5. Поисковая система Google на запрос «Прага, архитектура» выдает следующий результат:

https://www.google.kz/search?q=прага+архитектура&tbm=isch&source=hp&sa=X&ved=2ahUK Ewjny4mKvY\_lAhX16aYKHZ-mB-cQsAR6BAgJEAE&biw=1326&bih=626 . Соответствуют ли результаты поисковой системы с видением автора? Обоснуйте ответ, опираясь на текст повести и интервью с автором.

6. В повесть «Пражаки» Юрий Серебрянский вводит имя известной русской поэтессы, намеренно допуская неточность. Найдите эту ошибку и восстановите исторический факт. Опираясь на интервью, объясните, для чего автор прибегает к такой подмене и как это влияет на идею произведения.

7. Опираясь на интервью с автором и текст повести, охарактеризуйте персонажную систему повести. Представьте ответ в виде схемы.

8. Какой вопрос вы задали бы автору повести в рубрике «Вопрос автору»?

Важно отметить, что задания предполагают связь литературы с другими видами искусств: архитектурой, живописью, музыкой и пр. Таким образом, реализуется не только учебная цель, но и развивающая и воспитательная. Форма подачи вопросов и заданий не является линейной. Большинство заданий предполагают переход по гиперссылкам, мотивируя обучаемых переработать несколько видов информации (вербальную, невербальную: зрительную, звуковую и пр.), задействовав оба полушария головного мозга [3, с. 237-238].

Заключение. Таким образом, создание элективного курса с применением современных педагогических технологий (проектной и информационно-коммуникативной), согласно проведенному исследованию, способствует повышению заинтересованности студентов, повышает уровень вовлеченности и самостоятельности, развивает критическое мышление и навыки групповой работы. Все перечисленные компетенции являются важными при освоении цикла профилирующих дисциплин в рамках образовательной программы, что еще раз подтверждает целесообразность и эффективность создания и внедрения элективных курсов.

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### STUDENTS' PERCEPTIONS OF HYFLEX HYBRID LEARNING: A CASE FROM THE UNIVERSITY OF KAZAKHSTAN

#### Abstract

This study examined students' perceptions of the Hyflex hybrid learning technology at a Kazakh university. In this study, a qualitative method was used to collect information; statistical measurements are not used and served to form hypotheses and research ideas.

Data was collected from 21 students using basic qualitative research methods: in-depth student interviews to assess how they perceive Hyflex blended learning and how well students understand Hyflex blended learning. Based on the results, students prefer Hyflex blended learning and find it more valuable.

At the same time, students still faced some difficulties, almost all of a personal nature, related to the habit of systematic control by the teacher, weak self-organization, insufficient skills for independent work, and limited opportunities for interaction with other students and teachers.

These results highlight the importance of providing support to students in understanding their resources and goals, creating opportunities for success, maintaining and enhancing student self-

esteem in the time and resources available; changing the interests and needs of students through the transformation of consciousness and understanding of their education.

The results of the research can be used to develop courses and programs using Hyflex hybrid technology and to create the best possible learning environment for both in-person and online students.

Keywords: Hyflex, hybrid learning, higher education, perception, students, case, study.

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# СТУДЕНТТЕРДІҢ НҮFLEX ГИБРИДТІ ОҚЫТУДЫ ҚАБЫЛДАУЫ: ҚАЗАҚСТАН УНИВЕРСИТЕТІНІҢ КЕЙСІ

## Аңдатпа

Бұл зерттеуде студенттердің Қазақстан университетінде hyflex гибридті оқыту технологиясын қабылдауы қарастырылды. Сонымен қатар, сапалы ақпаратты жинау әдісі қолданылды; статистикалық өлшемдер қолданылмайды олар гипотезалар мен зерттеуді қалыптастыруға қызмет етеді. 21 респонденттен алынған деректер негізгі сапалы зерттеу әдістемесі арқылы жинақталды: студенттер Hyflex гибридті оқытуды қалай қабылдайды және Hyflex гибридті оқыту технологиясын қаншалықты түсінетінін бағалау үшін студенттермен сұхбат жүргізілді.

Нәтижелерге сәйкес, студенттер Hyflex гибридті оқытуды қалайтыны және оны пайдалы деп санайтыны анықталды. Айтарлықтай студенттер әлі де кейбір қиындықтарға тап болады, ең алдымен жеке басты мәселелерге байланысты: мұғалімнің жүйелі бақылау әдетімен, өзінөзі ұйымдастырудың әлсіздігімен, демек, өз бетінше жұмыс істеу дағдыларының дамымағандығымен, басқа білім алушылармен және оқытушылармен өзара әрекеттесу мүмкіндіктерінің шектеулі болуы баршылық.

Бұл нәтижелер білім алушыларға олардың ресурстары мен мақсаттарын түсінуде қолдау көрсетудің, олардың табысқа жетуіне мүмкіндіктер жасаудың, қолда бар уақыт пен ресурстар шегінде студенттердің өзін-өзі бағалауын қолдау мен арттырудың маңыздылығын көрсетеді; сананы өзгерту және олардың оқу қызметін түсіну арқылы студенттердің қызығушылықтары мен қажеттіліктерін өзгерту болып келеді.

Түйін сөздер: Hyflex, гибридті оқыту, жоғары білім, қабылдау, студенттер, кейс, зерттеу.

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# ВОСПРИЯТИЕ СТУДЕНТАМИ ГИБРИДНОГО ОБУЧЕНИЯ HYFLEX: КЕЙС КАЗАХСТАНСКОГО УНИВЕРСИТЕТА

Аннотация

В этом исследовании изучалось восприятие студентами гибридной технологии обучения Hyflex в казахстанском университете. В данном исследовании использовался качественный метод, предполагающий сбор информации; статистические измерения не используются и служат для формирования гипотез и исследовательских идей.

Данные 21 респондента были собраны с использованием базовой методологии качественного исследования: интервью со студентами, чтобы оценить, как они воспринимают гибридное обучение Hyflex и насколько хорошо обучающиеся понимают технологию гибридного обучения Hyflex.

Согласно результатам, студенты предпочитают гибридное обучение Hyflex и считают его более полезным. В то же время студенты по-прежнему сталкивались с некоторыми трудностями, прежде всего личностного характера, связанными с привычкой к систематическому контролю со стороны преподавателя, слабой самоорганизацией, следовательно, недостаточно развитыми навыками самостоятельной работы, ограниченными возможностями взаимодействия, с другими обучающимися и преподавателями.

Данные результаты подчеркивают важность оказания поддержки обучающихся в понимании их ресурсов и целей, создания возможностей для достижения ими успеха, поддержания и повышения самооценки студентов в пределах имеющегося времени и ресурсов; изменение интересов и потребностей студентов через трансформацию сознания и понимания их учебной деятельности.

Ключевые слова: Hyflex, гибридное обучение, высшее образование, восприятие, студенты, кейс, исследование.

**Main provisions.** HyFlex combines the terms "hybrid" and "flexible." Hybrid learning refers to learning that integrates complementary face-to-face (synchronous) and online learning (asynchronous) experiences in service of intended learning objectives (see CTL's guide on Blended Learning to learn more). All students in a hybrid course are expected to undergo the same combination of online and in-person activities. In contrast, the "flexible" aspect of HyFlex is that students are given choice in how they participate in the course and engage with the material in the mode that works best for them over the course and from session to session.

The Hybrid-Flexible (HyFlex) course design delivers a student-directed multi-modal learning experience. Students choose between attending and participating in class sessions in a traditional classroom (or lecture hall) setting or an online environment. Online participation is available in synchronous or asynchronous mode; sometimes both and sometimes in only one online mode. When considering whether or not to offer HyFlex classes in a program or institution, it is helpful to understand the values and associated fundamental design principles that undergird the approach many have followed in more than a decade of implementation.

The primary reason a HyFlex course design should be considered is to give students a choice in how they complete course activities in any given week (or topic). Without meaningful choice, there is no flexibility and therefore no HyFlex. Without flexibility, all you have is a standard hybrid course. Choosing to implement this principle requires that an instructor value providing participation choice to students more than s/he values forcing everyone into the "best" way of learning a set of content.

Teaching a hybrid/HyFlex course allows instructors to draw on their in-person and online teaching experiences to create flexible, accessible, and equitable learning environments for in-person and remote students alike.

The development of the Hybrid-Flexible (HyFlex) course design was driven by several important institutional, faculty, and student factors. Institutional factors include the location, instructional history, and enrollment characteristics of the university. Faculty factors include the capacity and capability to teach online and in the classroom and the motivation to try something new to better serve students. Student factors included academic interests, technical abilities, and time and location constraints/restraints of the current student enrollment.

At its core, the Hybrid-Flexible (HyFlex) course design delivers a student-directed multi-modal learning experience. Students choose between attending (participating) in-class sessions in a traditional classroom (or lecture hall) setting or an online environment. Online participation is

available in synchronous or asynchronous mode; sometimes both. When considering whether or not to offer HyFlex classes in a program or institution, it is helpful to understand the values that undergird the approach. The HyFlex course design is built upon four fundamental values: Learner Choice, Equivalency, Reusability, and Accessibility, each with a corresponding guiding, or universal, principle for designers and instructors to follow. These four "pillars" provide a consistent and solid foundation for resulting courses and programs.

Along with the increase in the variability of programs, the requirements for educational results are also being updated. In the cases of Kazakh universities, one can find a purposeful transition from narrow-profile knowledge training to the formation of a wide range of professional and universal competencies.

This practice was incorporated into the educational process, especially at the onset of the pandemic as a crisis, perhaps as a one-time measure. We believe this approach is not merely a response to the fact that universities and students have shown some social activity during the pandemic. It has become some kind of claim that the integration of different types of activities and different fields on which a person's education can be built leads to the fact that the educational process becomes more effective when a wider range of learning outcomes is formed from professional skills to universal competencies and various personal characteristics.

With many countries and regions now discouraged from fully returning students or students to classrooms and classrooms, many schools have opted for a hybrid learning model - part online, part face-to-face - known as HyFlex. Consequently, they faced a serious problem: how to provide the same full-fledged education, both in the classroom and via the Internet? Technical issues are at stake here, and it's hard not to get confused by the vast array of possible solutions [4]. First introduced to higher education in 2006, it gives students the choice of taking classroom courses or studying online, with the ability to switch from one to the other at any time. Hybrid learning technology involves the unique management of the student's time while providing him with methodological support, in particular, through:

1) Synchronous learning, similar to an online class, which can be carried out based on individual learning;

2) Asynchronous learning, providing an ideal platform for the implementation of distance learning.

Now, the HyFlex model is becoming a particularly relevant solution, as it can significantly reduce the number of students present in the classroom or classroom.

Three Guiding Principles for HyFlex Equipment.

To turn regular classrooms into HyFlex-ready classrooms, schools are hiring systems integrators and their own IT staff and looking at options. The main requirements of the technical proposal are summarized as guaranteeing the following three conditions:

1. Improving the overall level of learning

In the simplest case, educational institutions can limit themselves to using video conferencing services, such as Zoom. After all, these services are easy to use and very affordable. But if only video conferencing is used, it will not be able to provide the necessary level of interaction and interest for students. For today's students to truly "remotely attend" classes, educators need a much wider arsenal than just webcam video, laptop audio, and a few screen-sharing features [5].

The solution should offer advanced video capture features with a focus on interactivity and quality. Schools should provide teachers with tools to engage students in the process. Audiovisual information that is seen and heard by remote and full-time students should match as much as they can. For example, if students in the classroom receive information on a whiteboard, online students should also be able to see it. If a student in class asks a question, online students need to hear it too. The solution is to capture and transmit images from computer and projector screens, as well as audio and video from the audience itself.

2. Ease of use for teachers.

For most teachers, the main criterion is the ease of use. They are unlikely to want to master the technical nuances in addition to preparing the lectures themselves. A smooth and orderly transition to the new way of working is essential, and this requires direct integration with existing tools such as the university's Learning Management System (LMS). Also important is the automation of the workflow - the ability to schedule lecture recordings and automatic file uploads, ensuring that video files are available for students to watch at any time.

3. Easy to install and maintain for staff.

Reliability is the number one factor that IT staff and educators expect from any solution. It is natural to expect that the system will always provide consistent quality results. This means that every HyFlex class or classroom must be equipped with the most reliable cameras, audio and video equipment, and video and audio capture devices. All of this should be carefully tested.

4. High-performance, HyFlex classroom equipment.

At the heart of any HyFlex classroom, the solution is video streaming and recording hardware that enables remote learning by capturing, mixing, and delivering video content online. It is also important that the equipment for these solutions is as reliable and easy to use as possible, especially for students.

Hybrid learning has been the subject of study by many foreign and domestic scientists. On the contrary, FitzGerald advises distinguishing between them, since blended learning combines a full-time format and asynchrony, while full-time and distance learning are combined in hybrid learning.

Pesen defined hybrid learning as an ideal approach for combining the strongest aspects of classroom and online learning and developing the knowledge and communication skills necessary for success. It is inferred that the main purpose is to contribute to the learning of students by making the most effective and efficient use of the educational environment created by combining face-to-face learning with technology-supported teaching. In the hybrid learning process, face-to-face lessons are taught with in-class activities, while some activities and practices should continue outside the classroom. In order to carry out these practices outside the classroom in an appropriate way, there is a need for an auxiliary tool that can manage the distance education process.

Some web tools are used for presenting and managing learning material and course content on the web in the distance part of blended learning environments, sharing the presented material in different ways such as chat or discussion platforms, evaluating and observing the students' performance, homework, exams, providing feedback on assignments and exams. These web tools include Moodle, Blackboard, Edpuzzle, Blogs, Camtasia Studio, E-learning Platform, Google Docs, Learning Management Systems, Blackboard, Khan academy, Moodle, Prezi, Storyline, Youtube.

Although creating hybridity starts with technological solutions and set-ups, this is only one of the conditions for creating the user experience within a certain setting, as no form of technology can change practice. In line with Goodyear, learning space is conceptualized as the ecosystem of learners, teachers, pedagogical practices, digital and material resources, buildings, and furniture. This perspective aims to investigate the interrelations within this ecosystem. In that sense, it is crucial to investigate how people think about hybrid models of learning and teaching and to investigate how hybrid teaching and learning are experienced by both teachers and learners [6].

Previous research focusing on student engagement in hybrid classrooms is scarce, but the existing literature is consistent in that they all report that although hybrid education provides a lot of benefits, including flexibility, it brings many challenges, which are both pedagogical and technological.

The main pedagogical challenge reported in previous literature is that on-site students and remote students experience the lesson differently in the hybrid synchronous situation, although the Research & Development field strives for designing and implementing both pedagogical strategies and technological systems that enact comparable learning experiences [7].

Previous research shows that remote learners feel a significant sense of distance from their teacher and their face-to-face classmates. A qualitative study conducted by Olt concluded that the

experience of the remote participant can be explained and understood by the concept of 'ambiguity' regarding group membership, the functionality of technology, and place.

Also, Huang showed that the remote students felt excluded from the chief class because they were physically separated from the face-to-face class, especially when the remote class encounters technical difficulties without immediate support. In the study of Weitze, remote students indicated that it is difficult to alert the teacher that they want to answer a question, which makes them feel frustrated and uninvolved.

Therefore, it is important to consider this in the design of the classes and to be aware that remote students need to feel more invited into the class activity.

Looking into the literature on hybrid learning environments, it is generally viewed as both engaging and relevant due to its high level of flexibility [8].

More and more researchers claim that the nature and structure of future universities will be hybrid to better deal with changing contexts. This will entail that physical and digital learning and research environments must be designed in a holistic way to accommodate the different needs of a diverse university community.

Hybrid learning environments allowing learners to attend synchronous online courses at home, at work, or when traveling, are not new in the field.

Introduction. The COVID-19 pandemic has devastated many aspects of human life, including those on the education front. In trying to contain the spread of the virus, schools were closed for long periods of time, examinations could not be carried out, and learning according to syllabus stalled. Subsequently, remote learning was adopted in schools in countries around the world, a shift that brought with it many constraints and challenges. A possible long-term solution to these issues lies in the hybrid mode of learning. Hybrid learning (HL) is examined from the perspective of four dimensions: learning environment, learning experiences, learning management and content of learning. A Hybrid Learning Curriculum Framework for Schools (HLCFS) is proposed to facilitate systemic and sustainable change. This framework integrates linear hierarchical and nonlinear lateral curriculum design; deliberates adequate knowledge; and organizes it meaningfully for schools. Powerful knowledge and disciplinary thought systems are explored in designing the HL curriculum in order to integrate the modalities of both virtual learning and physical classroom learning. Pedagogical and curriculum change moving towards interdisciplinary learning provides the flexibility and rigour required in HL. A feasible assessment strategy in HL needs to include technical support in the form of a learning management system, as well as more hands-on assistance to the teachers. Assessment also needs to be aligned to the intended curriculum in HLCFS for optimal achievement. The required student competences include skills to search information and the right attitude to learning. We may have no choice but to accept hybrid learning, which will change the landscape of education. It is an alternative that cannot be ignored. Moreover, teachers and students were the second-largest groups of digital technology users during the pandemic. Notably, digital technology has changed higher education teaching and learning interaction and strategies, allowing technology-enhanced distance learning, blended learning, or combined on-site and distance learning, such as HyFlex.

The pandemic has exposed some of the difficult issues in developing higher education. It is becoming more and more obvious that many existing models and practices of universities cannot be preserved in their former format [1]. In this context, the development potential of Kazakhstan's university system depends on the success of this transformation. Its complexity is largely determined by the scale and complexity of the necessary transformations that will affect the management system, didactics, technologies, and assessment systems. At the same time, there are no obvious "correct" development scenarios, and Kazakhstan has to work in the mode of hypotheses, trials, and continual managerial reflection. Such a "start-up format" of transformation is visible in the variability of approaches to quality management in international cases but is also visible when analyzing the practice of Kazakhstani universities. Each university has chosen a

priority strategic direction for changing the quality assurance system. It is this diversity that becomes a collective asset for development and the basis for the transfer of the most compelling quality management practices between regions and universities.

In this regard, it is important to identify the most common areas of development in the broad range of solutions and practices that Kazakh universities have developed to manage the quality of education during the pandemic.

In the 21st century technology age, human beings need education more than ever. Undoubtedly, this need increases the duties and responsibilities of the teacher in the education system. Education in the digital age emphasizes globalization and internationalization. Today, in the learning atmosphere of education, developing technology and the radical transformations that occur in all areas of life accordingly affect all elements of education. With these conditions that significantly change the structure and functioning of education, it is essential to take measures to facilitate the adaptation of students from all socioeconomic levels to changing conditions. Otherwise, it will be difficult to ensure equality of opportunity in education.

It is accepted by everyone that the qualifications of teachers are important in achieving the goals of education. Changes in many areas from the planning to the implementation of education have brought along discussions about the skills that teachers should possess. The current process makes it necessary to focus attention on some focal points within the framework of the new position of the teacher, the difficulties he/she faces and the opportunities he/she has. In the 21st century, teachers face a number of challenges. When these challenges, which we can call a series of "innovations", are well analyzed, situations that can be advantageous for the teacher will emerge. Changes in fundamental issues such as learning environment, students, teaching techniques, social life and work life are critical for teachers. Teachers have a critical role to play in ensuring that students adapt to changing social structures and are prepared for the work life of the future. In order for teachers to fulfill this important task in future education, there are some basic skills such as leadership, collaboration and professional ethics.

It is obvious that an education system based on "possessing knowledge" and "transferring knowledge" will be insufficient to create the modern human model needed. A new model of education is needed to raise contemporary people (Bates and Poole, 2003; Mabuan, 2021; Tanguay & Many, 2022). The main objective of contemporary education is to educate students who have developed problem solving skills, who recognize the methods of accessing information, who have gained analytical thinking skills, who keep their willingness to be informed alive, to direct students to teamwork and to ensure that students are active throughout the entire learning process. The realization of this goal necessitates a change in the pre-professional and in-service training of teachers to meet these requirements.

Education is not a process of "telling" and "being told", but an active process of "giving meaning". "Giving meaning" to classroom experiences is something that experienced teachers do every moment. Utilizing these experiences is an enriching element in preparing prospective teachers for the reality they will encounter in the classroom in the future Wasserman, (1993). Teaching through case method teaching, which is based on the development of professional competencies of teachers by utilizing each other's experiences through real life events, is developing as an increasingly important method in teacher education. This method has been found to improve individuals' ability to communicate their thoughts more effectively, to think critically, to make better decisions and to generate alternative solutions to complex problems.

This study is concerned with the HyFlex hybrid learning format that includes F2F and ERT instructional components, specifically how, for each class meeting, students are allowed to choose between physically attending the lecture in a classroom environment or remotely in a virtual setting. HyFlex courses enable full flexibility of participation where students choose attendance mode: face-to-face, online synchronously, or mixed attendance. Furthermore, students might change their attendance mode throughout the semester [2].

HyFlex, similar to other hybrid learning programs, offers a good balance between work, family, and other obligations, allowing students to avoid costly commutes and course conflicts. The HyFlex course design provides two modes of communication between the instructor and the F2F and remote learners: semi-directional (one-way) and bi-directional communication, where remote learners can communicate with F2F students and the instructor in real-time. Because of this, the HyFlex learning environments also present notable logistical and pedagogical challenges.

One of the noticeable elements of the transformation is the renewal of educational programs and their content. There is a gradual transition from uniform "monolithic" programs to variable multitrack programs-constructors. Such a change is reflected in the expansion of students' opportunities to assemble their program and educational trajectory.

Furthermore, the hybridization of the learning environment is associated with breaking traditional scheduled boundaries between family time and study time and the need to monitor learning in multiple locations via diverse communication methods.

HyFlex education during the COVID-19 pandemic differs from traditional HyFlex education during normal circumstances. More concretely, it differed from the traditional HyFlex model as it was implemented amid a pandemic when students had no choice. Consequently, most higher education institutions that adopted the pandemic version of "emergency HyFlex" did not have the infrastructure necessary to facilitate equitable learning experiences and outcomes across all learning modalities as in the traditional HyFlex format. On the one hand, such challenges include monitoring academic integrity. On the other hand, it is widely known that technology affects an individual's ethical behaviour. Non-traditional learning environments (e.g., hybrid and HyFlex) are highly vulnerable to academic integrity-related issues, such as buying and selling assignments and exploiting bugs in virtual tests or submission systems.

Moreover, the different HyFlex attendance modes, namely HyFlex primarily F2F, HyFlex primarily online, and hybrid (a combination of either F2F or online), present distinct pedagogical challenges and markedly different learning outcomes.

Thus, elements such as minors, elective courses, modules, systems of additional courses, and educative events of the student's choice are becoming more widespread [3].

**Materials and Methods.** In the last 15 years, new educational models have been proposed such as HyFlex learning and teaching conceptualized by Beatty and multi-access education conceptualized by Irvine et al.

Yet to be able to make thoughtful design decisions, more empirical research is needed about how these new learning spaces are experienced by both students and teachers, as the latter has often been neglected in previous research. Moreover, research is needed to inform pedagogy in these post-digital learning spaces [10].

We agree with Qi & Tian that four characteristics of hybrid learning set it apart from other educational technologies: a combination of formal and informal learning in terms of its implementation throughout life; flexibility; and adaptability (lifetime learning).

AlNajdi created the HyFlex learning hybrid learning platform. On it, students have the opportunity to choose their format of study: full-time, online, or mixed form. Some researchers believe that HyFlex training may be attractive to college and undergraduate students. Zehler states that technology will become ubiquitous in the future of blended learning that emphasizes the use of games. Following Awadh & Higgins among the advantages of hybrid learning, one can single out "an increase in the productivity of the educational process, an increase in the availability of materials, a reduction in financial costs, an increase in the information and communication competence of all participants in the educational process".

We agree with Bennett [11] in dividing the number of difficulties in blended learning into two categories:

• Difficulties specific to both hybrid and distance learning in general;

• Difficulties unique to hybrid learning.

The first category includes technical difficulties for instructors and students connecting to online courses. For example, a sudden power outage in residential buildings, poor internet connection, not working camera or microphone, low computer RAM or lack of a good computer or smartphone, and background noises. Often a serious problem is the technical illiteracy of teachers and students, which requires interpretive dialogues and master classes on working in a digital environment.

It is also necessary to talk about the psychological case. Teaching at home and taking online classes can often suffer from distractions. Teachers complained about the lack of visual contact (many students either turned off their pictures or posted theirs), and the inability to control what students were doing at a given time. For students connected online, psychological difficulties were related to embarrassment or reluctance to turn on the camera.

These include the concept of a "hybrid learning environment". This concept was developed in close participation with the educational practice of higher education and higher vocational education.

We can also agree with Van den Akker and distinguish the physical and digital setting with its tools, documents, and artifacts, which can be intentionally planned and designed in a specific educational context, and the socio-cultural setting in which learners carry out their activities which emerges from this intentionally planned and designed environment [12].

What of the "hybrid" part of the concept? To understand hybridity, one needs to acknowledge different modes of learning. In general, a broad distinction between two modes of learning can be made: learning situated in an educational environment that is based on formal, intentionally planned educational activities and learning situated in a mostly informal work environment. The educational environment tends to focus more on individuals, while in a workplace environment; the focus is more on activities, often carried out in a team or within an organizational structure. Learning in schools usually has an emphasis on mental activities, while in a workplace the additional use of different tools and instruments is quite customary

One of the problems unique to blended learning is the uneven attention paid to students online and in the classroom. The last one gets more. In addition, the sound quality during video broadcasts can cause a certain discomfort for all participants in the educational process. The issue of testing remains unclear. Students have complained about unfair conditions, but different control tasks can be assigned to those physically in the classroom and those attending classes remotely. Everyone can take the test online, but those who write tests at home are in a better position than students who write tests in class. As a result, it can be difficult to objectively assess the outcomes of both hybrid and distance learning [13].

The results of these studies show that student achievement in blended classrooms is comparable to traditional face-to-face classes. Students are satisfied with and benefited from online activities. There are some studies on online learning in universities and schools in developing countries.

Several studies have highlighted the benefits of hybrid learning as well as the challenges faced by students and faculty, but none of these studies examined hybrid learning from the perspective of Kazakh students and the specific challenges they face.

Designing a HyFlex Course: Process Guidance. HyFlex courses allow for student choice in their participation mode, either in the classroom (when available) or online, and in many cases when online, either synchronous or asynchronous participation. (Note: A modified HyFlex design might only support student choice between synchronous and asynchronous modes when the inperson classroom option is not available.)

In a HyFlex course, the instructor provides instructional structure, content, and activities to meet the needs of students participating in any participation mode. Activities in each mode often overlap, reusing learning resources, activities, and assessments for all students when possible and practical, but in total, they are typically not the same activities for students in all participation

modes. Activities in each mode must lead to equivalent learning outcomes. No matter which participation format is chosen, teaching and learning activities should ideally:

- Present content effectively and professionally
- Engage learners with generative learning activities
- Use authentic assessment to evaluate student learning

The decision to adopt a HyFlex course design should consider the same factors used to decide whether or not to create a fully online course or a hybrid (or blended) course. Once the decision to deliver all or part of a course in the HyFlex format has been made, several important steps should be completed during the design process (before developing the course) which will help instructors implement an effective HyFlex teaching and learning environment for all students in every participation mode. These steps are not all-inclusive to the course design process; good instructional design practice and a thorough systematic process should still be followed. The design steps highlighted here are included here to emphasize the unique requirements and challenges of the HyFlex course design [14].

- 1. Assess the opportunities (value) and challenges (costs).
- 2. Confirm or modify expected student learning outcomes.
- 3. Plan student learning activities (focus on content).
- 4. Plan to assess student learning outcomes.
- 5. Develop student engagement strategies.
- 6. implementation plan (technical, student, faculty, administrative factors).
- 7. Evaluate the return on expectations.

It is important to consider the physical space and its effects on teaching concerning HyFlex. Leijon and Lundgren conceptualized different types of space in the HyFlex model, including both physical space and interactional space. How these spaces are designed or adapted is critical for optimal communication, interaction, and, as a result, learning. A teacher implementing the HyFlex model needs to be able to communicate whilst interacting with all the different spaces. The teacher's movement within the space and the variety of teaching styles must be considered when implementing a design and fitting additional equipment. Critically, as Binnewies and Wang note, students often appreciate the flexibility that HyFlex provides, but this is constrained by the available technology. Prior studies have shown that audio quality (in the sense of not having too much noise) is important in determining the quality of a learning space. Mantooth reinforces the point that, for effective learning environments, any novel technology needs to be paired with appropriate pedagogy, which is a point that this research endorses. There is an emerging literature on student perceptions of this form of learning environment, with Keiper identifying examples of positive feedback with a given tool in a specific context [15].

Other Course Design Formats in the Hybrid-Flexible Genre. There have been many others working on similar approaches to combining classroom students and online students; some are very similar – even identical – to HyFlex and others with significant differences from HyFlex. Many of these instructional formats were developed during the same timeframe that we were reporting our work with the HyFlex course design, and others came afterward. All use their branding (name, primarily) for their purposes, whether or not they were aware of the HyFlex approach at the time.

- Mode-Neutral (2008)
- Multi-Access Learning (2009)
- Converged Learning (2012)
- Peirce Fit ® (2014)
- Multi-Options (2014)
- FlexLearning (2012)
- Flexibly Accessible Learning Environment (FALE) (2018)
- Blendflex (2016)
- Comodal (2016)

- Flexible Hybrid (2014)
- Synchronous Learning in Distributed Environments (SLIDE) (2011)
- gxLearning (2011)
- Blendsync (2011)

•Remote-Live Participation (RLP) (2018) [16].

It was proposed that implementing the HyFlex model should follow a holistic approach. For example, Flavin stated that, in the context of virtual learning environments, simply adapting technology to current practices is not disruptive and maintains the status quo; therefore, change must come from pedagogical practices. This is a sentiment echoed by Gogia, who discussed the risks of making HyFlex all about investing in the technology and forgetting about the pedagogy. It was agreed that, to produce an efficient solution, a multidisciplinary decision-making process was necessary. Shang identified four stages in the knowledge acquisition process (namely, planning, extraction, analysis, and verification), with this process being transferable from technology design to other domains as described and extended by Guenther [17].

Research questions

Q1: What do you know about Hyflex hybrid learning?

- Q2: What specific benefits of Hyflex hybrid learning can you name?
- Q3: What do you think are the disadvantages of Hyflex hybrid learning?

Q4: What advice can you give teachers about using the Hyflex hybrid learning format in the education process?

Objectives: The objective of the study is to examine students' perceptions of Hyflex hybrid learning technology at a Kazakh university.

Specific objectives: Short-term objective: To evaluate the results of in-depth student interviews to assess how they perceive Hyflex Hybrid Learning and how well students understand Hyflex Hybrid Learning.

Long-term goal: To give the student's subjectivity a new quality, allowing the student to make his own decision about the model and method of his participation in the educational process.

In the experiments, a qualitative method is used, which involves the collection in a free form; focuses not on statistical measurements, but on comprehending, reviewing, and interpreting empirical data, which is a structure for the formation of fundamental and productive ideas [9]. The purpose of the qualitative research method is to obtain exploratory data, not to collect the sum of opinions. In the well-known method, when explaining and explaining concepts, instead of numbers, words are used. In our study, the quantitative data obtained were not subjected to quantitative analysis.

The study design included formulating the topic, questions, and assumptions; selecting approaches and methods; planning the sample, timing the fieldwork, and how the data will be analyzed. Descriptive research questions were formed. In addition, participating experts have carried out at least three years of practical work as experts in large research institutions specializing in empirical research. The experts were asked to evaluate the suitability of the questions for the study.

The in-depth interview with 21 students from Toraighyrov University in Pavlodar was an informal face-to-face conversation with research participants, conducted according to a pre-planned plan and based on the use of methods that encourage respondents to a long and detailed discussion of issues of interest to the researcher. The specified number of respondents is sufficient to form a well-developed typology map based on their responses, which will serve as a starting point for further research. In the survey of in-depth interviews, the method of equal quota is used to select respondents (the principle of random selection is retained within the quota). Using this method is considered expedient by the researchers since the main parameters and characteristics important for the study are known.

Interviews are one-on-one and last 30 to 60 minutes. During the interview, the interviewee's personal opinions, beliefs, and values were studied. The interviews used open-ended questions rather than a clear "yes" or "no." Reflection and feedback, within the framework of which the understanding, questions, or positions of students are fixed, are obligatory stages in the study.

**Results.** *Research Question 1:* What do you know about Hyflex hybrid learning?

According to an analysis of interview data, a majority of students (90%) view blended learning as a combination of online and in-person activities. The hybrid format, in their opinion, involves the parallel work of online participants and full-time students in a single hybrid learning environment. Different groups of learners are training at the same time, blurring the line between in-person participants and online students.

Student A stated in the interview:

In the Hyflex hybrid learning model, teachers work with students, some of whom are in the classroom and some of whom are connected online. Elements of asynchronous learning are integrated into the educational process - online exercises and pre-recorded video instructions.

# Student C told:

*HyFlex combines the terms "hybrid" and "flexible." The HyFlex format combines classroom (synchronous) and online (asynchronous) learning to achieve desired educational goals.* 

Student D also stated:

Students can learn at their own pace by varying their study timetable and the format of their participation in courses according to their personal preferences and interests.

10% of students do not understand what blended learning is and note that any form of distance learning can be Hyflex hybrid learning.

Student B mentioned

Hyflex hybrid learning is online learning via the Internet.

Student E stated in the interview:

Students are not physically present in class (this may also apply to teachers in some cases).

Research Question 2: What specific benefits of Hyflex hybrid learning can you name?

All students cite certain benefits of Hyflex hybrid learning. Here are the most common responses from students:

- Students join the class and interact with the entire group via a video link;

- Groups can listen to lecture material in both synchronous and asynchronous formats;

– Online students participate in all activities of the class on an equal basis with in-person participants;

- You can connect to courses from anywhere in the city, country;

- You do not have to miss classes and lose points;

- You can always contact the teacher in the chat and ask questions.

*Research Question 3:* What do you think are the disadvantages of Hyflex hybrid learning? Students identified the following as disadvantages:

You have to disassemble a lot on your own, you need computer literacy, the ability to work on the platform that the teacher uses, technical problems, and computer fatigue.

*Research Question 4:* What advice can you give teachers about using the Hyflex hybrid learning format in the education process?

As recommendations to the teacher on the use of hybrid learning technology, they gave such:

- use different educational platforms;

- develop massive open online courses (MOOC) in some disciplines, for example, in the course of Pedagogy, Kazakh language, Methods of teaching a foreign language, and others;

- ensure the adaptability of the course to the needs of each student;

- provide equal participation of online and offline students in the learning process;

- provide instructions for completing tasks posted online;

– provide immediate feedback.

Student K stated in the interview:

Structure educational content in portions, enabling the student to work and master the content in stages.

Student L told:

Provide regular and frequent feedback from students, both to check retention of engagement and to implement the principles of constructive alignment.

Student M also stated:

To implement a significant proportion of events in an interactive format, enabling students to act subjectively and actively within the course and event

This important feedback from students applies to the construction of a general Hyflex hybrid learning construct. An important methodological feature of the hybrid approach to designing classes – is the inability to make a reference or the only correct scheme for constructing classes. This is largely determined by the significant role of the student's subjectivity in the Hyflex hybrid learning model, which affects the need for the implementation of variable and flexible programs. The pedagogical design of the courses should take into account equal learning opportunities for students online and offline, allow to stimulate the involvement and interaction of two groups, which leads to a revision of the lesson scenario, features of the choice of digital tools and task options, the development of a teacher's habit of working equally with both groups of students at the same time.

**Discussion.** The study presented set out to examine students' perceptions of Hyflex hybrid learning at a Kazakh university and, more specifically, to identify how well students understand Hyflex Hybrid Learning. In this direction, special attention was paid to the assessment of the Hyflex hybrid technology format, how students assessed their ability to regulate their learning in this format, and the degree of student satisfaction with the training received. First, about preferences in terms of the form of education, most students prefer the Hyflex hybrid technology format. This conclusion is consistent with other studies, which found that 65% of students prefer hybrid technology. The fact that students rate hybrid learning more positively than full face-to-face classes may be because they are considered a more effective way to resolve doubts, and develop learning, participation, and interaction.

In this direction, special attention was paid to the assessment of the Hyflex hybrid technology format, as well as how students assessed their ability to regulate their learning in this format, and the degree of student satisfaction with the training received. First, about the preferences in terms of the form of education, most students prefer the Hyflex hybrid technology format. This conclusion is consistent with other studies. The fact that students rate hybrid learning more positively than face-to-face classes may be because they are considered a more effective way to resolve doubts and develop learning, participation, and interaction.

By choosing Hyflex Optimal Hybrid Learning, students can choose flexible schedules and learning modes, and make it easier for fellow students to interact with a friend and with a computer. For students who do not physically participate in classes, hybrid learning allows you to gain knowledge remotely. The hybrid learning model also allows students to attend educational courses without having to relocate. At the same time, for students who want to study accurately, such a system does not interfere at all. In addition, hybrid learning provides greater accessibility for people with limited access. This conclusion is consistent with other studies.

The new practice is increasingly becoming part of the student's request; this is seen in the results of research. Thus, the proportion of students who prefer hybrid or mixed forms increased from 25% in 2020 to 50% in 2021. An even more pronounced request among teachers' reviewers: in 2020, only 22% of respondents' hybrid or mixed formats become part of the daily norm, and in 2021 the share of such teachers will give 70%.

The modern practice encourages the teacher to work simultaneously with students in the classroom, with students, located in the online space, as well as to conduct the activity for students taking the course asynchronously. Students, due to various circumstances, can change between

these three spaces, and in the case of hybrid learning, this movement between spaces is not predetermined by the teacher but walks based on the decision of the students themselves. That such non-linear hybrid learning logic not simply raises the question of the digital competencies of the university professor, but also about new methodological approaches.

Existing studies related to hybrid learning (HL) mainly focus on its effectiveness. These studies measure students' performance, perceptions and reflections on the implementation of HL. Surveys and interviews are the two main methodologies used. The findings of these studies indicate that the performance of students in hybrid classes is equivalent to that in traditional in-person classes. Students are satisfied with online activities and benefited from the activities. Willson found that hybrid learning was more time-consuming, while Walker et al. discovered students' confidence in meeting course learning objectives increased. Regardless of the modality, students reported that the course improved their understanding of key concepts and that they were satisfied with their course. Huang examined the internal difficulties and external challenges of a hybrid e-learning programme at a university in Taiwan that used the 'Four Elements' model of 'cost, service, quality and flexibility' and the 'Structure-System-Process paradigm deployment of resources'. Huang argued that with these models in place, the programme was expected to develop a competitive advantage. The above-mentioned studies look at the effectiveness of current HL programmes in particular institutions, rather than considering a hybrid framework that can be used across schools. The majority of these studies also focus on universities. There are few studies of hybrid learning in schools [18].

However, research into HyFlex is still in its infancy. Therefore, little is known about the correlates of unethical student behavior across the different HyFlex attendance modes. Nonetheless, some evidence suggests that although HyFlex learning may be suitable for many, it is not necessarily the right fit for all.

Although many contributing factors to academic dishonesty have been cited in the literature, there is no consensus regarding its primary cause. Some studies have emphasized the role of situational or contextual factors, such as the academic discipline and the learning environment alone or combined. For example, research has found that HyFlex and off-campus courses might be particularly challenging regarding academic integrity for students in science, technology, engineering, and mathematics (STEM) disciplines. Specifically, HyFlex instruction necessitates sound technical and campus support, making it less suitable for subjects that require extensive laboratory work. This notion is strengthened by the sharp increase in file-sharing websites among STEM students during the pandemic. Other studies have focused on individual characteristics, such as students' demographic and personality traits.

In addition, another line of research has focused on the interaction between situational and individual variables as predictors of academic dishonesty.

The present study underscores the value of HyFlex teaching and particularly the use of HyFlex teaching to teach law-abiding leadership and national security within the framework of leadership. It also highlights the importance of conducting evaluation studies to understand the views of the students under HyFlex teaching [19].

**Conclusion.** The presented study showed that this Hyflex hybrid learning format has a significant advantage in providing a detailed study of the material in person, as well as immediate feedback. Even more than that, it was discovered that the Hyflex hybrid learning format is designed so that all classes are held synchronously in person and online, just like the hybrid model, but that students who cannot connect remotely can view the recordings of the classes later. Additionally, this teaching method gives students the freedom to choose the format in which they want to engage and complete their assignments. Benefits include the ability to integrate a range of technologies, combining traditional and digital education systems while utilizing fewer human resources. This synergy makes it possible to better manage students and develop individual educational trajectories, taking into account their interests and skills. The above overview included research into various

experiments and developments with nontraditional learning environments. We need suitable concepts to understand and discuss these developments in both educational research and practice.

These findings are in line with previous research claiming that on-site students and remote students experience courses differently in the hybrid synchronous situation. Nevertheless, this study provided qualitative evidence that the design of the learning space really does matter to the remote experience. Students following the course through live stream without interaction or visibility to the teachers had the lowest engagement scores. Next, the qualitative data in relation to research question showed that one out of three students referred to the set design as being determinant for being engaged during synchronous courses.

HyFlex options may be more effective for students choosing online participation if there is a large group of students who are likely to also be online in a given week. If online participation is considered to be a "second choice" option (perhaps because it can be a lonely virtual space when everyone else is in class), online discussions may be sparse and relatively ineffective as interactive discussions.

Even when students did not choose alternative participation modes often, many reports being very satisfied and pleased that they had the choice to participate in a different mode if they had to (or wanted to). Almost all of the students surveyed preferred a mix of online and classroom participation modes, and most of these students report that they would prefer all of their courses adopt a student-controlled flexible approach to participation.

If hybrid learning is to remain a permanent part of the learning landscape, university leaders will also need to integrate it into their strategic planning efforts. This will mean, among other things, a renewed emphasis on issues of digital equity.

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