characteristics, which are widely exploited in education: rules, which guide a player's actions during the game, feedback systems, which insure interactivity, and clearly defined. Game elements, which are crucial for engaging

students to the extent that fosters effective learning, may be classified into three categories: mechanical, personal and emotional (Gamification and the Future of Education, 2016, p.4–5).

Mechanical elements include incremental progression, goals, onboarding and instant feedback (Figure 1). Incremental progression consists of presenting gradually increased challenges to players so that they are neither bored not overwhelmed by the problem. Challenges called missions, levels or quests are sub-goals on a way to the ultimate goal, and offer immediate rewards. Moving from one problem to another has a cumulative effect, and players gradually develop their skillsets. Rewards or badges visualize success and encourage players to achieve the ultimate goal. Onboarding aims at supporting players at the beginning of a game, providing instructions and guiding them through the first minutes to ease grasping the concept of a new game. Onboarding in education ensures engaging students in a new activity, and saves time spent on lengthy explanations of a teacher, which are time-consuming and too general. Instant feedback is insured by publicly displayed achievements so players can see the dynamics of their progress. Short feedback cycles let students know if they met expectations, what they should do to improve the situation until it is too late (Gamification and the Future of Education, 2016, p.6–7).

Personal elements comprise avatars, collective responsibility and leaderboards (Figure 1). Avatar is a visual representation of a player's identity which range from 3D models to symbols. Usernames, handles or tags allow players to try new identities in order to have another approach to solving problems, taking decisions in-game, communicating with other players (Gamification and the Future of Education, 2016, p.8). Collective responsibility is the basis of teamwork and cooperation. Playing individually, it is tempting to quit at any point of a game, but in case of multiplaying, teammates depend on each other and keep on playing because they do not want to disappoint others. This element has been widely used in education, when with social responsibility students' emotional investment, and, therefore, motivation, increases. Secondary schools in the XIX-century English-speaking world used "house" system, when individual inputs of students accumulated and their teams (houses) were awarded at the end of the year. By encouraging increased efforts, schools, which employed "house" system, demonstrated better results compared to those which did not (Gamification and the Future of Education, 2016, p.8). Ranking is common in competitions and games. Leaderboards visualize the progress of players by means of points-based system according to players' abilities or achievements. However, public

display of students' points is not recommended in education because of ethical reasons. Those students who have poor performance may suffer of social exclusion or depression. In some cases the results of top participants may be on display (Barata et al., 2013).

Emotional elements are based on the concept of "flow" (Figure 1). The concept of flow describes the state of mind when a person is totally focused on the task. In gamification it serves dual function, of a technique and a goal. There are three preconditions for such a state of mind: a clear goal, immediate feedback and balance between challenge and skill. Goals determine the chain of actions aimed at achieving them, feedback helps to check if a person is on the right track. A person should neither be bored when the task is too simple, not anxious when solving the problem is too challenging (Csikszentmihályi, 2005). Quest chains used in games are employed in education providing a context for teaching individual concepts, when one task or quest leads to another. Such introduction of problems helps learners to visualize the whole picture of the task and retain it for a long time (Sheldon, 2020, p.130). Game designers use incremental progression to keep players' interest and reach the state of flow which is illustrated by dynamic difficulty adjustment (DDA), when some game parameters change according to a player's performance. The state of flow is desirable in education as well, but it is difficult to achieve in a noisy classroom. Using game elements may break the routine and engage students into a series of tasks which are novel and unusual, and, as a result, increase their focus on the educational content (Gamification and the Future of Education, 2016, p.12).

Using games in education aims not only at engaging students, but teaching them more effectively. There are several ways of doing that: using existing commercial or applied games, and using games created for specific classes by outside developers, teachers or students (Sheldon, 2020, p.9). An opportunity to provide critical feedback on the performance or outcomes of others increased intrinsic motivation. If students know that others will judge what they create, they will be more tolerant and supportive (Sheldon, 2020, p 95). Error correction is one of the basic differences between traditional teaching practices and games. Focusing on mistakes creates a situation when assessment becomes more important than content, while games provide plenty of opportunities to succeed whatever tries a player has. While mistakes are punished in a traditional classroom, playing games is impossible without making mistakes which are seen as a source of information and an opportunity to learn. A player is not to blame, as it is not him or her, but their avatar who makes mistakes. Learning how to solve a

problem by failing several times, avatars survive and get rewarded for their efforts. It is not surprising that students may play games round the clock, while fearing to submit their home assignment because of the risk to fail without having a second chance (Sheldon, 2020, p.11–12).

Learning how to communicate with others is crucial in the context of a game and in real life as well, a career advancement in particular. There are three main ways to communicate in a multiplayer classroom: through writing, speaking to a teammate and presenting to a number of people. As shy students need an assistance of a teacher before speaking in public, it is advisable to extend their exposure gradually (Sheldon, 2020, p.57). It is important to group students carefully: close friends should be in different teams in order for players to learn how to collaborate and negotiate in a new environment, the skill which is useful in any workplace (Sheldon, 2020, p.36). Students' engagement in collaborative and competitive activities is crucial as doing so, they focus on helping others in order to achieve common goals for their guilds. Shifting attension from their individual grades gives students an opportunity to overcome their fear of failure and be more confident by learning from their peers (Sheldon, 2020, p.57; İlhan, 2021).

Monitoring and observing players is crucial. MMO can track players' activities automatically and indicate their engagement by marking clusters, which mean enjoyment, and empty spaces, related to boredom. Teachers in real classrooms do not have such possibilities and should rely on monitoring and observing their students to prevent their failure at the exam (Sheldon, 2020, p.39). Playing games in self-selected groups differs from playing games in more structured situations. There are three leadership roles in case of organized games: teachers, coaches and negotiators. Teachers should know how to play the games they use in the classroom, they share the aim and the rules with the players and follow them. In fact, the rules belong to the game, but the teacher takes into account the participants' abilities, preferences and skills that need to be developed. When the players are familiar with the rules of the game, the coach monitors the activity, if necessary, suggest playing another game or two games in groups. The coach should support both winners and losers, select the games requiring different skills, balance the number and variety of games. The negotiator introduces the art of peacemaking, aiming at fair play, using various strategies for choosing games, the order of players, the ways of finishing a game, and, if necessary, changes the rules or stops the game (Duckert, 1993, p.20–21).

Multiplayer classrooms suggest exploiting usual activities which are coded using

gamer jargon, e.g. "taking quizzes" means "defeating monsters", "individual reading" becomes "solo quest", and "team" is replaced by "guild" (See the Table 1).

Table 1. Conventional and Multiplayer classroom terminology

Conventional classroom	Multiplayer classroom	Conventional classroom	Multiplayer classroom
Student	Player	Real-world abilities	L33t skillz
Teacher	Game Master	Section of the classroom	Zone
Student name	Avatar name	Quizzes / Midterm	PvE
Team	Guild	Student competitions	PvP
Take quizzes / exams	Defeat / fight monsters / mobs	Class fails a quiz	Wipe
Write	Craft	Copy editing	Farming
Presentation	Quest	Midterm exam	Boss mob
Designer	Mage	Programmer	Warrior
Writer	Ranger	Artist	Healer

(Sheldon, 2020, p.43–44, 84).

It is important to set tight parameters of an assignment while keeping the scope of projects manageable. At the same time, the multiplayer classroom should be flexible in order to give students agency and enable them to make meaningful choices. Rewarding students for attending a class is more effective than punishing for skipping it. Once given away, tokens may be sold, swapped, or spent in any other ways imaginable. For example, it is possible to submit an assignment later or use notes in a boss fight for one token, but changing team name requires twelve tokens (Sheldon, 2020, p.44). One more distinguished feature of the multiplayer classroom is the number of assignments like in an MMO, which has enough repeatable tasks for trying as many times as possible and levelling up (Sheldon, 2020, p.55).

2.4. Playing games and learning English

Instructional ESL planners, while prioritizing effective approaches and tools, should be sure to exploit the power of games that create a naturally playful environment for using the target language and retain the learning material. Game-based Learning

(GBL) is a technique used in education in order to achieve better learning outcomes (Saha & Singh, 2016, p.31). Foreign language learning includes not only grammar and vocabulary knowledge, but developing communicative competences. Digital game-based learning provides such opportunities for rehearsing and experiencing practical usage of the target language in situations, which are close to real life (Casañ Pitarch, 2018, p.1147; Liu, 2021).

Combination of GBL and Cooperative learning leads to better results if ESL practitioners follow certain principles in their classrooms concerning grouping, cooperation, competition, leadership, discussion, and use of a target language. It is advised to create heterogeneous groups as students help each other and learn better in that way. Before playing a game, the participants should agree on the guidelines of cooperation which they follow consistently. Cooperating within their groups, students compete with other groups, which is the driving force of any game. It is important for each member of the group to improve their leadership skills, therefore, dominance of one or few participants and passive observation of others should be avoided. That is why discussion of the game and, if necessary, language issues, should be encouraged in groups. In this way all the participants become responsible for the outcomes of the game. However, language learners often switch to their native language during discussion, especially those who lack the vocabulary needed for negotiations. In this case teachers should turn to scaffolding and encouraging using the target language. Needless to say that effective cooperation may be possible by following the principles of collaborative interdependence and individual accountability, which has a positive impact on achieving better results (Bado & Franklin, 2014, p.12–13).

Recommendations based on the findings of the study on an educational video game "Trace Effects" cover grouping, principles of cooperation and competition, leadership, discussion and using target language. Despite the fact that students were free to form teams, heterogeneous groups proved to work more effectively than homogeneous. Students need clear guidelines to follow the principles of cooperation, creating a friendly atmosphere. Keeping balance between cooperation and competition, mutual support and desire to win is important as it fosters motivation of students. Each player should control the keyboard in order to avoid boredom and passive participation, discussions also contribute to taking collective decisions and achieving better results. Using an educational video game demonstrated its positive impact on high school students' learning outcomes, vocabulary and writing in particular (Bado&Franklin, 2014, p.12–13).

The use of one of gamification technologies named Kahoot platform in teaching English for specific purposes to technical university students, according to the results of the experimental study, showed its effectiveness, as students demonstrated not only a higher level of achievement, but also more active engagement and deeper motivation for learning the language. Using Kahoot platform in ESL class for technical university students proved its effectiveness influencing academic performance, engagement and motivation. The researchers claim that it was possible to engage those students who were quite passive in their language class before the experiment (Głowacki et al., 2018). Presumably, playing games in class ensures the shift from teacher-centered to learner-centered environment. Vocabulary games may be used in an ESP class aimed at learning or revising key terms. Moreover, considering the difficulty of finding commercial games in a certain area, students may create their own games based on their major. Any traditional game like "Snakes and Ladders" may be modified according to the needs of an ESP class. Creating games in groups, students then swap them with other teams, providing meaningful feedback. The role of a teacher is to observe students, facilitate the process of creating new games and encourage them to use target vocabulary (Chugai, 2020, p. 447).

Using GBL in teaching English increased students' academic achievements and interest in learning English. Visually attractive games in structured lessons which consist of instruction, presentation and reflection add fun and challenging aspects of learning, which sparkle students' interest in the classroom activities. As a result, students are fully engaged in their foreign language lessons and demonstrate their enthusiasm. Reflecting on their experiences allows students to assess their performance and understand the benefits of gameplay (Ghazy at al., 2021). Besides enhancing learners' motivation to learn English, games extend time of exposure to the resources in the target language. Using gadgets, which became a reality in classrooms, makes it possible to use a digital game-based approach in various educational environments. In addition, it is possible to combine individual and cooperative learning for classroom activities or home assignments (Casañ Pitarch, 2018, p.1155).

Games are usually welcomed by students in ESL class, but still there are some who are reluctant to playing games at the lesson. Stereotypical view of games as the source of fun, not learning, maybe one of the reasons. Another reason may be the necessity to cooperate with others, which can be challenging for those students who have difficulties with socializing (Herrera Rodriguez, 2018, p.72.) The research demonstrated that practically all teachers of English in an Albanian high school often

employ games during their lessons (Bendo & Erbas, 2019, p.55). However, some teachers admitted that it was time consuming to adapt the materials for such a class (Bendo & Erbas, 2019, p.58). Summing up, using games in learning foreign languages, English in particular, offers a lot of possibilities yet to be explored and developed.

2.5. Survey: students' attitudes to playing games and learning English

With the aim to reveal technical university students' attitude to playing games and learning English, quantitative and qualitative data was obtained from an online survey. The participants of the survey are first-year students of the National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute". All the respondents (N=25), who volunteered to participate in the survey conducted in December 2022, had to study distantly because of the wartime in Ukraine. The students stayed in their hometowns, some were temporarily displaced within Ukraine or abroad. The survey consisted of sixteen items regarding students' attitudes to playing games in general, their English language proficiency, emotional and organisational aspects in particular. Using the Likert scale from strongly disagree (SD) to strongly agree (SA), the researchers calculated the median (Mdn) and Inter-Quartile Range (IQR) of each item. Therefore, it was possible to demonstrate what was a typical response (MdN) and measure of spread of various responses (IQR). The last item of the survey was a request to describe student's favourite game, therefore the task was to produce a short written text.

Responding to the statement about playing games in general, students analysed various aspects, which were important for them like visual gains, communication with others, immediate feedback, freedom of choice and freedom to fail. According to the results of the survey, respondents mostly agree with the statement that playing games is their favourite activity (Mdn=2, IQR=1) (See Table 1).

However, twelve percent of respondents do not consider playing games their favourite activity (Disagree or Strongly Disagree) (Fig. 1).

It is possible to suggest that these negative responses may indicate students' engagement in other activities more actively. Moreover, about thirty percent of students cannot decide, either to agree or disagree with this statement. Respondents are also indecisive about their attitude to such important features of games as social engagement and rapid feedback (Mdn=3, IQR=1). Respondents demonstrate the same

Table 1. Attitudes of technical university students to playing games and learning English

N	Statements	SA	A	N	D	SD	Md	IQR
1	Playing games is my favourite activity	5	10	7	12	1	**2**	**1**
2	The most important for me in games is visual status / points	2	6	9	6	2	**3**	**2**
3	The most important for me in games is social engagement	1	6	13	4	1	**3**	**1**
4	The most important for me in games is freedom of choice	7	14	3	1	0	**2**	**1**
5	The most important for me in games is freedom to fail	4	12	5	4	0	**2**	**1**
6	The most important for me in games is rapid feedback	2	4	17	2	0	**3**	**1**
7	Playing games in English develops my speaking skills	6	7	9	3	0	**2**	**1**
8	Playing games in English develops my listening skills	9	6	6	4	0	**2**	**2**
9	Playing games in English develops my writing skills	4	9	10	2	0	**2**	**1**
10	Playing games in English develops my reading skills	8	12	5	0	0	**2**	**1**
11	Playing games in English expands my vocabulary	10	11	3	1	0	**2**	**1**
12	Playing games in English levels up my grammar	2	11	6	5	1	**2**	**1**
13	Playing games relieves stress / fear	6	10	5	3	1	**2**	**1**
14	Playing games helps me with my studies	2	7	11	4	1	**3**	**1**
15	Playing games helps me with time-management	2	4	9	10	0	**3**	**1**
16	Playing games develops my cognitive skills	3	12	10	0	0	**2**	**1**

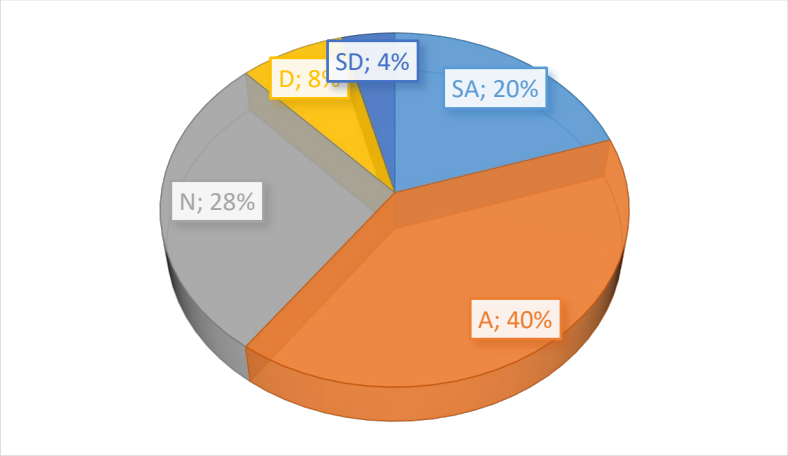

Figure 1. Technical university students' attitudes to playing games

neutrality regarding visual status or points, but the opinions are more polarized (Mdn=3, IQR=2). However, their opinions about freedom of choice and freedom to fail are positive and less dispersed (Mdn=2, IQR=1) (See Table 1). According to the findings of another research, most students think that reward system helps them to learn new vocabulary in a natural way as it is motivating and changes their behavior (Herrera Rodriguez, 2018, p.65).

Considering skills development aspect, respondents reflect on their gaming

experience in terms of English language proficiency. Most respondents express agreement regarding positive impact of playing games on development of English speaking, reading, writing skills leveling up grammar and expanding vocabulary (Mdn=2, IQR=1), but opinions are more polarized concerning listening skills (Mdn=2, IQR=2) (See Table 1). The results of another research show that most students are sure that games help them to learn new words and expressions (Herrera Rodriguez, 2018, p.65).

Analysis of the responses of students on development of their reading skills shows that more than two-thirds express their agreement, with twenty percent being neutral (Fig.2).

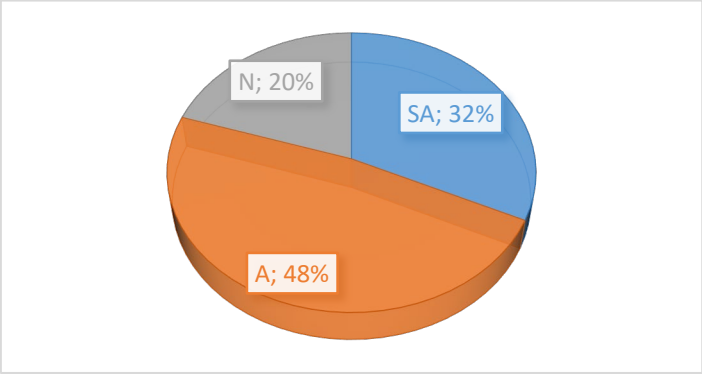

Figure 2. Technical university students' attitude to playing games and developing reading skills.

Regarding emotional and organizational aspects, students thought about their range of feelings related to playing games and the ability to keep "work-life" balance. Respondents neither agree nor disagree with the statements that playing games helps them with their studies and time management (Mdn=3, IQR=1). However, respondents indicate agreement with statements that playing games relieves stress, fear and develops their cognitive skills (Mdn=2, IQR=1) (See Table 1). Indeed, sixty percent of students indicate agreement with the positive influence of playing games on their cognitive skills, while the rest are indecisive about that (Fig.3).

The obtained results are in line with another research which states that using educational games improves students' English proficiency, influencing learners' positive attitudes intrinsically and extrinsically. Creation of a relaxing atmosphere alleviates cognitive loads and leads to lowering anxiety level (Li et al., 2021). The results of a similar research show that half of the students admitted that games were effective, whereas 35 percent had doubts about effectiveness of games as they were distracted and did not focus on learning. At the same time, practically all students

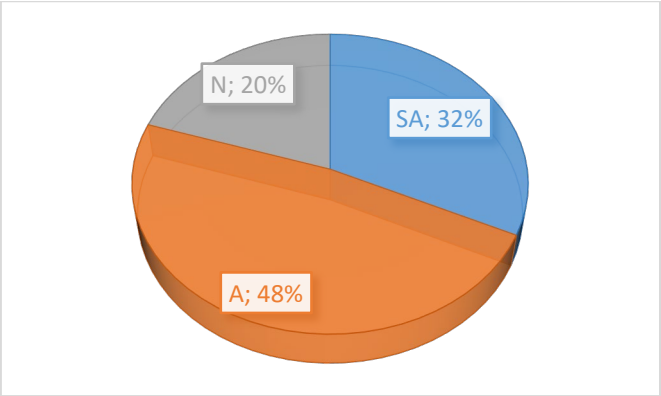

Figure 3. Technical university students' attitude to playing games and developing cognitive skills.

assured that games helped them to develop new skills (Bendo & Erbas, 2019, p.56). Being asked about games at their English lesson, a vast majority of students responded positively (Bendo & Erbas, 2019, p.58).

Writing about their favourite games, respondents shared their gaming experiences and preferences. It was impossible for some of the respondents to complete the task because they could not choose one out of many games. Some respondents claimed they do not play electronic games, only sport games, some were not sure if the activities they enjoy may be called games. Anyway, one of the reasons of playing games for respondents was "releasing negative emotions and communicate in English". Respondents shared a variety of favourite games, which could be divided into five broad categories: multiplayer games, single-player games, sport and logic puzzles, party games, and English games. The borderline between these categories is quite vague, as some party games may become English games if players choose the target language for communication (See Table 2).

Table 2. Favourite games of technical university students

No.	Category	Name of a game	Main features
1	Multiplayer Games	Counter-Strike: Global Offensive	Players are match-made into two teams, terrorists and counter-terrorist, who try to kill each other.
		Dead by Daylight	An action horror game, in which players choose a role of a killer or survivor, aiming at destroying others or staying alive. Violent content.
		Dota 2	An action real-time strategy game which involves hundreds of

No.	Category	Name of a game	Main features
			characters taking part in a battle.
		Rocket League	A player controls a car aiming at scoring more goals than the opponents.
2	Single-player games	The Witcher	Players identify themselves with various characters whose behavior is determined by the environment.
		Oxygen Not Included	A survival game, which requires application of scientific principles in order to create and maintain a space colony.
		Death Stranding	A survival game, which is set in a post-apocalyptic world where a player has to deliver necessities for people who live under ground.
3	Sport and logic puzzles	Sudoku	A player should fill the grid 9x9 spaces using numbers from one to nine.
		Nonograms	A player should fill squares in black and complete a picture.
		Dodgeball	The aim of this game is to hit your opponent with a ball.
4	Party games	Mafia	Players act according to their roles keeping their identity in secret, defending allies and destroying enemies.
		Alias	Players should define as many words as possible using descriptions, synonyms, miming, etc., to get more points and reach the finish space.
5	English Games	Quizlet live	Players should match the cards as quickly as possible, competing in teams or individually.
		Kahoot!	Players compete in teams doing quizzes on various topics.
		One sheep out	Players should guess a word according to its definition. One sheep is gone as soon as a player makes a mistake.
		What fit in a three-liter jar	The task is to name as many objects as possible which fit in a three-liter jar, each round starts with a new letter.

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1. Multiplayer Games. Counter-Strike: Global Offensive (CS:GO) was chosen by the respondents because playing it provided an opportunity to communicate with their friends. Another reason was to kill the enemies and imagine that they are Russian soldiers who attacked Ukraine. CS:GO is a multiplayer shooter popular with both amateur and professional gamers. Players may be match-made into two teams, terrorists and counter-terrorists. It is also possible for players to choose teammates among people they know. The format of CS:GO is perfectly suitable for competitive gaming competitions with considerable prize pools (https://www.dictionary.com/e/pop-culture/csgo/). Another multiplayer game, chosen by respondents, is "Rocket League", which is possible to win by scoring more goals than the opponents (https://www.rocketleague.com/). One respondent loves "Rocket League" so much that confessed that the description of its various aspects "would take ages". A player has to control a car and it may seem to be childish, but with time the true sense of the game is revealed. "Rocket League" is described as "competitive and catchy", having "a friendly community and active developers". "Dead by Daylight", is a multiplayer action horror game the aim of which is to play a role of a killer or survivor. There are warnings about age limit as well as about the scenes not appropriate for some people because of the violent content (https://deadbydaylight.com/game/). "Dota 2" is a multi-player action real-time strategy (RTS) game which is free to play, millions of players take part in a battle discovering new strategies (https://www.dota2.com/home). "Dota 2" was often mentioned by students as an excuse for being late because they could not stop and played it all through the night. An explanation for that is that it involves hundreds of characters and requires learning "the gameplay for each hero", which is challenging to do, stressful and time-consuming. Nevertheless, a respondent loves it because he or she "can become the best" and be a winner. According to another respondent, "Dota 2" makes players waste their time and shatters down their nervous system, which may be somehow compensated by "friendly atmosphere and loyal attitude".

2. Single-player games. A Role-Playing Game (RPG) "The Witcher" assumes players to identify themselves with different characters and act accordingly in fictitious environments (https://www.thewitcher.com/en). It was ranked high by one of the respondents because a player has the freedom of choice when they develop the world filled with various characters, both positive and negative. Playing "The Witcher 3" it was possible to experience "friendship, love and separation". In addition, "an incredibly well-developed combat system" created an illusion that a player "becomes"

the main hero called Geralt. "Death Stranding" is a single-player survival game set on a mountainous terrain (https://www.ign.com/articles/2019/11/01/death-stranding-review). A player has to survive in a post-apocalyptic world delivering goods to people who are locked in shelters. Respondents list the reasons why it is their favourite game: the main idea of uniting humans, perfect visuals and music. One response provided explanation for the game "Oxygen Not Included" being the favourite: "there are countless systems that I build and have to keep running". Being responsible for what they created makes a game special for a player. "Oxygen Not Included" a single-player survival game the aim of which is to create and maintain a colony in space which requires applying basic scientific principles (https://metro.co.uk/2019/08/05/oxygen-not-included-review-deep-space-survival-10518351/).

3. Sport and logic puzzles. "Dodgeball" was chosen because respondents love ball games, and the main idea of this game is to hit your opponent with a ball (https://www.summercamppro.com/my-favorite-18-dodgeball-variations/). Some respondents started playing "Sudoku" and "Nonograms" because of the power cuts in Ukraine during the wartime, when there was no power, Internet connection for a couple of hours of even days, and even offline usage of gadgets was limited. Playing "Sudoku", an individual should fill the whole grid consisted of 9x9 spaces using numbers from one to nine. Skill levels of Sudoku players range from beginners to advanced (https://sudoku.com/). "Nonograms" look like grids of squares, they are logic puzzles which require a player to fill squares in black and complete a picture (https://www.puzzle-nonograms.com/).

4. Party Games. Another game mentioned by some respondents, "Mafia", was special for them because it has an intricate plot, develops communication skills, speaking and listening, besides, it "makes players think". The aim of this game is to win by killing others. The main roles are civilians, mafia, a narrator, detective and doctor, but all players should keep their identity in secret. The traditional rounds are called nights and days, each player acts their roles, developing strategies to defend allies and destroy enemies, which makes a perfect game for parties and holidays (https://www.kqed.org/pop/10178/how-to-play-mafia-an-in-depth-guide-to-the-perfect-holiday-game). A party game "Alias", which is also called "Tactic classics", is usually played in teams. The goal of the game is for each player to explain as many words for their teammates as possible, using descriptions, synonyms, antonyms, miming, etc. The players move forward as many steps on the game board as guessed words and the first team to reach the finish space wins (https://alias.eu/about-

alias/rules/). At the lessons students play in pairs or teams and consider this game a fun way of recognizing and memorizing words in English. They also play "Alias" at parties, but they usually use their native language.

5. English Games. One of the respondents was not sure what to call a game, sharing that they especially enjoyed doing exercises with "My Grammar Lab" Pearson Education, and "Quizlet live" (https://quizlet.com). English language learners use Quizlet sets of flashcards individually for learning vocabulary, but it is possible to play "Quizlet live" in teams of at least 4 players. The task is to match flashcards, for example, a word and its definition. In case of face-to-face lessons players are divided randomly into teams, find their teammates and play interdependently, because only one player has the correct answer at a time. However, playing in teams is not possible online. Instead, players compete with each other and as soon as one player completes all the tasks, the game is over and the winner celebrates the victory. "Quizlet live" game was favourite for some other respondents claiming that it develops their speaking skills and improves vocabulary. Following simple steps "create", "host or share" and "play", "Kahoot!" games are user-friendly in various educational environments (https://getkahoot.com). According to respondents, "Kahoot!" quizzes provide possibilities to compete with others, testing their knowledge and learn something new.

Other respondents' favourite game is "One sheep out", a vocabulary game, which is possible to play online when a teacher uses "Active Teach Speak Out", Pearson Publishing House (https://www.pearson.com/english/digital-tools/activeteach.html). Players should guess the word according to its definition and type it in the box. There are nine sheep and a dog in the background. If a player makes a mistake, one sheep is gone, therefore, each player has nine tries. The winner is the player who can guess more words and make fewer errors than others. The reason for playing a game "What fit in a three-liter jar", according to one of the respondents, is that because playing it "develops vocabulary and recharges the brain". The game starts with a player choosing a letter, task is for players to name an object which may fit in a three-liter jar. The winner is the player who manages to name the largest number of such objects.

To conclude, students are mostly fascinated by multiplayer and single-player online games, but other kinds of games like sport, logic puzzles, party and language games are also chosen as their favourite. According to another research, students enjoyed playing competitive online games in class more than the traditional ones (Herrera Rodriguez, 2018, p.64).

Conclusions

The potential of using games for learning has been recognized since ancient times. Using the principles, games designed according to, in various aspects of human life creates collaborative communities, increases productivity and empowers people. Technological advances opened other approaches in education to meet learners' needs and fully engage them. However, gamification is far from mechanical duplication of successful practices, it should be part of teacher training and curriculum design. It is impossible to use games effectively without understanding the driving force, which makes them so appealing for players.

Game elements, namely mechanical, personal and emotional, constitute the basis for engaging players. Needless to say that these three driving forces of a game are interconnected and balanced. Game mechanics like movement, resource management and spying, are regulated by rules and combined in different ways to motivate learners. Game dynamics, or personal elements, focus on by four personality types, who possess particular features and patterns of behavior. Constant interest of players is sustained by fixing the balance between four dimensions of a game: players, world, acting and interacting. Emotional elements determine direction and results of the actions, creating the state of "flow", when players are concentrated on the task being determined to achieve the goal.

Positive impact of using games in education is determined by the fact that besides learning the subject matter, students develop decision-making, problem-solving, communicative and cooperative skills, which are crucial in the 21st century. The importance of such game elements as incremental progression, when challenges increase gradually, onboaring, which is scaffolding, instant feedback, let alone of personal approach, collective responsibility and emotions of students is recognized and widely exploited by educators all over the world.

Learning foreign languages requires not only mastering grammar and learning vocabulary but developing language skills. A naturally playful environment is precondition for purposeful usage of the target language, developing communicative competences and achieving better learning outcomes. The results of the survey completed by technical university students demonstrated their positive attitude to using games in learning English, its impact on speaking, reading and writing skills. In this context students especially appreciate freedom of choice and freedom to fail. Respondents indicate agreement with the ability of games to relieve stress, fear and

develop their cognitive skills. Writing about their favourite games, students are mostly fascinated by multiplayer and single-player online games, but other kinds of games like sport, logic puzzles, party games and language games are also chosen as their favourite. To conclude, using games in education, in learning foreign languages in particular, offers a lot of possibilities yet to be explored and developed.

Glossary

Agency is a possibility of players to have meaningful choices which involves them into the game (Sheldon, 2020, p.38).

Alternate Reality Game (ARG) is a pervasive game which uses multiple multimedia to tell a story which depends on players' decisions (Sheldon, 2020, preface XXII).

Augmented Reality Games (AR) add digital elements to the real world which become visible by means of devices (Sheldon, 2020, p.8).

Avatar means an online representation of a person (Sheldon, 2020, p.12).

Backstory is the description of a character's life before the beginning of a game (Sheldon, 2020, p 116).

Boss Raid is an attempt of players to fight against a strong opponent (boss) (Sheldon, 2020, p.12).

Buff is permanent or temporary player's empowering by leveling or spells (Sheldon, 2020, p.81).

Camping means that a player stays in the same location to farm a mob as soon as possible (Sheldon, 2020, p.60).

Collateral learning happens when players are curious about a story while playing a game and learn something new without realizing that (Sheldon, 2020.

Downloadable Content (DLC) or Extension Pack means additional materials, items, areas to explore, etc. (Sheldon, 2020, p.81).

Dynamic Difficulty Adjustment (DDA) is the process of automatical changes on some parameters and behaviours in realtime which are based on the player's input or ability (Gamification and the Future of Education, 2016, p.12).

Edutainment is a combination of education and gameplay, which does not require monitoring of a teacher (Sheldon, 2020, p.13).

Extrinsic motivation inspires players to do something in order to get concrete

rewards, not fun (Sheldon, 2020, p.64).

Farming is fighting against the same mobs multiple times in order to gain levels and loot which are possible to sell in real world (Sheldon, 2020, p.41).

Fiero (pride in Italian) means the state of happiness caused by an ability of a person to overcome obstacles (Sheldon, 2020, p.12).

Flow is a player's mental state of total focus at hand; it is a technique and a goal of gamification (Gamification and the Future of Education, 2016, p.12).

Game Master (GM) is responsible for a gameplay in a multiplayer analog game: orginazes sessions, imposes rules, solves conflicts (Sheldon, 2020, p.36).

Gamification is the introduction or application of elements of games into non-game contexts (Gamification and the Future of Education, 2016, p.3).

Gamification is using game mechanics in other environments aimed at increasing engagement (Sheldon, 2020, p.5).

Guild is a community of online RPG players who have the common goals and play style (Sheldon, 2020, p.32).

Intrinsic motivation inspires a player to do something because they believe it is a right thing to do (Sheldon, 2020, p.66).

L337 or l33t speak is the name of the simplified language used by players, initially misspelled words, and then recognized as means of coding the words not nallowed in multiplayer gaming and messaging, e.g. "c" as "see", "u" as "you", "l337" as "elite" (Sheldon, 2020, p.28).

Leaderboard is a scoreboard for displaying the results of the players preface (Sheldon, 2020, preface XIX).

Massive Multiplayer Online game (MMO) refers to games that involve a great number of players from different countries who play interacting with each other and completing tasks (https://www.applovin.com/glossary/mmo-games)

Minecraft is a fantasy adventure game which had been used to teach a variety of subjects (Sheldon, 2020, p.88).

Mob stands for "mobile" which means an opponent generated by a computer, but not another player (Sheldon, 2020, p.4).

Modification (MOD) means an experience that is built from the assets and programming of another game (Sheldon, 2020, p.88).

Name, Physical description, Current life (NPC) is a brief description of a three-dimensional character, an individual player or a guild (Sheldon, 2020, p 113).

Onboarding is introduction or tutorial aimed at guiding a player at the beginning

of a game (Gamification and the Future of Education, 2016, p.7).

Pervasive game creates an illusion which turns reality into fantasy so that they look alike (Sheldon, 2020, preface XX1).

Player Versus Environment (PVE) is a gameplay when players fight against mobs which are called AI (Artificial Intelligence) (Sheldon, 2020, p.36).

Player Versus Player (PVP) is a gameplay when players fight other players (Sheldon, 2020, p.36).

Quest Chains are sets of quests logically connected (Sheldon, 2020, p 125).

Stalking is observing a person out of obsession or the desire to learn more about human characters (Sheldon, 2020, p 123).

The multiplayer class is a game played in real time in a classroom by students as players and a teacher as the Game Master (Sheldon, 2020, p.6).

Virtual Reality Games (VR) create imaginary worlds using 3-D devices (Sheldon, 2020, p.8).

Virtual world is a digital world experienced by many people simultaneously, which may be a game or it may contain games (Sheldon, 2020, p.55).

Wipe is a disastrous event in PVE or PVP when the players lose their points because of their opponents attack (Sheldon, 2020, p.39).

KAPITEL 4 / CHAPTER 4 [4]
ESP LISTENING IN ONLINE LEARNING TO UNIVERSITY STUDENTS

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Introduction

Communication is one of the basic competencies in modern society, intercultural relations are necessary for any professional activity. It depends on foreign language proficiency, which is an integral part of higher education.

Nowadays, a large amount of knowledge ceases to be the main educational goal, though an indispensable condition for personal and professional realization has become more important. In this regard, the task of any foreign language teacher is to help students become active partners in learning rather than passive listeners and to develop self-studying abilities beyond the curriculum bounds.

Modern requirements for engineering specialists' training include an ability to communicate effectively professionally in the native language and a foreign language having first of all an opportunity to carry out professional and business communication in English as the language of international communication at scientific conferences and most international publications.

The realities of modern education pose new challenges for foreign language teachers in engineering specialists training as they should carry out professional communication in both native and foreign languages, which in business and scientific spheres means correspondence exchange with a foreign partner, telephone calls, negotiations in a foreign language, presentations, etc. In academic discourse, students should understand lectures, make speeches and presentations at conferences, take notes, and write scientific papers.

Effective communication demands the developed ability to formulate thoughts and ideas in a foreign language and includes four interdependent skills: written speech (writing), written speech comprehension (reading), and oral speech (speaking), oral speech comprehension (listening). Among the aforementioned skills teaching listening causes the greatest difficulties due to the specifics of auditory perception.

Modern realities determine English language knowledge as one of the basic communicative competence of a modern qualified specialist. Therefore, teaching

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97243 printed signs - 2.4 author's sheets

English is one of the priorities of higher education.

An important component of the higher education system is the study of a foreign language, as an integral element of human culture expanding the student's picture of the world, created in the native language (Decruy, 2020, p. 555).

University students interpret the goal of learning a foreign language as an ability to communicate in this language and the basis of oral communication is a foreign language listening or aural perception (Puspita, 2021). In a situation of real communication, most of the student's time is devoted to listening and perception of information from the interlocutor. How accurately they understand the received information determines their subsequent actions. Helping students learn to perceive and understand oral speech is the main goal of listening (Quasthoff, 2011, p. 12).

Listening comprehension plays an important role in learning a foreign language since it is one of the channels for transmitting the information. In a foreign language class, the teacher's goal is to organize a communicative situation, where the students listen to the speech of the teacher, their groupmates, and a range of audio and video recordings. The inability to understand auditory material can bring negative emotions since listening comprehension affects speaking, reading, and writing skills.

4.1. Analysis of recent research and publications

For the first time, the term *listening* was mentioned by the American psychologist D. Brown in the book called "Teaching Aural English" (Brown, 2022). It defines listening as a receptive type of speech activity, a semantic perception of an oral message, which includes the simultaneous perception of the linguistic form and the statement content comprehension.

Listening was attributed to a complex speech skill, closely related to speaking, and was also considered an independent and specific type of speech activity. Being a receptive type of speech, listening is the perception and understanding of generated speech by ear.

De Gelder and J. Vroomen, regard listening as an activity of perceiving and recognizing a speech message by ear, a complex, specifically human type of internal speech activity, which in the process of learning should have an external plan (Ellis, 2019, p. 289-301).

J. Skipper, J. Devlin, and D. Lametti describe listening as a perceptual mental

mnemonic activity (Skipper, 2017, p. 79). D. Massaro and J. Simpson characterize listening as a complex mental-mnemonic activity based on the perception, comprehension, and processing of an oral message (Mei, 2028). W. Freeman singled out the following characteristics of listening as a type of speech activity: listening implements oral and direct communication; is a reactive and receptive type of communication; the course of listening is internal, and uneven (Freeman, 1991).

Listening as any process is based on certain psychophysiological mechanisms: perception, recognition, and comprehension (Massaro, 2014). The mechanism of listening is described in detail in the psychological literature. M. Call and J. Sachs identify the mechanisms of listening with the processes of long-term and short-term memory and reflection of reality as a receptive synthesis of production and probabilistic prediction (Cauldwell, 2018; Singh, 2020). At the end of the twentieth century, based on psychological studies, a theory of listening was developed, defining two listening models – *bottom-up* (a sounding message decoding) and *top-down* (communication context) (Osada, 2001; Tsui, 1998). From our point of view, both models coexist and depend on the teacher's goals and the student's level of language proficiency, so both models could be used in teaching listening.

In the context of studying the factors contributing to the success of listening comprehension, the theory of speech flow segmentation should be also mentioned (Osada, 2001). M. Yeldham considers syntagma as one of the units of speech flow, which conveys the subtle semantic and stylistic shades of the message, ensuring the dominance of the semantic unity of speech and sound (Yeldham, 2018).

4.2. Objectives

In this work, we have made an attempt to describe the stages traditionally used in developing students' listening skills.

The goal of teaching listening comprehension is to develop students' ability to understand foreign speech by ear. The training listening includes linguistic, psychological, and methodological components. Listening texts can be ranked according to the degree of difficulty. There are three stages in teaching listening comprehension: pre-listening, listening, and post- listening.

The changes in the development of listening skills in modern universities are related to various digital teaching aids, used in a range of educational situations. The

existing computer-based learning programs for foreign languages do not always meet the basic requirements of the university curriculum. Such programs are mostly designed for individual learning.

4.3. Statement of the problem

Listening is a complex receptive skill based on the perception, comprehension, and processing of information in oral speech. (Osada, 2001, p.80).

The listening perception is dependent on various kinds of interference (noise, speech defects, hearing imparities, etc.) (Bardovi-Harlig, 2022, p. 51-53). Developing listening skills is a part of foreign language teaching providing an opportunity to understand speech utterances as separate lexical units in the language. Listening is an integral part of teaching phonetics and intonation (rhythm, pause, stress, melody, etc.). The students can learn lexical units and the grammatical structures of a new language system as well.

Listening is multifunctional and related to other language skills (speaking, reading, and writing). L. Vandergrift identifies two types of listening with complete and partial comprehension of the text. The result of listening could be information comprehension, partial comprehension, or incomprehension. (Vandergrift, 2006, p. 6-11).

Listening and speaking are closely interconnected with each other, since, in the process of communication, we perceive aural information, process it, formulate an oral statement, and then reproduce it in speech.

Listening and reading are both receptive types of speech. The process of text reading or listening results in information comprehension. The difference is in the auditory or visual channels for information perception. In the process of reading aloud, both channels (auditory and visual) are activated, which helps to perceive the information better and faster (Grosjean, 2018).

The connection between listening and writing should not be underestimated, because writing is dependent on the aural perception of speech units, which are primary to writing and represent the text as a graphic design of speech. (Martin, 2016, p. 1823).

Thus, listening is related to all other types of communication.

The process of listening is dependent on short-term memory, which is responsible for retaining information, and long-term memory, which stores images of lexical units

(Costigan, 2020). Listening skills contribute to cognitive development through visual and sound images recreating a holistic picture of the world.

Listening has always been considered one of four skills. More recent views on listening have been based on cognitive psychology, which regarded the processes of teaching listening as *bottom-up* and *top-down* interpretations of the text.

At the same time, linguists have studied a lot of new things about the essence and structure of colloquial discourse. They assert that written information read aloud cannot serve as an adequate basis for developing listening skills sufficient for authentic discourse. Thus, modern views on the listening process emphasize the role of the listener as an active participant, employing various strategies to facilitate, monitor, and evaluate listening (Yoon, 2019).

Listening in recent years has been considered not only as a process of aural text comprehension but also as a way of language learning since it can provide the input necessary for foreign language understanding. This raises the question of conscious awareness of the language form, which helps students to include new word forms and structures in their active vocabulary. Different points of view define listening comprehension and listening as a skill. The main function of listening in foreign language learning is to facilitate spoken discourse comprehension (Kang, 2019).

For understanding the nature of what is involved in listening, it is necessary to consider some of the features of spoken discourse and the problems it poses to listeners. Spoken discourse has different characteristics from written discourse, and these differences can add several dimensions to our understanding of how we process and listened to the speech. Spoken language usually happens instantly and the listener must process it right away, as often there is no possibility to listen to it again. Spoken foreign language discourse often seems to be an inexperienced listener very fast. Monologues can be up to 160 wpm, and normal conversation is usually up to 220 wpm. The impression of faster or slower speech usually comes from the amount of intra-clausal pauses that the speakers make. Unlike writing, spoken discourse usually occurs at the moment of speaking and often contains abbreviated forms, functional auxiliaries, various interjections, repetitions, etc. Compared to the logical structure of written speech, an oral message is a discourse with a linear structure. The organizational unit of written speech is a sentence, in oral speech both short and longer statements are present in a conversation. Spoken texts are often context-dependent and assume some common background knowledge. Spoken extracts are harder for understanding as they can use in a variety of accents, from standard to non-standard, regional, non-native,

etc.

As mentioned above, there are two different types of approaches involved in spoken discourse comprehension: bottom-up and top-down. The bottom-up approach refers to the use of an input factor as the basis for text comprehension. Speech comprehension begins with the receiving input data, which is analyzed successively – sounds, words, sentences, and texts until the content meaning becomes clear for the listener. In this mode, understanding is seen as a process of decoding (De Gelder, 2000). A top-down approach to listening involves the analysis of text into smaller structures (sentences, words, sounds).

The knowledge of lexical and grammar units is important as it provides the basis for the bottom-up approach to listening. The input is scanned by the learner for familiar words, and grammar constructions to develop relationships between sentence elements. Students need to have vast vocabulary storage and good knowledge of sentence structure for processing texts from the bottom up. The exercises at this stage should help the students to remember the input at listening, recognize the words and sentences, identify the keywords and discourse changes, and to draw a parallel with grammatical relationships between key elements in sentences, paying attention to the stress and intonation, which determine the functions of the word and sentence. Traditional listening activities are aimed at bottom-up processing of text: dictation, after-text multiple-choice questions or tests, and other exercises requiring detailed recognition of input data (De Gelder, 2000).

The top-down approach to teaching listening applies the students' background knowledge to understand the meaning of the listened text. The upward process works from language to meaning, the downward process is from meaning to language. By applying prior knowledge and experience to a specific statement on a specific topic, listening comprehension can be a *top-down* process. Factual discourse is used to confirm made predictions and fill in details at understanding the aural message (De Gelder, 2000).

The exercises for top-down listening should develop an ability to use keywords for building a whole discourse, analyze the general situation, define the participants' role and goals, identify the cause and effect, note minor details, etc.

The following exercises develop top-down listening skills: students try to predict the content by asking questions, which answers they expect to hear; create a list of subjects or concepts that they already know about the topic, and about what they would like to learn more, then listen to the text and compare; read the words of one

interlocutor and predict the part of another speaker, then listen and compare; read a list of keywords/statements that will be covered in the text and then listen to see which ones have been mentioned; listen a part of the story, try to finish it, then listen and compare the endings; read the headlines and guess what happened, then listen and compare (Collins, 2022).

Teaching listening typically includes a sequence of pre-listening, listening, and post-listening exercises and contains bottom-up and bottom-up listening activities. The pre-listening tasks prepare learners for both top-down and bottom-up listening including activities for prior experience activation, content prediction, and key vocabulary analysis. During listening, the students focus on the message understanding and conduct exercises requiring selective listening. Post-listening involves checking comprehension by asking for learners' opinions on the topic of the text. It can also include bottom-up listening including studying the details or focusing on elements difficult for hearing. The analysis of the text parts can help learners to recognize language structures of spoken discourse that they were not able to recognize.

Successful listening training depends on the strategies used, which help the students concentrate on the content and teach them how to listen. The strategies target to involve the students in the listening process.

Linguists distinguish cognitive and metacognitive strategies. Cognitive is based on the process of storing and retrieving data from long-term memory. Cognitive strategies include the perception of linguistic and non-linguistic factual information with further memorization and storage in long-term memory. Metacognitive strategies are conscious or unconscious mental executive functions of cognitive strategies management. Metacognitive strategies involve the situation assessment before listening, monitoring the effectiveness of listening in the process and after completing the task and conducting subsequent self-control through testing the effectiveness of the used language tools (Rukthong, 2020).

There are various schemes for incorporating listening strategies into practical lessons. The most common in teaching listening consists of the following stages:

- Preliminary listening (pre-listening), when the students predict what they might hear.

- First listening, when the students check what they have predicted correctly make notes of new information they hear.

- Discussion, when the students compare what they have understood and identify those parts of the text they did not hear or understand marking those parts that require

attention in the second hearing.

- Second listening is when the students listen to the parts they have not understood or heard before and take notes on any new information they hear.

- Post-listening discussion, when the teacher makes sure that the students have understood the text correctly.

Listening is regarded by scientists as a passive type of speech activity. However, listening requires active cognitive perception, speech recognition, and comprehension.

4.4. Difficulties of teaching listening

Teaching listening is provided with various exercises, but they are ineffective without the psychological and linguistic understanding of the listening specifics. To some extent, listening is still seen as a by-product of speaking. It is closely related to speaking and to a certain extent dependent on speech patterns and more developed speaking skills help to understand the listened text. However, this does not mean that learning to speak means learning to listen. The assumption that teaching oral speech develops listening skills simultaneously is incorrect.

In listening, intonation is considered to be the most informative feature, since it helps the listener to segment speech into syntactic blocks, understand the connection between the utterance's parts, and, consequently, comprehend the content. The intonation reveals communicative, syntactic, logical, and other functions. The communicative type of message is recognized (narration, question, exclamation, motivating, etc.) and is correctly correlated with the intonational variant. Phonemic recognition comes next and is necessary for acoustic-articulatory image creation. Listening is a complex process of selecting informative patterns and making associations dependent on the previous language experience. For successful foreign language listening, the students must have a developed active and passive vocabulary, acquired mainly through reading. However, a visual image of a word imprinted in the memory is not always easily associated with an auditory (Lervåg, 2018).

At the phonetic level, listening is determined by the knowledge of the probabilistic sound sequence, which is not clear as in visual perception, and the most obvious only under stress. Short sounds are more informative than long ones and cause less difficulty in recognition.

Vocabulary recognition depends on the knowledge of the semantic and syntactic

build of speech units and on the ability to correlate the word meanings with the context.

Text prediction is also complex. The utterance's meaning is the easiest to predict as the structure and content are combined in a unit. However, the linguistic form is unreliable in supporting semantic prediction, although the listener's attention is usually concentrated on it.

The main factors hindering audio perception are the inability to focus attention on the general content and misunderstanding of important details; constant switch of attention from the linguistic form to the content. (Gavrylenko, 2015). The second factor is the most typical for listening to complex or emotional texts. The errors occur when semantic prediction is based on imagination and speculation of incomprehensible facts without taking into account the linguistic form of the text.

In real-life communication, we have to listen a lot, and the accuracy of the received information determines our subsequent actions. Teaching students to understand aural speech is one of the most important goals of education (Onishchuk, 2020). In situations of real communication, we are faced with listening as a completely independent type of speech activity. We listen to various announcements, news, instructions, lectures, stories, phone conversations, etc. Listening is a complex receptive mental-mnemonic activity associated with the perception, comprehension, and active processing of information (Kharzhevska, 2019). Listening is closely related to other types of speech activities. Both listening and reading are perceptive skills. Listening and speaking represent oral speech skills (Cummins, 2015). Listening and speaking realize oral direct communication (although information can be transmitted by technical devices). Listening is just like reading a reactive type of speech activity.

The result of listening should be a conclusion and an understanding of the perceived semantic content. The response to listening is a verbal or non-verbal reaction (Ratnam, 2019). Classroom listening may not always correspond to listening comprehension in real life. However, in teaching listening and preparing them for speech perception outside the classroom, it is necessary to take into account the features of real-life listening. Most listening texts should be based on natural spontaneous speech, which can have visual support and be repeated if necessary. According to some researchers, second listening improves understanding by 16.5%, the third – by 12.5% (compared to the second), and all subsequent repetitions do not provide a significant improvement in understanding. (Gan, 2020, p. 9703).

The practical experience of foreign language teaching proves that listening is one of the most difficult types of speech activity as it is presented only once or sometimes

twice. Therefore, the students need to learn to understand the text from the first presentation, since in real situations of communication, repetitions are often excluded. Besides, listeners are not able to change anything, and cannot adapt the speech to their level of understanding. Each person has his style, too scientific or too emotional, full of idioms and figurative expressions. There are also difficulties caused by the listening conditions (external noise, interferences, poor acoustics, quality of recording and equipment used in the classroom, etc.); by individual characteristics (speaker's gender, ages; diction, timbre, tempo, pauses, possible articulation disorder; dialect, etc.). In teaching communication practice listening is linked with speaking, when partners constantly change roles, acting either as a speaker or as a listener.

Examples of exercises, which help with the difficulties in listening, are:

- Listen to the words and raise your hand when you hear a word with the sound;
- Listen to the sentences and raise your hand when you hear an interrogative (affirmative, negative) sentence;
- Listen to a series of sounds, and write down the given sounds;
- Mark the words you heard in the order in which they sound;
- Find and highlight the heard word in the row of written words;
- Determine the number of words in the sentences you listened to;
- Mark pauses in the sounding text;
- Determine the type of sentence;
- Listen to the text and note how many interrogative, affirmative, and negative sentences you heard.

4.5. Communicative approach in teaching listening

Nowadays, intercultural communication dialogue between representatives of different countries has particular importance. Each participant should be able to formulate their thoughts in the language of communication, as well as to perceive and correctly interpret written and spoken language.

The communicative approach is the main and the most successful way of teaching a foreign language. Communicative competence teaching is developing practical interaction between grammatical knowledge and sociolinguistic knowledge of the rules of language use (Whyte, 2019, p. 6). Researchers distinguish linguistic, sociolinguistic, sociocultural, strategic, discursive, and social competencies.

Teaching listening is dependent on phonetic, lexical, and grammatical skills, which are important conditions for the productive perception of foreign speech. Among phonetic skills, students should differentiate similar-sounding words and phrases, compound words and phrases based on stress, determine the number of stressed syllables in a sentence, etc. (Kharzhevska, 2019). Equally important is the consideration of the emotional state of the speaker.

Lexical skills in teaching listening include the perception and recognition of individual lexical units, homonyms, homophones, homographs, paronyms, antonyms, synonyms, etc. Synonyms develop expression variety and accuracy of thoughts permitting to avoid of repetition and monotony. The knowledge of word-building elements is also important for successful listening.

Grammatical skills involving the recognition of various grammar constructions, an ability to distinguish between them and correlate with meaning, the knowledge of parts of speech, and their differentiation and clarification of sentence members are necessary for productive listening.

Various technologies are used for the development of listening skills. One of the most effective is the audiolingual method, which instead of focusing on the acquisition of vocabulary through learning its use in different situations (Movva, 2022). Listening assignments may use a different material or be based on the same text, but with increasing complexity. The role of language in perception is striking because of the opposing tendencies hidden in the nature of visual perception and language (Handal, 1999).

Language communication is a complex phenomenon of information exchange through a universal system of sound or graphic signs called language (Gale, 2022, p. 479). In the process of communication, interlocutors transmit or receive a language message. Listening to authentic material is valuable for educational, practical, and professional goals and supports the process of communication developing sociolinguistic and sociocultural competence. Culture is finally a collective experience (Gale, 2022, p. 484). The perception of foreign speech provides an opportunity to get acquainted with and consolidate new vocabulary. Socio-cultural knowledge is important for interpersonal communication and listening to authentic texts helps to acquire knowledge about the lifestyle, national mentality, and cultural characteristics.

Listening is significant as the basis for productive competencies development (speaking and writing). The perception of foreign language determines the strategy of communication as the selection of language means observed in listening helps students

to develop their speech functions. Listening assists greatly in building speech patterns for linguistic, sociolinguistic, socio-cultural, strategic, discursive, and social competencies.

4.6. Stages of teaching listening

In listening methodology, a significant scientific problem could be distinguished: underestimation of training listening as a unique skill with its psychological and linguistic difficulties. Psychologists emphasize that text identification in listening is an unconscious action, which result could be observed only at the stage of image formation (Grosjean, 2018). At higher levels of language acquisition, the identification process is simultaneous but if the audio signs are not enough for comprehension, the identification does not take place or is erroneous.

Simultaneous recognition prevails in real-life linguistic communication, although elements of succession are included. The success of listening depends on the comprehension type: indirect (discursive) or direct. In the process of perception, the listener converts sound into images and lexical units employing a motor (speech-motor) analyzer (Grosjean, 2018).

Listening is a complex process of selecting information from some possible ones and depends on the listener's associative ties established as a result of language experience. Some of these ties are strong and are highly likely to appear. At the same time, inhibition of non-essential features not related to the context might happen and hinder listening comprehension.

In determining the audio text level, we should take into account the method of the main idea conveying (inductive or deductive) and the form of presentation (audio or audio-visual). Similarly, the text should be relevant to a particular style and genre, and the type of communication. Audio texts can be ranked according to the level of difficulty:

- Easy audio texts include educational adapted or simple dialogues/monologues of popular literary, scientific, or art styles, short messages, and narrative texts with a simple sequential presentation. The main idea is expressed explicitly at the beginning of the text, the grammar is well-known; only 2-3% of unfamiliar words, which meaning can be easily guessed; the structure is simple.

- Medium audio texts include authentic and adapted texts of popular literary,

scientific, or artistic style, usually conversation, message, description, and polylogues with a limited number of storylines with a consistent and simple presentation. The main idea is expressed at the beginning or in the middle of the text. Grammatical rules should be familiar; vocabulary might comprise 2–3% of unknown items that are not keywords.

- Difficult level includes authentic texts from media, popular science, and artistic style like conversations, interviews, reportages, descriptions, and polylogues with a variety of storylines. The main idea is expressed at the end of the text or is not explicit. The language might comprise unfamiliar grammatical structures and 4–5% of unfamiliar words.

Teaching listening is based on a specially selected audio text and consists of pre-listening, text listening, and post-listening stages.

The main goal of the pre-listening stage is to remove the language difficulties and prepare the students for further listening. All activities and text-based training exercises are aimed to develop contextual guessing or teaching probabilistic prediction.

The pre-listening can include pre-text questions, asking students to guess what the text will be about based on the title (if any), keywords, or illustration. The pre-listening stage is very important for medium or high levels of difficulty. The pre-text exercises help students to hear an audio text better and to concentrate on relevant information to the forthcoming listening.

The listening stage includes listening to the audio text once or twice. In the case of the second listening, it is important to set new tasks for students each time, for example, for the first listening to select a title for a paragraph, for the second – to answer the questions given at the pre-text stage or fill in some table.

The post-listening stage includes control and assessment of the listened text comprehension, which might be fragmentary, general, detailed, or evaluative (Al Musalli, 2001, p. 1502). Post-listening exercises are selected depending on the goal set before listening. The main types of exercises for the post-listening stage are answering general questions; multiple-choice tests; content transformation; facts listing and ordering; the text type and the topic determination; matching the title/illustration with the text content.

For the goal of general understanding, the exercises include questions for general and detailed understanding; drawing up a plan, a map, diagrams, and tables; retelling in the target language based on an illustration, diagram, keywords, or plan; assessment of the characters' actions; filling in gaps.

The level of comprehension depends on the development of language skills and

experience. The follow-up exercises can be writing a review / evaluating the text you have listened to; annotation/abstract writing; comparison of different points of view; evaluation of judgments objectivity; substantiation of agreement/disagreement with the author's conclusions; interviews, conversations, and discussions.

4.7. An integrated approach to teaching listening

The problem of listening incomprehension depends on the level of the student's training in how to listen to foreign language discourse. Often university students are given audio recordings to listen to, and then the teacher tests their understanding of the content. Thus, teachers often focus the student's attention on the result, but not on the audio text perception, i.e. the process itself is overlooked. Yet, by paying attention to some of the most common phonological features of spoken language, students can better understand the content of the audio text.

For successful teaching, firstly, we should clarify the meaning of the concept of *listening*; secondly, consider the context of speech perception and comprehension, and outline the approaches to teaching listening; thirdly, define the concept of coherent speech and weak forms of functional words, sound cohesions, assimilation and rhythm; and finally, to give the students examples of training videos, songs, authentic audio materials.

In recent years, listening skills have received more attention due to the increasing number of various listening comprehension tests (international, independent external evaluation (ZNO), entrance master's exams (EVI). Also, this interest is dictated by the increasing availability and popularity of multimedia technologies, which allow the creation of a more realistic picture of the language and culture being studied, including linguistic and paralinguistic features (body language and gestures) helping students to understand the meaning.

In scientific works, the emphasis is made on the creation of effective methods for developing aural speech understanding and overcoming difficulties in the perception of foreign language statements (Brown, 1950; Mei, 2018). One of the most popular approaches in teaching listening is metacognitive, which trains students to manage their cognitive strategies for operating their speech perception skills and recognizing weaknesses, and evaluating achievements.

The researchers' interest lies in the field of understanding the nature of aural

speech perception. They are based on research in psycholinguistics, semantics, pragmatics, discourse analysis, and cognitive studies (Freeman, 1991). Taking into account the fact that listening comprehension is a complex step-by-step process that involves various types of information processing, we consider two main models of teaching listening: bottom-up and top-down models. The first allows students to recognize the lexical and pronunciation speech characteristics for audio text comprehension. Students focus on linguistic forms at the level of words and sentences to grasp the meaning of the statement. The second model is based on the listeners' existing knowledge of the context and experience, acquaintance with the interlocutor, and/or situation (Freeman, 1991, p. 41–46). Studies have shown that effective listening comprehension is a balance between the two described models (Freeman, 1991). At the same time, this balance can shift in favor of one of the models depending on the task and situation, for example, the audio text characteristics, and the speaker/listener factors.

It is generally accepted that teachers more often use a top-down model in teaching listening, using the tasks of content prediction, questions to check understanding, and listening for details. And in practical teaching exercises on pronunciation and phonological characteristics, which permit students to pay attention to the linguistic design of the audio text, are often overlooked.

Listening is a process demanding the teacher to select the audio materials, and anticipate possible problems to help students to identify coherent speech regardless of the student's language level and experience in listening.

J. Brown and D. Crowther referred to the coherent speech as a continuous sequence of spoken language, ordinary utterances/conversation to specific phonemes considered separately (Call, 1985). Common features of coherent speech include:

- weak forms of function words (auxiliary verbs, conjunctions, prepositions, articles, pronouns). In spoken English, we hear weak forms more often than stress. The weak forms are more difficult to recognize, they are shorter, faster, and not very clear, some sounds disappear completely, and the vowels in these words are often replaced by a short vowel "shwa" [ə].

- sound adhesion. In spoken language, words are interconnected. If a word ends with a consonant sound, and the next begins with a vowel, we hear a consonant sound at the beginning of the second word, e.g., drop it /dro-pit/.

- intrusion or phoneme insertion in a word or between words, e.g., in American English, the sound [t] between [l] and [s] (false - [fɔ:lts]).

- elision or dropping of a vowel or consonant phoneme, either in the middle or at a word edge. e.g., dropping of a weak vowel after p, t, k in words like potato, where the vowel in the first syllable may not be pronounced ([pʰˈteɪtəu]) (Call, 1985).

- assimilation or likening of one phoneme to another, e.g., [t] → [k] ([t] at the end of the word becomes [k] and the next word starts with the sounds [g] or [k] – white gloves [waɪk glʌvz], smart kid [sma:k kɪd]).

- rhythm or shifting of stressed and unstressed syllables, which gives a certain rhythm to speech and plays an important role in communication.

Pronunciation specialist D. Gilbert compares the rhythm and melody of speech with road signs, which help the listener interpret the speaker's intentions (Goh, 2021). The English language is isochronous, as stressed syllables are repeated at regular intervals, regardless of the number of intermediate unstressed ones. As a rule, nouns, semantic verbs, adjectives, and adverbs are stressed and articles, conjunctions, prepositions, pronouns, and auxiliary verbs are unstressed. However, any word or syllable can be emphasized if the meaning requires it, for example, for contrast or correction. Unstressed syllables are pronounced faster to fit them into the intonational pattern or the time to pronounce a statement depends on the stresses, and not on the number of syllables. To maintain regular stress at regular intervals, the speaker has to keep the length of the syllable uneven.

Coherent English speech consists of many elements, which the students need to be aware of, especially of the changes occurring in fast, natural speech. So, the teacher should organize the educational process for students to help them with understanding coherent speech.

A. Rukthong and T. Brunfaut suggest dividing the tasks into the recognition and reproduction of the audio texts (Rukthong, 2020). Recognition at the initial stages of weak forms learning includes an unstressed phoneme [ə], various prepositions (to, from, of), auxiliary verbs, and the combination of sounds, as, for example, in the expression *a lot of* [ə lɒ təv]. Once students get used to the weaker forms, the teacher can show students how the most common phrases are pronounced.

4.8. Teaching listening at non-linguistic universities

Students in non-linguistic specialties should be taught listening as a separate skill and as a part of professional communication including such aspects as pronunciation,

internal articulation, and receptive lexical and grammatical skills.

Unlike real-life communication, an audio file in the classroom cannot be adapted to the student's level of comprehension or be clarified through questioning. In foreign language listening, some external difficulties might occur (noise, interferences, poor acoustics, individual pronunciation, tempo, pauses, articulation disorders, a large amount of unfamiliar vocabulary, idiomatic and colloquial expressions, special terms, abbreviations, etc.) (Rukthong, 2020, p.31-40).

The process of teaching listening is a multidimensional activity, and success depends not only on lexical and grammatical knowledge, but also on the development of the students' speaking skills, memory, motivation, and extralinguistic knowledge (Quasthoff, 2011, p.9).

Since listening is a complex mental-mnemonic activity of perception, comprehension, and processing of information, teaching it is a complex sequential process. In a non-linguistic university, the process of teaching foreign language listening involves several stages depending on the specialty: practical foreign language course, foreign language for special/professional purposes, practical foreign language course for business communication, and practical foreign language course for academic communication.

For non-linguistic students, the development of language skills takes place in the cooperation of foreign language teachers and teachers of professional disciplines.

Each stage of foreign language teaching in a non-linguistic university covers a special field of communication. Discipline "Practical foreign language course" teaches foreign language communication in various social, educational, and academic situations; the discipline "Foreign Language for Special/Professional Purposes" develops foreign language communicative competence at a B2 level, which involves effective communication in typical educational and professional situations; discipline "Practical foreign language course for business communication" trains professional foreign language competences in listening, speaking, reading, writing at B2+ level, linguistic and socio-cultural, educational, strategic and pragmatic competences; discipline "Practical foreign language course for academic communication" covers academic foreign language competences necessary for effective communication in the academic scientific field. The goals of these disciplines involve the improvement of listening, speaking, reading professional scientific literature, knowledge of scientific vocabulary, and grammatical resources necessary for foreign language communication.

At the initial stage in the block "Practical foreign language course", students should be able to understand the main content of short simple audio texts like advertisements, booklets, reference books, popular scientific information with tables, charts, graphs, maps, hypertexts, etc., texts about educational institutions, professional training programs, student exchange programs, language schools, etc.

At this stage, students are trained to listen to the basic information, but the next block "Foreign Language for Special/Professional Purposes" assumes an increased level of oral speech comprehension. Thus, the first block has different levels of material complexity in the educational, socio-cultural, and professional spheres of communication.

The next block "Foreign Language for Special/Professional Purposes" involves listening to more complex content: scientific and technological texts about the history of science, nature, prospects of scientific and industrial development, and interviews with specialists and scientists of the student's professional field. However, this stage also involves further development of the material studied in the previous stages. The improvement of listening skills on the previously identified topics continues in the next blocks "Practical foreign language course for business communication" and "Practical foreign language course for academic communication". Successful listening requires consistent work with the material, which includes several stages:

- preparatory stage;
- direct listening;
- practical implementation.

The purpose of the preparatory stage is the acquisition of the lexical and grammatical material from the audio text at the pre-listening stage. This stage includes familiarization and practical use of new vocabulary based on the grammatical material already covered. This is followed by the familiarization of new grammatical structures (Grosjean, 2018).

Direct listening can be one-time or the recording can be presented two or more times. In real life, the speaker will not repeat information twice, so the students should be taught to listen once for general comprehension.

During practical implementation, students complete true/false statement tasks, answer questions, draw a plan, or fill in forms and tables. At more advanced levels, exercises include discussions on the topic they heard. At the stage "Foreign Language for Special/Professional Purposes", it is advisable to introduce listening to specialized texts for the development of professional vocabulary. Repeated listening to the text

promotes a sufficient level of comprehension for further discussion in the professional sphere.

Despite the importance of teaching listening, in a limited number of hours for foreign language teaching, teachers at non-linguistic universities sometimes neglect this type of work in favor of developing other skills. However, listening can be not only part of the lesson but also an element of independent language training (Gavrylenko, 2015; Hasan, 2019). Students can be given resources for listening at home with subsequent reviewing in the lesson. The forms of control can vary from simple questions to mini-essays, topic presentations, and discussions. Such tasks improve language skills and motivate for further foreign language studying. Listening to foreign language texts is sometimes hard due to the negative personal attitude of some students to this type of activity. Such attitude usually depends on the level of proficiency in oral and written speech, vocabulary and grammar knowledge, and the development of foreign speech perception.

In reducing these difficulties, the teachers should carefully select the materials for listening paying attention to a motivational component. Small specific videos have proven themselves very well as visualization facilitates the language material perception and helps to overcome misunderstandings, and increases motivation. On the Internet today there is a large selection of high-quality authentic materials.

From the beginning of foreign language learning, students are involved in the process of listening as an integral part of oral communication. The first audio texts for the first-year students should be small and with a minimum of unfamiliar vocabulary. Small professional texts, fragments of lectures, or scientific articles can serve as teaching materials. Presenting an audio text to students, the teacher should pay attention to the number of new language structures and the rate of speech. The first-year student's ability to perceive new information is very limited, so the speed of presentation and the amount of information should not exceed their capabilities, i.e. the audio text should contain the necessary information and nothing excessive that is not interesting or useful at the moment. Psycholinguists believe that aural speech understanding is closely related to the ability to isolate the main information received from the speaker and reformulate it in a concise form.

At the initial stage of language learning, the main source for students of a spoken foreign language is the teacher and they get used to her manner of speaking, style, and articulation, and do not always know how to understand the speech of other people. Therefore, students should be specially taught to listen to the other speakers, where the

technical teaching aids and audio recordings of lectures are in help the teacher. Eliminating language difficulties in listening is a necessary condition for learning. Listening may be hampered by the lack of feedback as the listener is not in direct contact with the speaker and can neither stop the speaker nor ask him a question to clarify any obscure fragment. In turn, the speaker cannot take into account the listener's reaction and speak more slowly, or paraphrase what was said, making his speech more accessible.

The listener does not see the interlocutor, and all information comes only by ear. Visual support is not always an indispensable condition for listening but always has a positive effect since the gestures and facial expressions of the speaker often stimulate linguistic guessing. Recorded audio information is a one-time presentation of speech, which requires the listener to comprehend instantly the incoming data.

Successful comprehension of audio text depends on the amount of new information, grammatical and syntactic complexity, as well as on the tempo of speech. The offered audio material should be understandable for students at the grammatical and lexical levels and also the speech rate should be accessible for the language level. The speech rate is often quite high and does not always coincide with the rate of speech of the native language, so the listener does not have enough time to think and a fast rate prevents them from understanding the general meaning. However, at a slow rate of speech, students do not always correctly recognize the sentences. The optimal rate of speech is considered to be the one that is close to the personal students' rate.

In practical lessons, it is necessary to offer students audio materials as often as possible. At the initial listening stage, short texts are used, with a small amount of new information, and the speech rate is 20% lower than average. As students develop listening skills, the text length increases and contains more information, and the speech rate gradually accelerates. The success of listening also depends on the text content, which is easier to understand if students have additional background knowledge about the topic.

Audio text introduction is preceded by a set of lexical and grammatical exercises aimed at overcoming language difficulties. Pre-text tasks involve introducing students to the topic in the form of a short message, visual material, or a dialogue. The teacher can use keywords, which express the main idea of the text and help students to explain these words through context analysis or linguistic guess. Even if the written words were explained and practiced in expressions and sentences, they are not always recognized in the audio text. The keywords should be neither new nor complex for articulation.

Pre-text tasks can consist of questions and micro texts and should help the students to understand the content of the audio text.

The main task of post-text tasks is to check to understand and they can include questions about the content of the audio text, the selection of correct statements, multiple choice exercises tests, etc. For checking vocabulary comprehension students can continue or start sentences including new words. After listening, students should be able to highlight the main and secondary information and give detailed answers based on the text content.

At the intermediate stage, the criteria for the listening text change: the speech rate and the size of texts increase, and the grammar and vocabulary become more complicated. In the process of learning listening comprehension, students develop skills and abilities of the receptive type of communication.

In the process of monitoring listening comprehension, the teacher accesses how the students understand aural speech. Different forms of control are not always objective as due to insufficient development of foreign language speaking skills a student might understand aural text content but cannot adequately convey it. In this case, translation into the native language can help, but this method of monitoring listening is not very effective for speech development. All these factors are conditions that make listening easier or harder and the criteria for assessing listening skills should change accordingly (Kang, 2019, p.60-69).

Listening should be considered a component of meta-subject competence for students of non-linguistic universities. Studying the problems of teaching professional listening, teachers note that in situations of real professional communication, we should develop the ability to use both verbal and non-verbal means of communication (Gilbert, 2018).

The methodology of teaching listening to non-linguistic students combines several components. The first is a range of pre-listening and post-listening communicative exercises as the basis for the development of listening skills. These exercises are aimed at the training of perceptive abilities and properly organized assignments for teaching listening communicatively are designed to contribute to the effective preparation for situations of real communication.

The second component of teaching listening is the student's independent work for consolidating the skills developed in the lessons, which is watching audio and video materials (documentaries, thematic lectures, news programs) for at least an hour per week and reporting the results to the teacher. Students are provided with a link to the

video material and after watching they write a summary, complete a questionnaire, or do some other task. Independent listening is carried out in comfortable conditions and the students can listen to the information several times, and use dictionaries and other reference materials. The teacher accesses their work, comments, and returns them to the student for further analysis and correction.

The third component is listening to lectures or their parts by teachers from foreign universities as a source of real academic communication. This is a real-life type of listening when students need to understand a single presentation in the conditions of limited time and without any supporting original text or additional reference resources. The topics of the lectures should be related to the students' specialties. The main goal of such listening tasks is to understand the aural text of increased complexity as accurately as possible and then present it orally or in written form.

These components include classroom exercises, independent work, and listening to authentic lectures in conditions of real communication, which contribute to the student's involvement in their professional and academic communication and support interest in foreign language learning. However, teaching listening should begin with planning and material selection taking into account language and content accessibility.

Nowadays, in higher education, due to a variety of audio and video materials, the teacher can turn listening into motivating and creative activities, which involve self-development, self-education, and professional growth. For developing pronunciation the teacher can after introducing new vocabulary, suggest writing a quick dictation, when she pronounces words or expressions with a natural speed and students write them down, or partial dictation, when the students write keywords and then recreate the original text-based on them. Such dictations involve students listening to the teacher or recording and, as a rule, the text is small. Also good for developing pronunciation are the exercises on observing word chains in the flow of speech and distinguishing them. The students of pre-intermediate level and above can analyze songs or poems. They are given the lyrics/poem with gaps, and while listening, they determine the spelling of the missing words.

The other types of activities effective for developing pronunciation are the exercises on repetition of words or expressions, exercises for practicing rhythm like finger snapping, tapping, clapping, head nodding, reading short sentences with stressed words and then adding other unstressed words, working with jazz chants and songs for the development of rhythm.

The students of non-linguistic universities cannot always rely on their knowledge

for audio text comprehension and they need a solid background, which J. Reimer, J. Brown, and T. Lorsbach, call a *phonological code*, or students' awareness of the phonological features important condition for coherent foreign speech understanding (Reimer, 2001). It is the teacher who should offer the tasks that contribute to the recognition and reproduction of various sound forms. Training phonological system recognition begins at the initial stage of learning and gets more complicated with every language level. These tasks can significantly increase the students' perceive abilities and develop confidence in foreign language listening.

Since listening and speaking are two interrelated skills, success in foreign language communication is generally dependent on their development. Good listening skills are important for dialogical communication as they determine the response reaction, but also for preparing monologue statements. An ability to interpret correctly factual and linguistic information from authentic lectures and speeches can help future engineering specialists to choose the right language tools for their oral performances. In the system of following tasks, we consider the listening skill as a goal and as a means of learning, which serves as the basis for oral speech development.

Listening as a type of speech activity often causes difficulties for students, as it requires a simultaneous application of a complex set of mechanisms. Among the main cognitive operations that ensure the integral comprehension of aural text content, the following activities can be distinguished:

- attention focusing on perception and comprehension of foreign speech;
- comprehension or a mechanism for recreating semantic ties in spoken language. Comprehension is impossible without the segmentation of individual units, and comparison of sound and content.
– internal utterance or transformation of the sound into articulation.
- probabilistic prediction of statements based on the assumption of a sentence or expression beginning. Linguistic or semantic prediction is based on knowledge of grammatical structures and lexical combinations.
- memorization or activation of short-term and operative memory.

The mechanism of long-term memory is involved in listening, as correct decoding of the utterance requires the actualization of the language stored in memory (Cauldwell, 2018; Sachs, 1974).

The system of tasks aimed at the development of all cognitive operations mentioned above includes a system of exercises divided into three stages: before listening, during listening, and after listening. Tasks at the pre-listening stage are

mainly aimed at developing linguistic and semantic guesses and decreasing linguistic and psychological barriers. For example, in pre-listening on the topic 'Networks', students are asked to analyze and describe a graphical diagram of a local network device using a list of keywords from the aural text.

Another example of a preparatory exercise is watching a video on the topic 'Network topology' without sound with support on a graphical diagram of network topologies and basic expressions, and then students had to recreate the audio text. As a possible continuation, one of the students watches the first part of the video with the audio track on, and the second student watches the second part of the recording. The students then exchanged information checking their predictions.

Another task at the pre-listening stage suggests giving students the sentences from an audio recording with gaps, which students had to fill in using the correct form of the original word in brackets or adding the necessary preposition. Then students listen to the audio recording and check the answers.

At the stage of listening the tasks are aimed at developing the ability for speech flow segmentation, internal pronunciation, and comprehension of foreign language speakers. One of the tasks here is to arrange semantic pauses and logical stresses in the script while listening to an audio recording. Also, students can note the keywords and expressions reflecting the main idea of the aural text. At the next stage, students are asked to retell the text using this reference. Or the students are given a list of words and expressions, which they use to determine the context of the audio recording.

At the last post-listening stage, the emphasis is on the language material activation, which was presented in the audio text, and the practice of lexical units, grammatical structures, and factual information heard. Students are asked to prepare a dialogue or presentation based on audio materials, for example, to discuss the advantages and disadvantages of different types of network topologies.

4.9. Computer technologies in teaching listening

Due to the development of digital teaching aids, they can be employed in different educational situations. However, the teacher has to understand how these aids can be applied in education. The computer-based learning programs in foreign languages offered nowadays do not always meet the requirements of the university curriculum as they are mostly designed for individual or independent foreign language studies.

The classification of multimedia educational technologies on different devices is based on various criteria such as interactivity, instant feedback, the dynamic nature of the educational information, visibility, and an individual approach. Traditionally, the researchers single out linear and non-linear multimedia technologies (Harker, 2020).

Taking into account the resources and their final product we can single out the following types:

- Programs for creating multimedia presentations (Microsoft Office PowerPoint, SmartDraw, Prezi, Kingsoft WPS Office, ProShow Producer, etc.).

All such programs have their advantages and disadvantages, and different levels of complexity. They provide a different number of presentation templates, a set of visual effects, and the possibility of linear or non-linear communication.

- Electronic dictionaries (Cambridge Dictionary, Merriam-Webster Dictionary, Macmillan Dictionary, Oxford Learner's Dictionaries, Dictionary.com, Collins Dictionary, and others).

- Educational programs and applications based on video or audio material analysis (Classtime, DuoLingo, Busuu, and others).

- Platforms for creating tests (Kahoot, Easy Test Maker, Classtime, and others).

- Online services for creating didactic games and exercises (Quizlet, Flippit, Factile, and others).

Among traditional computer technologies in language teaching, there are videoconferencing, chats, newsgroups, blogs, concordances, RSS, Wiki, group work tools, bots, virtual conversation programs, and other services that help to store and exchange texts, photos, videos, which contribute to the development of e-learning. As a result, the educational environment also changed and requires new approaches to the educational process.

Listening, like speaking, provides the possibility of foreign language communication and requires regular practice. The Internet resources in foreign languages are effective and interesting for students, are easy to use, and include different types of linguistic tasks. Currently, the teacher has almost unlimited resources of audio and video materials at her disposal as well as all kinds of manuals for foreign language learners and educational audio courses. However, one of the most important problems in teaching listening is building a system of exercises aimed at developing listening skills.

The sequence of the listening tasks can be changed depending on the training stage, the student's preparation level, the classroom, and self-studying where the

authentic listening texts help to increase the effectiveness of the learning process. The Internet technologies used in teaching listening provide an opportunity to improve the process of foreign language teaching as they increase motivation, develop the skills of authentic text comprehension, and conduct research work.

Computer technologies for practicing listening skills combine computer linguistics with Internet and teaching technologies. The students are involved in a situation similar to foreign language communication. In modern applications, it is possible to save achievements and compare them with other users. Thanks to computer technologies, traditional learning is supplemented by electronic teaching platforms and aids, which play an important role in teaching foreign languages in real-life situations and help to communicate with other interlocutors around the world in real time. Computer technologies in teaching listening are convenient and effective but require the student's discipline and self-organization, learning time planning so that everyday life and duties do not interfere with language learning.

Modern multimedia and network technologies support teachers with the implementation of computer media (texts, graphics, audio files, animations, video clips, etc.). Due to new technologies, all teaching materials are interconnected: texts are usually supported by audio samples, videos, pictures, etc. Thus, the effectiveness of computer learning increases.

The use of computer technologies for developing listening skills is especially relevant in the context of distance learning. Despite the distance format of studying, the teacher needs to follow general educational goals and create conditions for training of all skills, including listening. For this the teacher has two options for organizing training listening:

1. Collect audio material on Internet sites and make it available to students via an Internet link. The students are given the option to decide how many times to listen to the audio material, and if the resource is equipped with mode functions, then the student can also choose the tempo.

2. The teacher plays audio material on her device in a video conference with students.

The first option is considered the most effective, because the student understands the text better, while listening during a video conference the perception might be hindered by some interference.

There is one more option for organizing listening training: in case of the absence of necessary devices and equipment, the teacher can record some video material herself

using appropriate intonation and gestures to help students understand the text.

Computer technologies in teaching listening are much more effective than the reproduction of the material by the teacher since a reach choice of any individual pronunciation, voice timbre, pace, and speech peculiarities provide numerous available resources for the teacher. For overcoming difficulties in native speech understanding, the students should be trained to listen to their speech from the beginner's level. In addition to classroom work, the teacher can recommend students effective online platforms for self-study, which can be used for developing listening skills.

Modern challenges for education resulted in the rapid development of distance learning, which was possible due to modern computer technology. The main principle of distance learning is interactivity and technical means are intermediaries between the teacher and the student. They support interactive teaching and organize a specific infrastructure for education. The teacher chooses appropriate technologies and materials adapting them to the students' needs. The main characteristics of distance education include the following:

- interaction between teacher and student is technically mediated and the intermediary is a computer (or any other device with Internet access);
- this mediated process is planned and organized by the teacher;
- the student should be able to organize independent studying;
- the teacher should know distance learning specifics and be able to apply traditional and innovative teaching methods.

Teaching foreign languages has always been one of the most difficult in education.

Modern students belong to the so-called digital generation, who obtain knowledge differently. They get used to searching for informational resources themselves and know how to work independently, so the teacher practicing listening can reduce to a minimum the list of words given before listening; permit students to use smartphones and other gadgets for listening; employ real audio texts by the speakers from different parts of the world; vary the range and length of texts; use professional and academic texts; practice listening in every lesson; permit students to listen to the text independently.

For successful implementation of computer technologies in education the teacher needs practical skills in Internet use, knowledge of Microsoft Office, search for the necessary information, creating online bookmarks and links, working with large amounts of information, implementing computers and the Internet in the educational

process, use modern electronic tools, monitor the development of new technologies, etc.

For developing listening skills in professional communication, we use the interactive components of the open-source learning program Moodle, which permits teachers to create learning material on topics corresponding to working programs including interactive content and videos as a learning tool for practicing listening skills (Illa, 2020).

The built-in features of Moodle provide opportunities for interaction with students and to create of interactive content such as videos, question lists, drag and drop tasks, multiple choice questions, presentations, etc. Moodle platform also permits the teacher to evaluate the student's performance, saves time, and support student in developing their listening skills. The interactive components depend on the system of tasks, assigned to students together with audio/video materials and can include:

- gap filling with words or expressions in the before / while / after listening stage (Drag the words);

– choosing the correct statement (True or False questions);

- selecting the correct answer from the given options (Multiple Choice).

The platform provides the possibility of multiple repetitions of the audio text. The students can immediately see the results of their work as on the Moodle platform, there is an option to create a test for evaluating the results of listening, and tasks are checked automatically. This develops students' self-control and responsibility, and the teacher can significantly save time for other educational activities.

The most important advantage of using interactive platforms like Moodle is the edutainment or implementation of educational techniques during entertainment activities, which significantly increases learning and motivates students. Interactive materials include sound, colour, animation, and images, which help students to visualise and understand the learning material.

The possibility of creating a personalised educational environment is provided by the Google Classroom application, which is a cloud educational environment based on the concept of SaaS (Software as a Service), which provides the learning and educational management system, as well as the related software as a service. This is a free service for educational institutions that allows any user with a Google account to create their classroom. Google Classroom is a personal learning environment based on network technologies with features such advantages as accessibility, transparency, multiformat, personalized, and easily integrated into educational projects (Singh,

2020).

Google Classroom allows the teacher to create training courses in different disciplines, and levels of complexity, and divide course materials into topics. In teaching listening, the ability to post audio and video materials, links to Internet resources, and podcasts, is especially important. Google Classroom integration with Google Forms permits the creation of multiple assignments and tests and sets deadlines for them.

The listening materials based on Google Classroom are easily structured by modules and topics, which can include a complex of interrelated educational units aimed at the development of listening skills via different types of foreign language activities and different levels. Multi-level organization of the material permits to vary the exercise complexity (Okmawati, 2020).

The limited time in the lesson might hinder the development of auditory competence. However, the introduction of blended learning on the Google Classroom platform makes it possible to increase the amount of time devoted to listening, since listening tasks could be organized by topics, lexical and grammatical material and included in tasks for independent work. Also in Google Classroom, the teacher can easily give feedback or students test their results immediately after completing the task. The teacher can track who has completed the task and who has not yet begun, get a summary table of results, view general and individual statistics, and return the student his work for revision. The statistics help the teacher to analyse mistakes and plan further tasks accordingly. All course materials are structured and stored in folders automatically on Google Drive, which makes them available on any device.

Google Classroom permits the creation of a personal educational environment not only for the teacher but also for the students. The student gets the opportunity to complete tasks on any mobile device, including a smartphone, anywhere and at any time; work at his own pace and, if the task allows, do it an unlimited number of times, work on mistakes; track the results; communicate with the teacher and other course participants in different formats. The listening assignments in Google Classroom can include questions to check the student's progress (e.g., the student is asked how many times he had to listen to the audio text to complete the tasks, and estimate the time to complete the tasks).

Google Classroom platform helps the teacher to integrate listening tasks into teaching and significantly increase the amount of time devoted to the development of listening skill by organizing students' independent work on the platform (Syakur,

2020).

In teaching listening skills a good example of a combination of several resources is a TED talk, which includes a lot of videos on different topics with supporting materials. The purpose of the TED platform is not to teach English. It was created as a non-profit platform where people who have achieved recognition could speak on issues of interest, even if it not related to their professional activities. However, the lectures of various lengths (from three minutes to half an hour) and topics, as well as a script, and a material presentation make this site suitable for the development of a wide variety of learning resources.

For practising listening comprehension, the teacher can ask the students to listen to the lecture and answer the questions, fill in the missing words and expressions, mark the sentences as true (T) or false (F), etc. Based on TED lectures, the teacher can develop a whole lesson aimed at developing professional and general language competencies.

Recently the TED team offered teachers a new Ted-Ed platform, where the teacher can use already-made tasks based on a video lecture. They suggest three types of tasks: watch, think, dig deeper, and discuss. Firstly, students watch a video lecture with a hidden script. In the Think section, the lesson developer provides a test with different types of questions about the lecture (multiple-choice, true-false or open-ended questions are the most widely used). The performance is checked by the system or by the teacher (for open-ended questions) and the teacher can comment on the answers. The teacher also can highlight the fragment to which the question is related. This option is very convenient if the material is difficult for students. In the third stage, the teacher can apply different types of reading and writing tasks according to the topic of the lesson. Finally, it is possible to create a forum discussion. This option is very convenient for the organization of a free discussion to a free discussion on the given topic. The students express their opinion and respond to the remarks. The teacher can monitor the discussion at any time and take part in it. The teacher can also develop her grading system, for example, an independent comment is equal to two points, and the answer to the interlocutor's statement is one point (Purdy, 1997).

This educational platform is very promising for developing listening skills as the materials can be used in the lesson and for individual studying. The routine learning procedure of checking comprehension is switched into automatic mode.

However, the discussion option is available only for registered users and the discussion is a task on the Ed.Ted platform will differ significantly from the classroom

discussion. A combination of technologies can be a way out and routine activities better be carried out on the platform, while free communication tasks can be performed in the class, or as a chat on social networks or messengers.

A rich source of listening materials is the YouTube portal, which is the most popular video hosting service on the Internet and provides free video storage and demonstration services. YouTube users are allowed to upload their videos, they can also express their attitude and evaluate them, add to favourites and share them with friends. These opportunities provide possibilities for using videos in the lessons and independent language study.

On YouTube, we can find both educational videos (video lessons, lectures, seminars), and entertaining blogs, talk shows, and interviews, which can also be used as didactic material for foreign language teaching. YouTube and TED Talks are actively used by teachers and help to optimize the educational process.

One good method of teaching listening is podcasts. The term *podcasting* is a combination of the ideas of iPod and broadcasting and means the creating and distributing of sound and video files (podcasts) as radio and television shows on the Internet (Internet broadcasting). As a rule, podcasts have a certain topic and time of publication. A. Rahman describes a podcast as a specially prepared audio or video recording, which is available for listening/viewing on the World Wide Web and available for downloading on any electronic medium (Rahman, 2018).

A lot of researchers highlight various didactic properties of podcasting (Abdulrahman, 2018; Rahman, 2018) including mobility, accessibility, authenticity, relevance, interactivity, motivating potential, productivity and multi-functionality. Working with podcasts in teaching listening includes three traditional pre-listening, listening and post-listening stages.

Podcasts can be divided into

- audio (in the audio file format);
- video (in the video file format);
- screencasts (in the video file format with a superimposed audio track);
- personal podcasts distributed through a personal computer or mobile device;
- extensive podcasts (cover a wide range of files from music to interviews, news and real conversations)
- educational podcasts (created for educational purposes involving listening or video materials with a range of exercises and tasks);
- authentic podcasts created by native speakers and especially teachers for

developing speaking skills.

Working with podcasts includes three stages:

1. Pre-listening or pretext. The teacher tells the students the rules for working with podcasts; indicates the topic, organizes topic discussion and gives keywords. At this stage, it is important to help with grammatical and lexical difficulties by familiarizing unfamiliar vocabulary and grammatical structures.

2. Listening or text. Students work with the podcast, doing the tasks that the teacher has set for them.

3. Post-listening or post-text. The students complete comprehensive tasks, for example, putting sentences in the correct order, matching terms with their definitions, filling in the gaps, etc. Also at this stage, the teacher organizes a discussion based on the audio material. As a follow-up project work, students can create their podcasts in the form of a monologue speech or an interview, then discuss them in the lesson, and evaluate them.

Many researchers identify such didactic properties of podcasting as accessibility, authenticity, interactivity, motivating potential, productivity, and multi-functionality. (Abdulrahman, 2018, p. 25). Accessibility means that students can listen to the podcast at any convenient time, both online and by downloading materials for further listening. Authenticity is possible since many audio and video files are created by native speakers and the students have an opportunity to get acquainted with many dialects. Relevance is related to the fact that podcasts are constantly updated, and students have an opportunity to subscribe and follow these updates. Interactivity means that anyone can easily search for podcasts on any topic and language level. Podcasting is motivating for young active Internet users and productive as the students can create their audio and video files freely available on the Internet, which makes them active participants in foreign language communication, remove the language barriers and gain self-confidence, and makes the learning process more interesting and productive. The multi-functionality of podcasts is expressed in the fact that they are aimed at developing not only such types of speech activities as listening and speaking, but also improving pronunciation, vocabulary, grammar and other language skills.

Experiments conducted on podcasts in language teaching indicate their beneficial effect on the development of auditory skills (Ratnam, 2019, p. 20). Podcasts contribute to the development of self-studying abilities, since the students can work with a podcast outside an educational institution, and the variety, accessibility and interactivity of topics motivate students to learn the language on their own.

There are a huge number of methods for developing students' listening skills in the process of teaching English.

One of the options for developing listening skills through the native language and culture is to use the Kahoot platform, a free and exciting service with numerous features and capabilities. The Kahoot Internet platform was created in Norway in 2013 and is currently very popular in various disciplines around the world. The service has an application and a website with a bright and interesting design and a simple interface for users with information on how to work with this service and its main features. The site has a range of articles and audio texts with subtleties on various topics (Kohnke, 2021).

On this platform, the teacher can create her tests, polls, and questionnaires and conduct them as a competitive game. The platform makes the learning process more interesting and attractive and helps to overcome the difficulties that arise during learning with the greatest success and ease. Kahoot can conduct a survey with instant results, which helps the teacher to identify the existing problems and organize quick feedback.

Another advantage of Kahoot is that the teacher can add audio or video file to testing, finding relevant materials in the target language. Tasks with different content can be created for listening skills development, e.g., in the form of test games and competitions.

The Kahoot platform proved to be an effective online resource that contributes to fast and easy listening skill development.

Among other computer-mediated educational resources, there are numerous online language courses. Their advantage is flexibility permitting them to change their content according to the listeners' needs. An important asset of online courses is control as the teacher can receive reports on the amount of time spent on a particular task and the results. Modern online courses contain animated elements, video clips and interactive tasks. Most online courses are based on specific educational and methodological backgrounds and have some such advantages as significant time savings; regularly updated learning materials; the possibility of using several resources simultaneously; access to newspapers, magazines and publications. The entire lesson cannot be devoted to working with such programs. However, the teacher can employ there as a part of the lesson and for home assignments only after analyzing the material posted on a particular site. For lesson preparation, a foreign language teacher must process a large number of Internet sources taking into account the requirements of

modern education.

Conclusion

The conducted psycholinguistic analysis permitted substantiation of the types and forms of listening development and control. We studied two types of listening comprehension – the general meaning of the audio text and detailed meaning, which includes understanding the main content; the requested information; full or detailed understanding. These levels of comprehension do not represent a hierarchical list according to the understanding quality criterion but reflect the recipient's pragmatic goals in listening to content-factual information.

The object of control should be critical comprehension (understanding of content-conceptual and content-subtext information) comprising four components: logical-linguistic, cultural-historical, emotional-evaluative and interpretive. Critical understanding presupposes a large degree of freedom from the recipient, where the object of evaluation can only be the meaning of the text common to all recipients or a semantic invariant.

In recent years, practical studies caused changes in the approaches to listening in the study of a foreign language, as well as reconsidering the teaching of listening. Effective approaches to teaching listening should provide students with practical training in listening skills for general and professional listening purposes, depending on the student's needs and language level. The teacher should create the conditions for practical listening and motivate the students as if they need to receive information through listening to an interlocutor or having received it from alternative sources, this helps to focus on the received information and increases cognitive activities.

The motivation depends on the teacher and the material selected. Too complex or too easy material can demotivate learners. The relevance of topics also increases motivation. Internet resources with audio and especially video materials in teaching listening are gaining popularity. In the video, the students can follow the gestures and facial expressions of the speaker, which makes the process of listening easier and more interesting.

In this work, we described the main listening stages and suggest tasks for developing perception skills that can be applied to any audio text. The complex ability of speech reception includes listening as a part of a speaking activity and measures

comprehension through the communicative situation.

The main computer-assisted technologies in teaching listening and the application of the relevant multimedia programs make teaching listening at non-linguistic universities and can be used in a traditional or distance lesson as well as a source of supplementary assignments for independent studying.

KAPITEL 5 / CHAPTER 5 [5]
PRONUNCIATION AS AN IMPORTANT ASPECT OF ELT: MODERN TRENDS

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Introduction.

In the realm of second language acquisition, it is a well-known fact that pronunciation is a crucial component of communicative competence. Being able to produce and understand sounds, intonation, stress, and rhythm patterns of a language can be just as important as understanding its grammar and vocabulary. It is therefore **vital** to teach pronunciation to adult students who are learning English as a second language.

Many foreign (Brown, 1994; Cook, 2001; Fraser, 2001; Jenkins, 2000; Kelly, 2000; Crystal, 1997, Yang, 2004; Roach, 1983) and Ukrainian scholars (Kalyta, 2018; Taranenko, 2017; Kalyta, Taranenko, 2010; Sokyrska, 2020) study this important issue in their works. One of the main reasons why teaching pronunciation is essential for adult learners is that it improves their ability to communicate effectively. Even if a student knows a lot of words and can construct complex sentences, if their pronunciation is poor, they may struggle to make themselves understood, especially in those cases when pronunciation change the meaning of a word. Mispronounced words can lead to misunderstandings, and this can cause frustration and embarrassment. Moreover, when communicating with native speakers, an adult student with good pronunciation will be more easily understood and respected. Thus, teaching English pronunciation is relevant in ESP.

Another reason why teaching pronunciation is important is that it helps adult learners to become more confident in using the language. Pronunciation errors can make students feel self-conscious and hesitant to speak. However, when they are taught the correct pronunciation of words, they will feel more confident to speak and interact with others. This can lead to increased participation in class and a greater willingness to take risks in using the language.

Teaching pronunciation can also help adult learners to develop better listening skills. When students are taught to recognize and produce the sounds of a language,

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they become more attuned to the sounds of that language. This can lead to greater understanding of what is being said and help to reduce listening fatigue. In addition, by teaching students to distinguish between different sounds in a language, they become better able to identify words when they hear them, even if they are spoken quickly or in a different accent.

Another benefit of teaching pronunciation to adult learners is that it can help to improve their overall language proficiency. When students are able to produce the correct sounds, stress patterns, and intonation of a language, they are better able to use that language in a natural way. This can lead to increased fluency and greater accuracy in grammar and vocabulary. Moreover, by focusing on pronunciation, students will become more aware of the differences between their native language and the language they are learning, and this can help them to avoid making mistakes that are specific to their native language.

It is worth mentioning that one of the problems teachers face while teaching English is that pronunciation is not always included in the curriculum so teachers need to find ways to integrate it. Herrero (2014, p.21) suggests that if pronunciation is not included in the curriculum, there are still ways to incorporate it into your teaching. The first thing a teacher should do is to *identify areas of difficulty*. Observe your students' speech patterns and identify areas of difficulty, such as specific sounds or suprasegmental features like intonation or stress. This will help you target your instruction more effectively.

If teaching pronunciation is not included in the curriculum, a teacher should *integrate pronunciation practice into existing lessons and activities*. For example, have students practice reading aloud, work on pronunciation during group discussions, or incorporate pronunciation exercises into writing assignments.

Another useful thing is to *use resources*. There are many online resources available to help you teach pronunciation, such as pronunciation guides, videos, and activities. Incorporate these resources into your lessons to provide additional support to your students. *Providing students with a feedback* is also an important stage. Give your students feedback on their pronunciation and encourage them to keep practicing. You could also provide additional practice activities or refer them to outside resources.

The aspect which must be taken into consideration is the choice of the right book and other teaching materials. Thoroughly planned lesson and appropriate materials can be determinative in pronunciation teaching when a teacher has stick to the curriculum. Remember that pronunciation is an important aspect of language learning, so don't be

afraid to take the initiative and incorporate it into your teaching, even if it's not part of the curriculum.

5.1 Modern trends in English pronunciation teaching

Teaching English pronunciation has evolved considerably over the years, with the emergence of new technologies and pedagogical approaches (Couper, 2006; Field, 2005; Kolisnyk, Kornytska, Ogurtsova, Sokyrska. 2022). In recent years, the focus of English language teaching has shifted towards a more communicative and interactive approach, with an emphasis on the development of oral communication skills. This has had a significant impact on the teaching of pronunciation, with modern trends reflecting the need for a more dynamic and engaging approach to pronunciation teaching.

One of the most prominent trends in teaching English pronunciation is *the use of technology*. Advances in technology have revolutionized the way English is taught, and the teaching of pronunciation is no exception. With the use of speech recognition software, students can practice their pronunciation and receive instant feedback on their accuracy. Tools such as online dictionaries with audio pronunciations and mobile apps that offer pronunciation drills are widely available and accessible. These technologies can provide students with a more individualized learning experience, as they can practice at their own pace and receive feedback tailored to their individual needs.

Another trend in teaching English pronunciation is a greater *emphasis on communicative activities*. Rather than simply focusing on the repetition of sounds and words, teachers are now using communicative activities to create a more meaningful and interactive learning experience. For example, role-playing, debates, and discussions can be used to encourage students to speak and listen to each other, and to provide feedback on each other's pronunciation. Pronunciation can also be incorporated into project-based learning activities, where students work in groups to create presentations, podcasts or videos on a particular topic, using correct pronunciation and intonation.

A third trend is *a focus on individual needs*. Teachers are now more aware of the fact that each student has unique pronunciation needs, and they are tailoring their teaching approach accordingly. By identifying the specific areas of difficulty for each student, teachers can create customized exercises and activities to help them improve

their pronunciation. For example, some students may have difficulty with specific sounds or stress patterns, while others may struggle with intonation or rhythm. A more personalized approach can help students to focus on their individual needs and make progress at their own pace.

A fourth trend is *a greater emphasis on multilingualism*. With the increasing diversity of classrooms, teaching pronunciation has become more multilingual. Teachers are now encouraging students to embrace their multilingualism, and to use their knowledge of different languages to improve their English pronunciation. For example, a teacher may ask a student to pronounce an English word using the sounds of their native language, or to compare and contrast the pronunciation of a particular sound in English and their native language. This approach can help students to understand the differences between their native language and English pronunciation and to develop greater awareness of the subtleties of pronunciation.

A fifth trend is *the use of gamification*. Gamification refers to the use of game elements and mechanics in non-game contexts, such as education. By incorporating elements of competition, challenge, and reward, teachers can create a more engaging and motivating learning experience for students. Gamification can be used in the teaching of pronunciation through activities such as pronunciation quizzes, tongue twisters, and pronunciation games. These activities can help students to improve their pronunciation skills while having fun and being motivated to learn.

The abovementioned allows us to make a conclusion that the teaching of English pronunciation has undergone significant changes in recent years, reflecting the need for a more dynamic, interactive, and engaging approach. The trends in pronunciation teaching reflect a move towards a more personalized and communicative approach, with an emphasis on technology, individual needs, multilingualism, and gamification. These trends reflect the evolution of English language teaching and the recognition of the importance of pronunciation in developing oral communication skills. Teachers who embrace these trends are likely to create a more effective and engaging learning experience for their students, leading to greater proficiency in English pronunciation and oral communication.

5.2. Common pronunciation problems for English language learner

Ukrainian students who learn the English language often face a number of

pronunciation challenges, as English has many sounds that do not exist in their native language, as well as a complex system of stress and intonation which is different from Ukrainian. It is worth studying some of the most common pronunciation problems for English language learners.

Consonant sounds. English has several consonant sounds that are not present in Ukrainian language, such as /ð/, /w/, /r/, /ŋ/, /θ/ which can be difficult for learners to produce correctly. In English there are some consonants that can create confusion and affect intelligibility. Walker (2010, p.130) points out some of them, for example the confusion between /s/, /z/, /ʃ/ and /ʒ/, another example occurs with the sounds /tʃ/, /dʒ/, /ʒ/ and /j/. /θ/ is absent in some varieties of Spanish, it happens for example with the word "thin" / θɪn/. Sometimes it is replaced for /f/ or /s/.

Vowel sounds. English has a complex system of vowel sounds, including diphthongs (two vowel sounds that combine to form one sound), which can be difficult for learners to differentiate and produce accurately. The following sounds can cause difficulties: -/ei/-/ɛ/ ("ages" /eɪdʒs/ and "edges" /ɛdʒs/), /ʌ/ ("must" /mʌst/ or "but" /bʌt/), -/ɪ/-/i/ ("bit" /bɪt/ and "beat" /bit/), /u/-/ʊ/ ("boot" /but/ and "book "/bʊk/), etc.

Word stress. English has a system of word stress, where certain syllables in words are emphasized more than others. This can be difficult for learners to master, as the rules for word stress in English are not always predictable (Hahn, 2004).

Sentence stress: There is a difference between English and Ukrainian speech with regard to sentence stress, and because of this many meanings which are conveyed in English through sentence stress are conveyed in Ukrainian through particular words.

An important aspect is **intonation**. Walker (2010, p. 36-37) points out that there are three areas that need attention.

Pitch range. Spanish speakers use a too narrow pitch range, they keep a very restricted pitch movement over a phrase or clause.

Final falling pitch movement. It may not sound low enough. This is because Spanish speakers rarely use a slight rise before the final falling pitch, which makes the final pitch movement sound too flat.

The rise-fall seems difficult: This is because the pitch-reversal by itself is hard for learners to do, especially on short phrases or one syllable or because of shyness or self-consciousness.

Connected speech. In English, words often run together in connected speech, with sounds blending together and certain sounds being omitted. This can be difficult for learners to understand and produce accurately

Regional accents: English is spoken with many different accents around the world, which can make it difficult for learners to understand and communicate with speakers from different regions.

By identifying these common pronunciation problems, teachers and learners can focus on specific areas of pronunciation that need improvement and develop targeted strategies for addressing these challenges. With regular practice and targeted instruction, learners can improve their English pronunciation skills and become more effective communicators in English.

5.3. Reasons behind common pronunciation problems for English language learners

There are several reasons why English language learners commonly struggle with pronunciation. Here are some of the most common factors:

Native language interference. Learners' native languages often have different sound systems and pronunciation rules than English. This can make it difficult for learners to produce English sounds accurately, as they may rely on pronunciation patterns from their native language.

Lack of exposure. The amount of exposure deals with the quantity of English that learners receive. Learners who do not have regular exposure to English in real-world settings may struggle to develop their pronunciation skills. This is particularly true for learners who live in areas where English is not commonly spoken (Jennifer, Amy, Holtby, Tracey, 2011).

Limited practice. Pronunciation is a skill that requires regular practice in order to improve. Learners who do not have opportunities to practice their pronunciation skills may struggle to make progress.

The age factor. Numerous research studies indicate that learning a second language as a child can help one develop a native-like accent, whereas it can be challenging for an adult to achieve the same level of pronunciation. The majority of these studies suggest that younger individuals are more adept at perceiving the sounds of new languages and developing good pronunciation, but it is crucial to maintain exposure to the language during adulthood to avoid deterioration. Nevertheless, some studies present conflicting findings, and there are several potential interpretations and outcomes, indicating that the relationship between age and the ability to pronounce a

new language is not straightforward (Herrero, 2010, p.26).

Phonetic ability. Individuals vary in their ability to learn foreign languages, which is determined by a combination of their aptitude for oral mimicry and phonetic coding ability, also known as auditory ability. Numerous studies indicate that certain people possess superior skills in discriminating between sounds and replicating them accurately, while others may struggle in this regard. However, all human beings have an innate ability to acquire language to some extent, indicating that everyone possesses a degree of phonetic ability.

Attitude and identity. The acquisition of precise pronunciation in a foreign language is significantly influenced by factors such as identity and group affiliation. Studies suggest that individuals tend to imitate the speech patterns of those with whom they feel positively connected and share a sense of camaraderie. Thus, when people adopt the pronunciation of their language partner, it often reflects a friendly and positive attitude towards that individual.

Motivation and concern for good pronunciation. As is widely recognized, language learners display varying levels of anxiety regarding their pronunciation, with some being particularly self-conscious about their ability to articulate words correctly. These learners may interrupt their speech to seek feedback on their pronunciation accuracy. Conversely, others have a strong inclination to excel in their language skills, which serves as a form of motivation.

Lack of feedback. Learners may not receive regular feedback on their pronunciation, which can make it difficult for them to identify areas for improvement and make progress.

Fear of making mistakes. Learners may be hesitant to practice their pronunciation skills out of fear of making mistakes or being judged by others. This can prevent them from getting the practice they need to improve.

Complex sound system. English has a complex sound system, with many vowel and consonant sounds that are not present in other languages. This can make it difficult for learners to differentiate between sounds and produce them accurately.

By understanding these factors, teachers and learners can develop strategies to address common pronunciation problems and help learners make progress in their pronunciation skills. Regular practice, feedback, and exposure to English in real-world settings can all help learners improve their ability to communicate effectively in English.

5.4. Pronunciation levels and features

Teaching pronunciation requires careful attention to the different levels and features of pronunciation as it is a critical aspect of language learning. Let's systematize some of the pronunciation levels and features that are important to teach.

Phonemes are the smallest units of sound in a language, and English has 44 phonemes. It is essential to teach students the phonemes of English, as this helps them distinguish between different sounds and improve their overall pronunciation. Teachers can use various techniques, such as phonemic charts and minimal pairs, to help students practice and differentiate between sounds that may be difficult for them.

Stress and intonation are crucial features of English pronunciation. Stress refers to the emphasis placed on certain syllables or words in a sentence, while intonation refers to the rise and fall of the voice during speech. These features are essential for conveying meaning in English and can have a significant impact on how a speaker is perceived. Teachers can help students understand and practice stress and intonation through various activities such as drilling, sentence stress exercises, and intonation practice.

English has many words that contain consonant clusters, which are groups of two or more consonant sounds that appear together in a word. Teaching students how to pronounce these clusters correctly is essential to improving their English pronunciation. Teachers can use various techniques, such as modeling and repetition, to help students practice and produce these sounds accurately.

English has many vowel sounds, and some of them can be difficult for non-native speakers to produce accurately. Teaching students the different vowel sounds in English and how to produce them correctly is an essential part of teaching English pronunciation. Teachers can use various techniques, such as vowel charts and minimal pairs, to help students practice and differentiate between these sounds.

Word stress is the emphasis that is placed on a particular syllable in a word. It is essential to teach students how to identify and use word stress correctly, as it can help them to distinguish between different words that may have the same spelling but different meanings. Teachers can use various techniques, such as word stress drills and sentence stress exercises, to help students practice and produce correct word stress.

In English, words are often pronounced differently when they are spoken in a sentence than when they are spoken in isolation. Connected speech refers to the way that words are connected together in a sentence, and it can have a significant impact on

how natural a speaker sounds. Teaching students how to use connected speech is essential to improving their overall English pronunciation. Teachers can use various techniques, such as connected speech drills and listening exercises, to help students practice and produce connected speech accurately.

Finally, it is important to teach students about pronunciation variation in English. English is spoken in many different countries and regions, and there can be significant differences in pronunciation between them. Teaching students about these differences and how to adapt their pronunciation accordingly can help them to communicate more effectively with speakers from different parts of the English-speaking world. Teachers can use various techniques, such as listening to different accents and practicing different pronunciation variations, to help students improve their overall pronunciation flexibility.

The analysis of existing knowledge allows us to conclude that teaching English pronunciation requires attention to many different levels and features, including phonemes, stress and intonation, consonant clusters, vowels, word stress, connected speech, and pronunciation variation. By focusing on these areas, teachers can help students to improve their overall pronunciation and communicate more effectively in English. With consistent practice and targeted instruction, students can develop confidence in their pronunciation skills and become more effective communicators in English.

5.5. Advantages and disadvantages of teaching pronunciation online and in-person

Teaching ESL pronunciation is considered to be one of the most difficult aspects. The phonetics learning process involves three main stages, which are demonstrating to learners how to produce a sound, practicing the sounds through drilling, and providing ongoing feedback. Additionally, asynchronous learning approaches can be employed, such as utilizing online tools, instructional videos, and audio tracks to demonstrate specific sounds. Platforms like Zoom, Google Classroom, and Classtime can be used to evaluate students' pronunciation by allowing them to playback sounds or phrases, select the correct option from a list, and then repeat it themselves (Sokyrska, Buha, 2021). Also, there are many useful applications which facilitate teaching pronunciation providing clear explanation and demonstrating the right position of their tongue, lips

etc. that allows to pronounce certain sounds.

Certain English language learning platforms, such as My English Lab, offer exercises where students can listen to sentences that incorporate the grammar and vocabulary taught in the lesson, pronounce them, and then record their pronunciation. The teacher then evaluates the recording and provides feedback, which is accessible on the website and sent to the student's account. It is worth noting that the advent of online learning tools has enhanced the level of interaction between students and teaching staff.

As online lessons are becoming more and more popular nowadays, it is worth paying attention to advantages and disadvantages of teaching pronunciation online and offline.

Teaching pronunciation online has become increasingly popular in recent years, as advances in technology have made it possible to deliver high-quality pronunciation instruction through virtual platforms. Teaching English pronunciation online has its advantages.

One of the main pros is flexibility. Online instruction allows for greater flexibility in scheduling and location. Students can participate in online pronunciation lessons from anywhere with an internet connection, and can schedule sessions that fit their busy schedules.

Another important advantage is individualization. Online instruction also allows for greater individualization of instruction. Teachers can tailor their instruction to meet the specific needs of each student, providing personalized feedback on pronunciation accuracy and offering targeted instruction to address individual areas of difficulty.

Access to resources leads to wider possibilities for educators and learners. Online instruction provides students with access to a wealth of resources, including audio and video recordings, pronunciation guides, and interactive exercises. These resources can be easily shared and accessed, making it easier for students to practice and improve their pronunciation skills outside of the classroom.

Modern technologies make an immediate feedback possible. Online instruction often utilizes speech recognition software, which can provide students with immediate feedback on their pronunciation accuracy. This instant feedback can be a powerful tool for improving pronunciation, as it allows students to make adjustments and corrections in real-time.

Cost-effectiveness is worth mentioning also. Online instruction can also be more cost-effective than in-person instruction, as it eliminates the need for travel and reduces

the overhead costs associated with traditional classroom instruction.

Though, teaching pronunciation online can have such disadvantages as limited feedback when it's more difficult to provide learners with the same level of detailed feedback on their pronunciation as when working with them in person, technical difficulties such as poor internet connections or glitches in software (it can disrupt the learning process and make it more difficult to conduct effective pronunciation instruction), difficulty hearing and understanding (learners may have difficulty hearing and understanding the teacher's pronunciation due to poor sound quality or other technical issues) and limited interaction (online instruction can limit opportunities for interaction between the teacher and learners, which can make it more difficult to address individual learner needs and provide personalized feedback).

Overall, teaching pronunciation online offers numerous advantages, including greater flexibility, individualization, access to resources, immediate feedback, and cost-effectiveness. As technology continues to evolve and improve, online instruction is likely to become an increasingly popular and effective way to teach English pronunciation.

Though, teaching pronunciation offline also has its benefits. Teaching pronunciation offline, or in-person, has many advantages that cannot be replicated in online instruction. While online instruction has its own set of benefits, face-to-face interaction between teachers and students can be invaluable when it comes to improving pronunciation.

Personal interaction. In-person instruction allows for personal interaction between teachers and students. Teachers can observe their students' body language, facial expressions, and other nonverbal cues, which can provide valuable insight into how well students are understanding and retaining the material.

Really immediate feedback in contrast to online instruction. Offline instruction also allows for immediate feedback, as teachers can correct students' pronunciation errors in real-time. This can be especially important when it comes to correcting subtle pronunciation differences, which can be difficult to pick up on in recordings or through speech recognition software.

Authenticity. In-person instruction can also provide a more authentic learning experience, as students are exposed to the natural rhythms and intonations of spoken English. This can help students develop a more natural-sounding accent and better understand the nuances of English pronunciation.

Group interaction. In-person instruction also allows for group interaction, which

can be helpful for practicing pronunciation in a naturalistic context. Students can engage in role-playing activities, conversations, and other interactive exercises that allow them to practice their pronunciation skills in a supportive and collaborative environment.

Cultural immersion. Finally, in-person instruction can provide students with a cultural immersion experience that is difficult to replicate online. Students can learn not only the pronunciation of English words, but also the cultural context in which those words are used.

Combining online and offline learning tools while teaching phonetics can provide several benefits that can help improve learners' understanding and mastery of the subject. Here are some reasons why it is important to integrate both. Audio and visual input. Online tools can provide learners with access to multimedia resources such as videos, audio files, and interactive activities, which can enhance their understanding of phonetics concepts. Offline tools, such as textbooks and workbooks, can provide visual and written input to complement the online resources, creating a more well-rounded learning experience. Real-world examples. Offline tools can provide learners with real-world examples of how phonetics concepts are used in communication. Combining offline tools with online resources can help learners apply what they have learned in real-world situations, improving their understanding and mastery of the subject. Individualized practice. Online tools can provide learners with individualized practice opportunities, such as quizzes and self-assessment activities. Offline tools, such as group activities and peer feedback, can provide learners with opportunities for collaborative learning and support. Accessibility. Online tools can make phonetics resources accessible to learners with disabilities or those who live in remote areas. Combining online and offline tools can help bridge the digital divide and ensure that everyone has access to quality phonetics education. Flexibility. By combining online and offline tools, learners can have the flexibility to choose how, when, and where they want to learn. This allows learners to personalize their learning experience and can help improve their motivation and engagement.

Thus, while online instruction has its own set of benefits, teaching pronunciation offline can provide students with valuable personal interaction, immediate feedback, an authentic learning experience, group interaction, and a cultural immersion experience. Both online and offline instruction can be effective ways to teach English pronunciation, and the choice between the two will ultimately depend on the specific needs and preferences of the teacher and the students.

5.6. Best practices for teaching English pronunciation

The English language has many variations, and it is essential to have a good understanding of the pronunciation rules to communicate effectively. Pronunciation is one of the key components of spoken language, and it is crucial to teach learners how to speak English correctly. In our work some of the best practices for teaching English pronunciation were analyzed.

Focus on Sounds. The first step in teaching English pronunciation is to focus on the sounds of the language. English has 44 sounds or phonemes, and learners need to master these sounds to communicate effectively. Teachers can use various techniques such as articulation exercises, showing the correct mouth and tongue positions, diagrams or pictures, or playing recordings of native speakers.

It is also essential to teach learners how to distinguish between similar sounds, such as /b/ and /p/, or /v/ and /f/. One way to do this is by using minimal pairs, which are pairs of words that differ by only one sound, such as "bat" and "pat", or "van" and "fan".

Use Phonetics and IPA. Phonetics is the study of speech sounds, including their production and transcription. The International Phonetic Alphabet (IPA) is a system of symbols that represents the sounds of English. By using phonetics and the IPA, teachers can help learners understand the correct pronunciation of words and practice the sounds of English more effectively.

The IPA is particularly useful when it comes to teaching the pronunciation of words that are spelled differently than they are pronounced, such as "through," "plough," or "bough." It is also essential to teach learners how to use the IPA and provide them with opportunities to practice with it.

Teach Stress and Intonation. Stress and intonation are critical elements of English pronunciation that significantly affect meaning and communication.

As Kenworthy (1987, p.180) says, if learners do not use these English features or if they use different ways of linking words, it will be really difficult for English listeners to properly identify the phrases.

The use of stress. Stress refers to the emphasis placed on a particular syllable or word in a sentence. In English language, syllables can be perceived differently based on factors such as the volume and duration of the vowel. Learners need to be cognizant of the importance of stressing one syllable over another and avoiding placing stress on the incorrect syllable, as doing so may lead to difficulties in understanding the word by

the listener.

The use of intonation. Intonation refers to the rise and fall of pitch in a sentence, conveying emotions, attitudes, and emphasis. In English, listeners receive information from the pitch of the voice that the speaker produce s. Intonation is an important weapon for intelligibility, because it is used to transmit intentions.

The use of rhythm: English language has a distinctive rhythm that listeners expect to hear. Learners should bear in mind that English requires a pattern of alternating between stressed and unstressed syllables, with stressed syllables falling on a consistent beat.

By teaching learners how to use stress and intonation, teachers can help them communicate more effectively and accurately. Exercises such as sentence stress and rhythm exercises can be effective in teaching stress and intonation. To help learners grasp the concept of intonation, teachers can also use rising and falling intonation patterns in questions and statements, or use contrastive stress to highlight different meanings.

Provide Opportunities for Practice. Practice is a vital aspect of English pronunciation teaching. Learners need to practice their pronunciation consistently to improve their accuracy and fluency. Teachers can provide opportunities for practice by having learners read aloud, repeat after the teacher, practice dialogues with a partner, or practice listening and repeating phrases from recordings. It's also essential to provide homework assignments that focus on pronunciation practice.

To make pronunciation practice more engaging, teachers can also use games, role plays, and other interactive activities that encourage learners to speak in English and practice their pronunciation in context.

Use Authentic Materials. Authentic materials, such as songs, videos, and podcasts, can be a valuable tool in English pronunciation teaching. Learners can listen to authentic English speakers and practice mimicking their pronunciation. Teachers can use these materials to provide listening comprehension exercises that also focus on pronunciation. Learners can transcribe dialogues or repeat phrases from songs, for instance.

Using authentic materials also exposes learners to different accents and dialects, which can help them develop a more nuanced understanding of English pronunciation and improve their listening skills.

Provide Feedback. Providing feedback is essential in English pronunciation teaching. Teachers need to provide students with specific feedback on their

pronunciation and offer suggestions for improvement. Feedback can include pointing out specific sounds that need improvement, demonstrating the correct mouth and tongue positions, or providing examples of how to use stress and intonation correctly. It's essential to provide feedback regularly and consistently.

Encourage self-reflection. Encouraging self-reflection is an effective way to help students improve their pronunciation. Teachers can provide opportunities for students to record themselves speaking and listen to their own pronunciation. Students can compare their recordings to native speakers and identify areas that need improvement. Teachers can also encourage students to reflect on their progress over time and set goals for improvement.

Make it fun. English pronunciation teaching can be a fun and engaging process. Teachers can use various games, tongue twisters, and other fun activities to make pronunciation practice more enjoyable. This approach can help students stay motivated and engaged in their pronunciation practice.

Cater to different learning styles. Students learn differently, so it's essential to cater to different learning styles when teaching English pronunciation. Some students may be visual learners and benefit from diagrams and pictures, while others may learn best by listening and repeating after the teacher.

Effective classroom management is key to keeping students engaged and active throughout the lesson. Pair and group work can foster interaction and enhance students' interest in the activities. Using gestures, voice, and eye contact can help to establish a welcoming atmosphere throughout the lesson. Utilizing visual aids, such as pictures in the introductory activity, can capture students' attention right from the start. The teacher plays different roles during each stage of the lesson to assist students in successfully completing the tasks. During the practice stage, students receive necessary support, while during the production stage, monitoring can help identify and address any difficulties with the activity. Grouping weaker students with stronger ones can help the former complete tasks more effectively. Given the potentially large class sizes, splitting students into groups is extremely beneficial for improving monitoring and providing assistance (Sokyrska, Buha, 2021).

My English Lab platform offers homework activities to enhance speaking and pronunciation skills. These tasks are evaluated by the teacher, and the feedback provided to students helps them identify their mistakes and areas that need improvement. One of the activities includes listening to sentences with relevant vocabulary and grammar, followed by mimicking the sentence. The students' speech is

recorded and sent to the teacher for evaluation and feedback.

5.7. Types of exercises to master English pronunciation

Teaching English pronunciation is a crucial aspect of language learning, and there are several exercises that teachers can use to help their students improve their English pronunciation skills. In this text, we will explore some of the best exercises that teachers can use to teach English pronunciation.

Minimal pairs. A minimal pair is a pair of words that differ by only one sound, such as "cat" and "bat" or "ship" and "sheep." This exercise is effective for teaching students to differentiate between similar sounds in English. Teachers can provide students with a list of minimal pairs and ask them to practice saying each word pair correctly. This exercise can be done in pairs, where one student says a word, and the other student must repeat the word using the correct pronunciation.

Tongue twisters. Tongue twisters are phrases that are difficult to say because they contain many similar sounds or difficult combinations of sounds. This exercise is an enjoyable way to practice pronunciation, and it can help students improve their ability to produce certain sounds accurately. Teachers can provide students with a list of tongue twisters and ask them to practice saying each one several times. This exercise can also be done in pairs, where one student says a tongue twister, and the other student must repeat it using the correct pronunciation.

Stress and Intonation Exercises. Stress and intonation are essential aspects of English pronunciation, and exercises that focus on these features can be very effective. Teachers can provide students with a list of sentences and ask them to practice saying each sentence with different stress and intonation patterns. This exercise can help students develop a better understanding of how stress and intonation can change the meaning of a sentence. For example, the sentence "I didn't say he stole the money" can have different meanings depending on the stress and intonation patterns used.

Connected Speech exercises. Connected speech is the way that words are pronounced together in a sentence, and exercises that focus on connected speech can help students improve their overall fluency and naturalness in English. Teachers can provide students with a list of sentences and ask them to practice saying each sentence with natural connected speech patterns. This exercise can also be done in pairs, where one student says a sentence, and the other student must repeat it using the correct

connected speech patterns.

Vowel and Consonant Drill. Vowels and consonants are crucial aspects of English pronunciation, and drills that focus on these sounds can be very effective. Teachers can provide students with a list of words that contain difficult vowels or consonant clusters and ask them to practice saying each word several times. This exercise can also be done in pairs, where one student says a word, and the other student must repeat it using the correct vowel or consonant sounds.

Pronunciation Videos and Audio Materials. There are many excellent online resources that provide videos and audio materials to help students improve their English pronunciation. Teachers can use these resources to supplement their own lessons and provide students with additional practice opportunities. This exercise can be done in the classroom or as homework, where students watch or listen to the pronunciation videos or audio materials and practice repeating the words and phrases.

Role-playing Exercises. Role-playing exercises can be an effective way to help students practice their English pronunciation in a real-world context. Teachers can provide students with scenarios and ask them to role-play different situations, such as ordering food in a restaurant or making a phone call. This exercise can be done in pairs, where one student plays the role of the customer, and the other student plays the role of the waiter or the person on the other end of the phone.

The examples of exercises for English pronunciation instruction provided below can be used to improve students' pronunciation skills.

Phonemic bingo. Each student receives a bingo card with six words that contains the target phonemes. Then, students listen to words with the target sounds. Students have to recognise them and cross out the words that they have in their cards.

Memory game. In this game the class is divided in groups of four students. Each group receives a set of cards to play memory game. They have to look for the word and its pronunciation. They play in turns, if one student find out a pair he or she will keep both cards and will continue looking for more. The student that at the end of the game has more pairs of cards is the winner.

Stand up. Each student receives a list with four words containing the same sound. Teacher pronounce one word and students have to recognise the sound and guess if they have it in their list, if they have it they have to stand up.

Resources for Teaching English pronunciation online. Teaching English pronunciation online can be a challenging task, but there are many online resources available that can help teachers improve their instruction and help learners improve

their pronunciation skills. There are many useful and convenient resources for mastering learners' pronunciation skills. We analyzed ten popular services for teaching English pronunciation online used worldwide.

Pronunciation Power is a website that offers a range of interactive exercises and activities for learners to practice their English pronunciation. The website has a large library of lessons that cover various aspects of English pronunciation, such as intonation, stress, and vowel sounds. Teachers can also use the website's tools to create customized lessons and exercises for their learners.

Speechling is a website that offers free and paid English pronunciation lessons for learners of all levels. The website offers a range of exercises and activities, including listening and speaking exercises, to help learners improve their English pronunciation skills. Teachers can also use the website to track their learners' progress and provide personalized feedback.

English Central is a website that offers a range of video-based pronunciation lessons and exercises for learners. The website features a library of videos that cover various aspects of English pronunciation, such as vowel sounds, consonant sounds, and word stress. Teachers can also use the website to create customized lessons and exercises for their learners.

YouTube channels offer a wide range of English pronunciation lessons and exercises for learners. YouTube channel feature videos that cover various aspects of English pronunciation, such as intonation, stress, and vowel sounds. Teachers can also use the channel's videos to supplement their lessons and provide additional resources for their learners.

The British Council is a website that offers a range of free English pronunciation lessons and exercises for learners of all levels. The website features a library of lessons and activities that cover various aspects of English pronunciation, such as intonation, stress, and word stress. Teachers can also use the website's tools to create customized lessons and exercises for their learners.

FluentU is a website that offers a range of English pronunciation lessons and exercises for learners. The website features a library of videos and exercises that cover various aspects of English pronunciation, such as intonation, stress, and rhythm. Teachers can also use the website to create customized lessons and exercises for their learners

ELSA Speak is a website that offers a range of English pronunciation lessons and exercises for learners. The website uses artificial intelligence technology to provide

personalized feedback on learners' pronunciation, intonation, and stress. Teachers can also use the website to track their learners' progress and provide additional resources for their learners.

American English Pronunciation is a website that offers a range of English pronunciation lessons and exercises for learners. The website features a library of videos and exercises that cover various aspects of American English pronunciation, such as intonation, stress, and accent reduction. Teachers can also use the website to create customized lessons and exercises for their learners.

ESL Pronunciation Lessons is a website that offers a range of English pronunciation lessons and exercises for learners. The website features a library of lessons and activities that cover various aspects of English pronunciation, such as intonation, stress, and phonetics. Teachers can also use the website to create customized lessons and exercises for their learners.

Oxford Online English is a website that offers a range of English pronunciation lessons and exercises for learners. The website features a library of videos and exercises that cover various aspects of English pronunciation, such as intonation, stress, and connected speech. Teachers can also use the website to create customized lessons and exercises for their learners.

5.8. Incorporating pronunciation into online lessons

As online learning becomes more prevalent, incorporating pronunciation exercises into online language lessons has become increasingly important. While there are some challenges to teaching pronunciation online, there are many exercises that can be used to help learners develop their speaking skills and improve their overall communication. Here are some examples of exercises that can be used to incorporate pronunciation into online language lessons:

Pronunciation Videos. Pronunciation videos are a great way to help learners practice their pronunciation in an online setting. Teachers can create short videos that focus on specific sounds or words in the language they are teaching, or they can use existing videos. For example, the BBC Learning English website has a series of pronunciation videos that cover various topics such as vowel sounds, consonant sounds, and intonation.

Voice Recording Assignments. Voice recording assignments are a great way to

get learners practicing their pronunciation on their own time. Teachers can assign learners to record themselves speaking, focusing on specific sounds or words. Learners can then submit their recordings to the teacher for feedback. This exercise not only helps learners develop their pronunciation skills but also provides them with an opportunity to practice speaking in a low-pressure environment.

Online Pronunciation Quizzes. Online pronunciation quizzes are a fun and engaging way for learners to test their knowledge of pronunciation. Teachers can create quizzes that focus on specific sounds or words, or they can use existing quizzes. Quizlet, for example, has a variety of pronunciation quizzes for different languages. This exercise allows learners to practice their pronunciation and receive immediate feedback on their performance.

Virtual Tongue Twisters. Tongue twisters are a classic pronunciation exercise, and they can be easily adapted for online learning. Teachers can create virtual tongue twisters by using Google Slides or other presentation tools. Learners can then practice the tongue twisters individually or in groups, repeating them several times to improve their pronunciation. This exercise not only helps learners develop their pronunciation skills but also promotes collaboration and communication.

Online Shadowing. Shadowing is a technique where learners repeat what they hear as closely as possible, ideally with a native speaker's recording. This exercise can be easily adapted for online learning by using a video conferencing platform such as Zoom or Skype. The teacher can share their screen and play a recording of a native speaker, and learners can then repeat what they hear. This exercise helps learners develop their pronunciation and listening skills by imitating native speakers' intonation and rhythm.

Thus, incorporating pronunciation exercises into online language lessons is essential for learners to develop their speaking skills, improve their communication, and build their confidence. Pronunciation videos, voice recording assignments, online pronunciation quizzes, virtual tongue twisters, and online shadowing are just a few examples of exercises that teachers can use to incorporate pronunciation into their online lessons. By using these exercises, teachers can help learners become more comfortable with the sounds of the language they are learning and improve their overall communication abilities, even in an online setting.

5.9. Why is it important to teach all language aspects

Language is a complex system that involves multiple interrelated components, and each of these components plays an essential role in communication. As such, it is crucial to teach all language aspects, including reading, writing, speaking, listening, grammar, vocabulary, and pronunciation, to ensure that learners develop a comprehensive understanding of the language they are learning.

One of the primary reasons why it is important to teach all language aspects is that they are all necessary for effective communication. For example, reading and writing enable learners to exchange written messages, while speaking and listening are crucial for oral communication. Grammar and vocabulary provide the structure and meaning of language, and pronunciation ensures that the message is conveyed accurately. By neglecting any one of these aspects, learners may struggle to express themselves clearly and effectively, which can impede their ability to communicate with others.

Another reason why it is important to teach all language aspects is that they are all necessary for language proficiency. Proficiency in a language requires a well-rounded understanding of all its aspects, as neglecting any one of them can lead to gaps in learners' understanding and hinder their ability to communicate effectively. For example, a learner who has a strong grasp of grammar and vocabulary but struggles with pronunciation may find it difficult to be understood by native speakers of the language.

Teaching all language aspects is also essential for real-world language use. In most situations, learners will need to read, write, speak, listen, and understand grammar and vocabulary to communicate effectively. For example, in a business context, learners may need to read and write emails, speak on the phone, and participate in meetings. They may also need to understand the grammar and vocabulary specific to their industry or profession.

Moreover, teaching all language aspects is crucial for learners to develop cultural understanding. Grammar and vocabulary, for example, can provide insights into the cultural norms and values of the language. By learning about the language's culture, learners can develop a deeper appreciation and understanding of the language, its speakers, and their way of life.

Lastly, proficiency in all language aspects is necessary for professional development. In many professions, effective communication is crucial for success, and

proficiency in all language aspects can enhance learners' career opportunities. For example, a person working in an international business environment may be required to speak multiple languages fluently, and their proficiency in all language aspects will be a significant asset to their employer.

In conclusion, teaching all language aspects is essential for effective communication, language proficiency, real-world application, cultural understanding, and professional development. By providing learners with a comprehensive understanding of the language, they are learning; they can communicate more effectively, better understand the culture of the language, and improve their career prospects.

Conclusions

Teaching pronunciation is an essential aspect of language teaching, especially for adult learners. It can improve their ability to communicate effectively, increase their confidence, develop better listening skills, and improve their overall language proficiency. As language teachers, we must emphasize the importance of pronunciation and ensure that it is given the attention it deserves in our teaching practice.

In general, teaching English pronunciation is shifting towards an approach that is more active, participatory, and personalized. Teachers are using technology, interactive exercises, and tailored instruction to make learning more interesting and impactful for students.

Incorporating pronunciation into language lessons is essential for effective communication and language acquisition. By using audio materials, phonetic symbols, repetition and practice, feedback, and games and activities, teachers can help students develop their pronunciation skills and become more confident in their ability to communicate in the target language.

Students of technical universities need to learn English pronunciation because English is the primary language of international communication, especially in the fields of science, engineering, and technology. Technical students need to be able to communicate effectively with colleagues, clients, and partners from around the world.

In order to communicate effectively, technical students must be able to articulate English sounds accurately and speak with clear pronunciation. This ensures that they can convey their ideas and thoughts clearly and be understood by others.

Moreover, learning English pronunciation can also help technical students in their future careers as it can enhance their confidence when communicating with people from different cultural backgrounds, leading to more successful collaborations, and career advancement opportunities.

Therefore, learning English pronunciation is an essential part of the technical education process, as it can improve a student's ability to communicate effectively in the international arena and further their professional development.

To effectively teach pronunciation to students from diverse backgrounds in non-English speaking countries, the teacher must possess ample knowledge and preparedness. It is crucial for the teacher to understand the nuances of English pronunciation and be able to communicate this understanding to the students. The teacher's expertise is pivotal in ensuring that the students are able to accurately learn and apply English pronunciation.

It is necessary to pay attention to teaching all English language aspects to make the learning process effective. Teaching all language aspects is essential for effective communication, language proficiency, real-world application, cultural understanding, and professional development.

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