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INTERACTIVE LEARNING IN THE AGE OF GLOBALIZATION: THE FLIPPED CLASSROOM MODEL FOR ENGLISH LANGUAGE LEARNING

Modern education is undergoing significant changes caused by digitalization and the introduction of innovative pedagogical technologies. One of these technologies is the Flipped Classroom learning model, which reverses the traditional teaching process, making it more interactive and tailored to the individual needs of students.

The use of the Flipped Classroom model in teaching English is particularly relevant. In the context of globalization, English has become not only a means of communication, but also a key to accessing the world's educational and professional resources. In Kazakhstan, where much attention is paid to the study of foreign languages, especially in the framework of the Digital Kazakhstan program, the introduction of an inverted classroom can increase students' motivation, improve their learning outcomes and prepare them for successful integration into the international community.

However, in Kazakhstan, there is a lack of research on the use of the Flipped Classroom in the context of teaching English. This highlights the need to analyze existing experience and develop recommendations for educational institutions in the country.

The purpose of this study is to analyze the possibilities and effectiveness of using Flipped Classroom technology in English lessons, as well as to develop recommendations for its implementation, taking into account national and cultural characteristics. The results of the study contribute to the improvement of foreign language teaching methodology in Kazakhstan and to the development of learners' independent learning skills.

Keywords: Flipped classroom, digitalization, English language teaching, innovative educational technologies.

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Жаһандану дәуіріндегі интерактивті оқыту: ағылшын тілін үйренуге арналған төңкерілген сынып моделі

Қазіргі заманғы білім беру цифрландыру мен инновациялық педагогикалық технологияларды енгізуден туындаған елеулі өзгерістерді бастан кешуде. Осындай технологиялардың бірі – дәстүрлі оқыту процесін аударып, оны интерактивті және оқушылардың жеке қажеттіліктеріне бейімдейтін «төңкерілген сынып» оқыту моделі (Flipped Classroom).

Ағылшын тілін оқытуда Flipped Classroom моделін қолдану әсіресе өзекті. Жаһандану жағдайында ағылшын тілі қарым-қатынас құралы ғана емес, сонымен қатар әлемдік білім беру және кәсіби ресурстарға қол жеткізудің кілті болды. Әсіресе Цифрлық Қазақстан, бағдарламасы аясында шет тілдерін үйренуге көп көңіл бөлінетін Қазақстанда төңкерілген сыныпты енгізу оқушылардың ынтасын арттыруға, оларды оқыту нәтижелерін жақсартуға және оларды халықаралық қоғамдастыққа табысты кірігуге дайындауға мүмкіндік береді.

Алайда Қазақстанда ағылшын тілін оқыту контекстінде төңкерілген сыныпты қолдануға арналған ғылыми зерттеулердің жетіспеушілігі бар. Бұл қолданыстағы тәжірибені талдау және елдің білім беру мекемелері үшін ұсыныстар әзірлеу қажеттілігін көрсетеді.

Бұл зерттеудің мақсаты ағылшын тілі сабақтарында Flipped Classroom технологиясын қолданудың мүмкіндіктері мен тиімділігін талдау, сондай-ақ ұлттық және мәдени ерекшеліктерді ескере отырып, оны енгізу бойынша ұсыныстар әзірлеу болып табылады. Зерттеу нәтижелері Қазақстандағы шет тілін оқыту әдістемесін жетілдіруге және білім алушылардың дербес оқу дағдыларын дамытуға үлес қосады.

Түйін сөздер: Flipped classroom, цифрландыру, ағылшын тілін оқыту, инновациялық білім беру технологиялары.

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**Интерактивное обучение в эпоху глобализации:
модель перевернутого класса для изучения английского языка**

Современное образование переживает значительные изменения, вызванные цифровизацией и внедрением инновационных педагогических технологий. Одной из таких технологий является модель обучения «перевернутый класс» (Flipped Classroom), которая переворачивает традиционный процесс преподавания, делая его более интерактивным и адаптированным к индивидуальным потребностям учащихся.

Особенно актуально применение модели Flipped Classroom в преподавании английского языка. В условиях глобализации английский стал не только средством общения, но и ключом к доступу к мировым образовательным и профессиональным ресурсам. В Казахстане, где уделяется большое внимание изучению иностранных языков, особенно в рамках программы Цифровой Казахстан, внедрение перевернутого класса позволяет повысить мотивацию учеников, улучшить результаты их обучения и подготовить их к успешной интеграции в международное сообщество.

Однако в Казахстане существует недостаток научных исследований, посвященных применению перевернутого класса в контексте преподавания английского языка. Это подчеркивает необходимость анализа существующего опыта и разработки рекомендаций для образовательных учреждений страны.

Целью данного исследования является анализ возможностей и эффективности применения технологии Flipped Classroom на уроках английского языка, а также разработка рекомендаций по ее внедрению с учетом национальных и культурных особенностей. Результаты исследования вносят вклад в совершенствование методики преподавания иностранных языков в Казахстане и развитие у обучающихся навыков самостоятельного обучения.

Ключевые слова: Flipped classroom, цифровизация, преподавание английского языка, инновационные образовательные технологии.

Introduction

The development of digital technologies within the educational environment has created new opportunities for optimizing the efficiency of teaching and learning processes. Among these innovations, the Flipped classroom model has demonstrated considerable effectiveness in international educational contexts. However, its successful implementation in Kazakhstan necessitates careful consideration of the country's cultural and educational characteristics, including the degree of digital infrastructure in schools, the readiness of teachers to use new technologies, and differences in the level of motivation of students (Mulenga, Shilongo, 2025).

For Kazakhstan, where English plays an important role in the educational and professional spheres, the introduction of Flipped Classroom can be a strategically important step. Modern challenges, such as the need to prepare students for global competition and ensure their access to international educational resources, make the use of this model particularly relevant.

The Digital Kazakhstan program provides a solid foundation for introducing modern technologies into the national education system. It aims to bridge

the digital divide between urban and rural schools, improve infrastructure, and train teachers to use digital tools. Such initiatives create favorable conditions for adapting the Flipped classroom model at the national level.

From the point of view of teaching English, using Flipped Classroom offers a number of advantages:

- students can learn the basic elements of the language (grammar, vocabulary, pronunciation) at a convenient time, which increases their independence and responsibility;
- the classroom provides more time for active practice, including discussion, role-playing, and team-based problem solving, which contributes to the development of communication skills;
- teachers have the opportunity to individualize the approach to each student, identifying and eliminating gaps in knowledge.

International studies show that the use of the Flipped Classroom in English teaching contributes to a significant improvement in results. For example, in US universities, students who follow this model show a higher level of mastery of complex grammatical structures and confidence in using the language in practice. In Asian countries such as Chi-

na and South Korea, the Flipped Classroom is used to increase student engagement and improve their speaking skills.

At the same time, there is a need to adapt international experience to the specifics of Kazakhstan's education. For example, for rural schools where Internet access is limited, offline solutions can be developed, such as using pre-uploaded videos and printed materials for self-study.

Despite the obvious advantages, implementing an inverted class model involves a number of challenges:

- technical barriers. Many schools in Kazakhstan, especially in rural areas, lack access to modern technologies and high-speed Internet;
- teacher training. Successful implementation of the model requires advanced training for teachers, especially in digital content creation and interactive lesson management;
- motivation of students. Some students may have difficulty completing independent tasks, which requires the development of additional motivational strategies.

However, these challenges can be addressed through a comprehensive approach that includes infrastructure improvements, teacher training, and student support programs.

Materials and methods

To demonstrate the effectiveness of Flipped Classroom, a study was conducted in two high schools. The study participants included 9th grade students from both schools, where both classes averaged about 25 students. The duration of the experiment, where the classes were offered the FC model, lasted 8 weeks. To complete the picture, we added additional methods of analysis used in evaluating performance, as well as developed the idea of qualitative research (interviews and focus groups).

1. Research design. Quasi-experiment: instead of random distribution of students, we used ready-made classes. The experimental groups mastered English using the inverted learning model, while the control groups mastered it traditionally.

Study period: 8 weeks – the optimal period to avoid overloading the academic year and observe changes in academic performance.

Assessment: entrance test (before the experiment), intermediate mini-tests (every 2 weeks), final test (after the experiment).

2. Additional tools. Focus groups with teachers: after the experiment, group discussions were held

(5-6 teachers each), where questions were asked about the difficulties, advantages, and personal feelings of implementing FC.

Interviews with students (semi-structured): 15-20 students from experimental groups (different classes), where it was clarified what exactly they liked/disliked, which sections caused the greatest difficulties and why.

Observation lessons: the researcher attended several classes, recording the level of activity, the number of questions asked, and the teacher's use of interactive tools (Kahoot, Quizlet).

3. Advanced Results analysis. The final test showed that the average performance of the experimental classes is higher by 7-8 points (out of 100).

Focus groups revealed that teachers find the biggest challenge is that not all students are willing to spend time at home watching videos.

Interviews with students showed that 74% of respondents (from the experimental group) admit that at first it was difficult to get used to independent work, but then they felt interested and began to ask more questions in the lesson.

Research objectives:

- compare English language performance indicators for groups using Flipped Classroom and control groups (traditional learning);
- determine the level of student and teacher satisfaction;
- study the main obstacles in implementing the method.

Literature review

The concept of the Flipped Classroom, also known as reverse learning, arose from the need to maximize the use of time for face-to-face classes. In traditional models of education, the main focus is on direct classroom instruction and homework, while an inverted classroom inverts this sequence.

The first ideas that later developed into the Flipped Class (FC) concept date back to the 1970s. B. Bloom's taxonomy (1956) proposed dividing students' cognitive activity into low-level (memorization, understanding) and high-level (analysis, synthesis, evaluation) processes. Based on this, it was suggested that the theoretical perception of the material should be carried out outside of face-to-face classes in order to spend classroom time on more complex activities (in-depth practice, discussions, project work).

The most notable example of this division in practice was experimentation in the field of distance

learning, when teachers recorded video lectures and sent them to students on cassettes or CDs. However, the use of such methods remained spot-based and depended on the availability of technical means (Sanakoeva, 2024).

The introduction of ideas from Jonathan Bergmann and Aaron Sams, chemistry teachers from Colorado (USA), gave a serious impetus to the spread of Flipped Classroom in 2007. Their goal was purely practical: to help students who missed lessons quickly recover the missing material. To do this, they recorded video lectures and uploaded them to the network, allowing students to study the material at home. At the same time, classroom time was freed up for questions, practical experiments, and interaction between students (Bergmann, Sams, 2012).

This approach not only increased the level of understanding of the material, but also solved the problem of missing classes. Wide access to high-speed Internet and mobile devices in the mid-2000s made it possible to increase the use of video content in education (Sargent, Casey, 2020).

Platforms like YouTube, Vimeo, and Khan Academy became the main channels through which video tutorials were distributed around the world.

- khan Academy (Salman Khan) demonstrated how free video tutorials can significantly expand access to education and serve as an ideal base for the Flipped Classroom methodology;

- moodle, Edmodo, Canvas-learning management systems (LMS) that allow teachers to create electronic courses, fill them with videos, tests, tasks, and communicate with students;

- social networks (Facebook, Twitter, WeChat) have also become an additional means of distributing educational content and organizing discussions (Sanz-Angulo et al., 2025).

The idea came up to adapt the Flipped Classroom stages to specific disciplines, age groups, and educational contexts. The distribution of ideas in different countries was as follows:

1. The United States is the leader in the number of studies and projects related to inverted learning.

2. China-actively implements the inverted class, combining it with gamification and design work.

3. South Korea-use the Flipped Classroom method when preparing for English language exams, as well as in university programs.

4. European countries-in France, Finland, and Germany, this model is combined with constructivist practices that encourage research.

5. Kazakhstan-implementation follows the line of digitalization of education and modernization of the educational process, but requires taking into account local specifics and infrastructure constraints (Abdullayevna, 2025).

Despite the massive interest in Flipped Classroom, there is also criticism:

- increased workload for teachers to create high-quality video content and activities;

- uneven access to digital technologies among students, especially in rural areas;

- lack of motivation in some groups of students to study independently before the lesson;

- limited teaching experience and lack of mass professional development programs for teachers specifically based on Flipped Classroom (Zainuddin, Halili, 2016).

In the early stages of implementing the inverted classroom, many teachers complained about the increased workload, as well as students' dependence on technology. Over time, these challenges have been addressed through institutional support, teacher training courses, and investment in educational infrastructure (for example, through the Digital Kazakhstan program). In addition, localized materials are created that allow you to take into account cultural and linguistic features.

Despite these points, the Flipped Classroom concept has evolved in the 21st century. Modern researchers and practitioners (2020s) see Flipped Classroom not just as "inverted lessons", but as a holistic pedagogical strategy focused on the development of critical thinking, collaborative skills and student independence (Castellano-Beltran et.al., 2025).

Increasingly, Flipped Classroom is combined with:

- gamification (elements of gamification) through the Kahoot, and Quizizz platforms;

- microlearning (short training modules that are easy to review and master on the go), which can usually be found in online courses;

- adaptive learning, where the system itself adapts to the pace and level of the student;

- MOOCs (mass online courses) integrated into training programs (Ashmarina, Nikulina, 2017).

Thus, the history and evolution of Flipped Classroom is closely linked to the development of pedagogy, digital technologies, and society's demands for new forms of learning. This method successfully combined classical ideas about the need to individualize the educational process with the opportunities provided by the modern digital environment.

According to these approaches, students become active subjects of learning, choose the time and pace of learning information themselves, and the teacher acts as a moderator of the process. That is why the emergence of online platforms and video hosting sites has played a crucial role: previously, “inverted lectures” were possible only with special video cassettes or CDs, the distribution of which required time and money. In the 2000s, when broadband Internet became available in many countries, the concept of Flipped Classroom flourished, as it became technically easier to shoot videos (even on a regular phone), post them on available resources (YouTube, SchoolTube, TeacherTube) and instantly share them with students.

At the same time, webinar and virtual classroom technologies were being developed, which allowed some schools and universities to supplement Flipped Classroom with synchronous online meetings (Zoom, Adobe Connect, etc.), opening up opportunities for interactive discussions and consultations (Tondeur et al., 2025).

Developing, Flipped Classroom went beyond one specific pedagogical model. There are variations like “Flipped Mastery”, “Gamified Flipped Classroom” and “Flipped Learning 3.0”. Despite this, critics point to a number of unresolved issues. In particular, socio-economic inequality can lead to the fact that some students do not have constant access to a computer or the Internet, which complicates the preparation for the lesson. Research also shows that not all teachers are ready to switch to a new model, as they need not only to learn how to work with

digital technologies, but also to rebuild the teaching methodology, be able to ask questions, encourage discussions and teamwork. In recent years, the importance of metasubject skills and socio-emotional learning has been increasingly emphasized. The Flipped Classroom model promotes skills such as self-organization, responsibility for your own learning, and teamwork. Students learn to think critically about information, create their own projects, and interact with fellow students in the process of finding solutions (Goedhart et al., 2019).

In the context of teaching English, the history of Flipped Classroom development clearly shows that the main emphasis is placed on the transition from passive consumption of information (vocabulary, grammar) to active communication practice and the creation of authentic communication situations. So, students can pre-view video tutorials about grammatical constructions and lexical units, and in the classroom, the teacher organizes games, discussions, and dialogues, which makes the lesson as rich as possible.

Thus, we can conclude that the origins of Flipped Classroom are rooted in classical pedagogical theories, but this model really flourished due to the rapid development of the Internet and digital technologies. Gradually, it has evolved from “video tutorials for housewives” to one of the most discussed pedagogical innovations of recent decades, with flexibility, efficiency and the ability to adapt to different national and cultural conditions.

Here are some of the many benefits of Flipped Classroom training (see Figure 1):

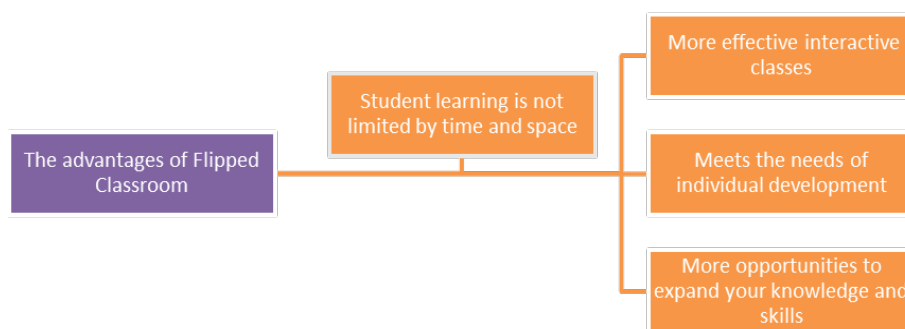


Figure 1 – Flipped Classroom Key Benefits

These cases show that despite the location, the Flipped Classroom teaching methodology remains relevant for the foreign market due to the fact that there are various trends in teaching, according to

which modern teachers successfully teach their students. The main trends are as follows:

1. Gamification and interactive techniques. The Kahoot, Quizlet, Games and other platforms pro-

vide a competitive element, increasing interest. It is widely used in China, Europe, and the United States.

2. *Adaptive learning*. Big Data-based machine learning algorithms. Data allow you to adapt to the level and style of learning of each student.

3. *Mobile training*. Smartphones and tablets are widely used for video lectures, online discussions, and quizzes.

4. *Integration with MOOCs*. Many teachers combine an inverted classroom with massive online courses (Coursera, edX) so that students can listen to lectures by the world's leading lecturers (Modebelu, Duvie, 2012).

Numerous meta-analyses show that Flipped Classroom:

- improves academic performance by an average of 10-15%;
- increases classroom interaction and reduces the fear of asking questions;
- increases interest in the subject, especially among high school and junior university students;
- according to Turkana and Akdag-Chimen scientists in 2019, students learn new topics 30% faster and use an analytical approach to learning more often (Kadioğlu, Özyalçın Oskay, 2025).

However, success depends on the quality of video materials, clarity of instructions, and the teacher's willingness to use active working methods.

Cultural factors and technological infrastructure also play an important role. Despite the innovations, there are also a number of factors that prevent the introduction of this method:

- cultural background: Not all countries are willing to accept independent homework with video lectures as the norm;
- technical barriers: Access to the Internet and devices can be problematic in rural areas;
- teacher training: Not all teachers have Flipped Classroom digital tools and techniques; a training system is needed.

Possible solutions to these questions can be:

- create local content (in your native language) and offline packages for regions;
- conducting specialized courses for teachers;
- flexible infrastructure (grants, government programs, partner projects).

In Kazakhstan, there is a rapid digitalization of the educational system. With the support of the state, many schools are equipped with computers and get access to the Internet (Digital Kazakhstan program). As practice shows, an inverted classroom is especially in demand when teaching English, if teachers are able to shoot high-quality videos, adapt

tasks to the local context, and effectively organize group work in the classroom.

The inverted classroom is an important tool for modernizing education. Its emphasis on active learning, personalized feedback, and higher-order skill development make it relevant for the 21st century. Global studies demonstrate its effectiveness, especially in language teaching, which opens up a huge potential for applying this model in Kazakhstan.

Results and discussion

Comparative analysis of traditional and Flipped Classroom learning. The Flipped Classroom model differs from traditional teaching by transferring the theoretical material to independent study, and the practical and interactive part-directly into the classroom. However, since the method of "inverted learning" is a learning model in which students get acquainted with theoretical material at home in advance, and classroom time at school is devoted to interactive classes and practical development of the acquired knowledge, it is necessary to analyze in more detail the comparison of these two approaches in relation to the realities of Kazakhstan, and also take into account the following factors:

1. *Features of the curriculum*. Traditional schools in Kazakhstan have a well-structured program in English (and other subjects), where the main emphasis is on the transfer of knowledge through the teacher's explanation and mechanical consolidation of exercises. At the same time, the plan needs to be adapted: some of the material should be available in digital form in advance (videos, presentations, texts), and the lesson can be flexible and interactive.

2. *Level of technological security*. In large cities-Astana, Almaty – higher access to the Internet, devices (computers, tablets), which makes the inverted class easier to implement. However, in some rural areas, there is still a restriction in the form of low Internet speed or lack of it. There are solutions with offline materials recorded on USB drives or available on the local network of the school.

3. *Cultural specifics*. Kazakhstan is a multinational country with a triune focus on Kazakh, Russian and English. In the traditional model, front-end work often prevails: the teacher speaks, the students listen. FC implies greater independence, which may be unusual for some students and their parents. You need to explain the benefits of this approach in advance, otherwise you may have problems with motivation and organization.

4. *Motivation and self-organization skills.* In traditional teaching, homework can be routine, while at the same time the student has more responsibility: he should not just “do the exercises”, but carefully look/read the materials, write down questions, and be ready for active discussion in the classroom. For some students, this is unusual, so teacher support and special instructions are important.

Thus, a comparative analysis shows that the traditional system is more stable, but in some cases it is less effective for developing the skills to speak and think creatively. Unlike the usual approach, in which the main body of information is transmitted by the teacher during the lesson, Flipped Classroom aims to expand students’ independence and involve them in discussions, projects and deeper analysis during class work. If using the traditional method, the student listens to a long lecture, and only the remaining time (or homework) is used to consolidate the material, then with Flipped Classroom, the idea is to get access to videos, articles, or interactive simulators before the lesson. In theory, it was mentioned that it may seem that this is just another way to provide information, but in practice, the entire vector of the educational process changes. The teacher, who was previously the source of a monologue lecture, in the new methodology acts as a mentor or leader, trying to arouse students’ interest in a given topic and create conditions for “joint” search for solutions. In the classical scheme, he formulates a thesis, explains the theory, solves examples on the blackboard, sets home exercises, and children often remain in a passive position. Problems and misunderstandings are already detected while working on homework, when there is no teacher around, and help is limited to parents or additional manuals in the literature or on the Internet.

In the context of Flipped Classroom, everything shifts: difficulties appear even before the lesson, when the student gets acquainted with the material at their own pace, has the opportunity to review the video, make additional pauses, and pay attention to incomprehensible moments. Once in the classroom, instead of being a passive listener, they become a full-fledged participant in the discussion, where they can immediately formulate questions or ask the teacher to explain a certain aspect. This increases not only the amount of dialogue between students and the teacher, but also the quality of learning. The other side of the issue is the relationship with parents. In normal learning, adults are often required to monitor whether the child has done their homework,

but it may not be easy for parents to help explain the meaningful details themselves. If a student watches a teacher’s video at home, or watches a carefully structured course with short lessons, then parental support is reduced to organizational matters: turn on the computer, check that the student is not distracted. At the same time, due to the popularization of short video content, many children are more willing to perceive information in the format of short videos, as it reminds them of the usual means of communication from the Internet. The traditional approach rarely involves the active participation of modern technologies, except, perhaps, the use of a projector or interactive whiteboard in the classroom, and Flipped Classroom relies as much as possible on the capabilities of the digital environment. At the same time, the teacher frees up class time for case studies, problem solving, dialogues, and live interaction, which is rare in the context of prolonged monologue lessons.

Another advantage of Flipped Classroom is its individualization. In the classics, some students may fall out of pace, because someone learns information faster, and someone-slower. But in the scheme with a preliminary study of content at home, everyone can view the materials several times, choose the appropriate speed, and review the video. During the lesson, the teacher sees who needs help here and now, and does not waste time repeating the same material for everyone, including those who have already understood everything perfectly.

On the other hand, the traditional method gives a certain predictability: a lecture, a synopsis, homework. It is easier for the teacher to control who listened and who didn’t, although this is often formal. Flipped Classroom, on the other hand, requires more confidence in the student’s independence, which can be difficult if motivation is low or technical capabilities are lacking. Problems arise when students do not watch the material at home, thinking that “they will catch up later”, but this way the classroom part ceases to be effective. However, when the model works as intended – with the appropriate infrastructure, trained teachers, adapted content, and informed students-it can lead to a deeper understanding. As a result, Flipped Classroom turns out to be a method that suits the era of information technology in comparison with conventional training: in it, learning goes beyond the school premises, and the classroom becomes a place for a lively exchange of opinions and collective comprehension of new topics.

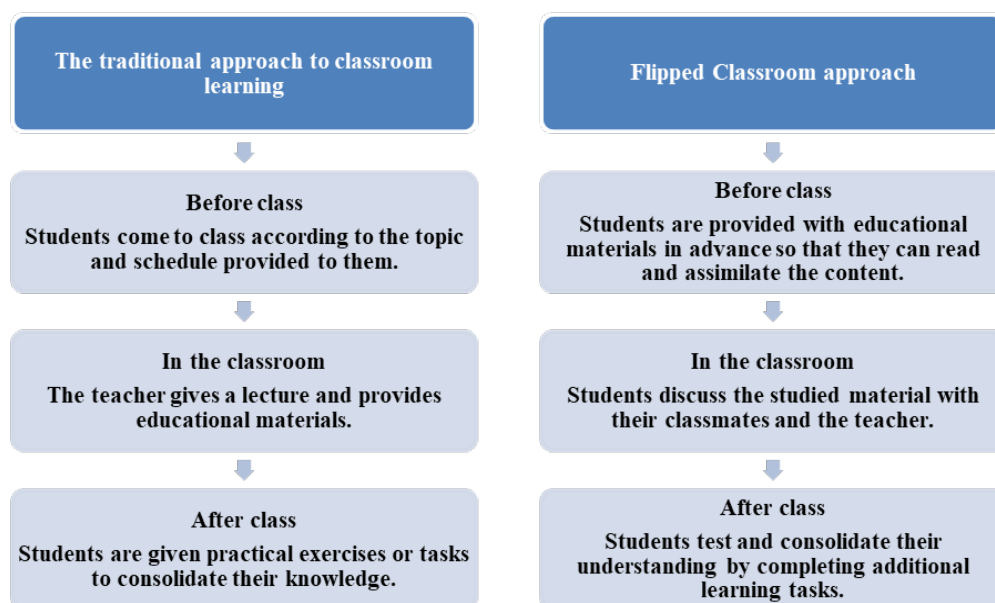


Figure 2 – Comparison of the Traditional approach with Flipped Classroom training

Flipped Classroom gives you freedom and flexibility, but requires more independence, technology base, and motivation. Below is an expanded table that clarifies the comparative criteria applied to the Kazakh school. To understand how effective Flipped Classroom can be, it is important to consider it in comparison with the traditional teaching model. Below is Table 1 summarizing the main differences between the methods.

In the context of teaching English, the inverted class is especially valuable because it allows you to take the “one-way” part (grammar rules, familiarization with new vocabulary) out of the lesson. In the classroom, the teacher creates conditions for practicing conversational speech, writing essays, and discussions. This leads to more effective development of communication skills (Meyliana et al., 2022).

Table 1 – Comparative analysis of traditional and inverted learning

Criterion	Traditional learning	Flipped Classroom
Focus	Teacher-source of knowledge, lectures in the classroom	Student-active participant, basic study of the material at home
Organization of school time	Emphasis on lectures, homework is solved outside the lesson	Studying theory at home (videos, texts), class – for practice, discussions
Teacher role	Lecturer, controller	Facilitator, consultant
Student role	Passive listener	Active participant, Researcher
Technological resources	are used sporadically (textbooks, projector)	Active use of video, interactive platforms
Engagement and motivation	Low/moderate	High (provided that the implementation is well-structured)
Individualization	Depends on the teacher	Significantly higher (everyone watches materials at their own pace)
Feedback	Mainly in the form of grades for homework assignments	is constant (formative assessment, online surveys, comments)
Developing collaboration skills	Little attention	is paid to the main lesson time is devoted to group tasks and projects

If you create a comparison between the two methods, you can summarize it in this way (see Table 2).

As can be seen from Table 2, FC is most effective when there is a flexible infrastructure and when

preparing teachers to create digital content. As part of the Digital Kazakhstan program, these conditions are gradually being implemented, which makes the prospects for adapting the inverted model more realistic.

Table 2 – Refined comparison of traditional and inverted education in Kazakhstan

Criterion	Traditional learning	Flipped Classroom
Lesson format	The teacher explains in the classroom, students listen, take notes; homework – mechanical	Theory is studied at home (video texts), in the classroom-projects, discussions, practice
The level of ICT infrastructure	is required at least (enough whiteboard, textbook)	Computers/tablets are needed, Internet access, video resources; offline solutions are possible in rural areas
Student role	Passive perception of information, performing standard exercises	Active assimilation, formulation of questions, participation in discussions, mutual
Assistance Teacher role	«Source of knowledge» and controller	Mentor, facilitator: prepares resources, consults, organizes group interaction
Preparation of homework	Mostly written exercises	Viewing (possibly several times) video materials, performing interactive quizzes, formulating questions
Engagement	is Average, depends on the teacher's personality	Usually higher (especially with LMS support and gamification)
Rating process	Formal assessment (tests, written papers); feedback is not always fast	Formative assessment, online comments, real-time interaction in the classroom
Taking into account national characteristics	Possible examples based on traditional textbooks	Localized videos, tasks about the culture of Kazakhstan, the possibility of bilingual versions

Practical study of the Flipped Classroom impact: methodology and results. To evaluate the results of the Flipped Classroom methodology, several indicators are often measured simultaneously. First, the researchers analyze the scores for test papers or final tests, trying to find out whether the Flipped Classroom group actually achieved higher results. The methodology of such studies usually includes not only tests and observations, but also surveys of the participants themselves. Students are asked to evaluate whether they are comfortable watching videos at home, how convenient it is to use the Moodle or Google Classroom platform, and whether they have a lack of communication with the teacher due to the fact that theory goes into extracurricular time. Some students admit that it is easier for them to review a particular explanation several times than to passively listen to the lecture once. However, some complain about the lack of proper self-discipline: if the material is too complex or there are not enough technical means, they may skip the video clip, as a

result of which a gap in understanding is found in the lesson.

The results of this type of research ultimately try to answer the question of whether inverted learning is really effective in different subject areas, for which age groups it is suitable, and to what extent its advantages persist with long-term use. Experiments conducted at universities demonstrate that high school students benefit especially from Flipped Classroom: mastering complex concepts or formulas takes place at home, and precious minutes of classroom sessions can be spent solving cases, practicing oral argumentation, and consulting with a teacher. Meanwhile, in school, students are often more dependent on the motivation given by the teacher and on parental control. Therefore, in some cases, despite the high average indicators, the problem of uneven learning still persists: some children watch videos in a disciplined manner, while others do not.

To sum up, Flipped Classroom's hands-on research mostly confirms that flipped learning in-

creases academic achievement and engagement, but requires clear planning and a well-developed methodology for monitoring whether students actually study materials at home. Indicators such as a 10-15% increase in tests, a two-or three-fold increase in the number of questions and activity in the classroom, as well as a positive dynamics of satisfaction with the educational process speak in favor of Flipped Classroom as an innovation that can qualitatively change the approach to learning. Nevertheless, much depends on the students' self-organization and technical conditions, so a balanced system of control, motivation, and timely teacher assistance is important in any such experiment.

Data analysis (Table 3) shows that the experimental groups scored an average of 7-8 points more than the control groups. Teachers noted increased

interest in the subject, active discussions, and better attendance.

Survey of students' perception of Flipped Classroom. Ten questions were generated about the perception of Flipped Classroom and its impact on learning.

Table 3 – Student performance indicators for the final test

School	Control group (average score)	Experimental group (average score)
Secondary school-gymnasium No. 21	71,2	78,5
School-lyceum No. 6	73,4	81,1

Table 4 – Survey questions and summary results (in %)

Question #	Content of the question	%
1	How comfortable was it for you to watch video tutorials before classes (on a scale of 1-5)?	3,8
2	Have you reviewed videos several times to get a better understanding? (% "yes")	65 %
3	How much did your understanding of grammar rules improve after watching the video? (% "improved significantly")	50 %
4	Rate the overall level of motivation to learn English after the introduction of Flipped Classroom (on a scale of 1-5)	4.2
5	Did it become easier for you to ask questions to the teacher in class? (% "definitely yes")	53 %
6	Do you think that the interactivity of lessons (group discussions, games, projects) has increased? (% "yes")	82 %
7	Did you find it difficult to concentrate on studying materials at home on your own? (% "yes, there were difficulties")	45 %
8	Would you prefer to return to the traditional scheme (lecture in the classroom, homework at home)? (% "No, I prefer Flipped Classroom")	66 %
9	How do you rate the quality of your videos? (on a scale of 1-5)	3.9
10	Did Flipped Classroom help you improve your speaking skills in class? (% "yes")	60 %

According to the results of the analysis, it was revealed that:

- the majority of students (66-70%) prefer to use Flipped Classroom;
- the level of motivation increased, and the understanding of grammar rules improved;
- among the difficulties – the need for self-control and concentration when viewing video materials (from 38% to 45% of respondents recognized difficulties).

Overall, the results confirm that Flipped Classroom increases interest in learning English and improves academic performance

Conclusion

The results of the study and subsequent analysis underscore the considerable potential of the Flipped Classroom approach to enhance the effectiveness of English language instruction in Kazakhstani

schools. Structurally, this method involves transferring the passive part of learning (lectures, viewing materials) to extracurricular time and focusing on active interaction, practice and creativity in the classroom.

Key findings:

1. Theoretical background. Flipped Classroom draws on Bloom's taxonomy, constructivism, and sociocultural learning theory. Technological progress has made the method available en masse.

2. A comparative analysis showed that Flipped Classroom increases students' motivation, improves academic performance, and promotes the development of critical thinking skills.

3. Practical experience in Kazakhstan. Pilot projects in the cities of Almaty, Astana and Aktobe confirmed a positive impact on the results of English language tests and increased the involvement of students in the learning process.

4. Problems and solutions. The main barriers are technical (weak Internet), methodological (lack of teachers' skills), and motivational. However, they can be overcome through state support (the Digital

Kazakhstan program), advanced training courses, the introduction of gamification and content adaptation.

5. Long-term prospects. Flipped Classroom can become a key element of modernization of national education, providing individualization of training and forming new competencies of the XXI century.

The practical significance of the work lies in the fact that the proposed methodological recommendations and visual results of the study can be used by schools, lyceums and colleges in Kazakhstan to implement Flipped Classroom in English lessons (and not only). Regular expansion of teachers' experience, exchange of best practices, and government support will help scale successful cases.

Flipped Classroom is a model of the future, where information technologies and high-quality pedagogical support combine to form students' active position in learning. For Kazakhstan, which aims to become one of the world's leading educational systems, this model can become a solid foundation for the development of linguistic, scientific and creative potential of young people.

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