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Students' perspectives of a hybrid learning system in Kazakhstani higher education: A case study

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Abstract

Hybrid learning is a relatively new approach in Kazakhstan's educational system. The transition to a new format necessitates a significant amount of effort and restructuring at the universities. The problems of researching the advantages and disadvantages of implementing this kind of instruction in the classroom are very relevant. The study's goal was to investigate students' attitudes towards implementing a hybrid learning environment. A qualitative method of data analysis was applied in the study. 1,186 students participated in hybrid learning at various universities in Kazakhstan. According to the findings, students value the flexibility and convenience of attending classes remotely through a two-way video conference. However, the findings also indicate that this new learning environment faces several pedagogical and technological challenges. These findings emphasize the importance of assisting students in understanding hybrid learning resources and goals thereby creating opportunities for success in hybrid learning. Policymakers in education can use it as a guide to develop policies related to crisis management or inclusive education as well as curriculum documents and resources for hybrid learning.

Keywords: Exploring, Hybrid learning, HyFlex technology, Perspectives, Reflections, Students.

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Contents

Contribution of this paper to the literature
This study contributes to the existing literature by assessing the efficiency, organization and optimization of the hybrid learning model in Kazakhstan in order to identify the advantages and vulnerabilities of this format and students' attitudes towards implementing a hybrid learning environment.

1. Introduction

The current emphasis on hybrid learning (HL) in the educational system is inevitable. (Zhao & Watterston, 2021). Students' endless possibilities for creating their own processes and the advanced technology employed in the planning of hybrid educational activities both demonstrate the multifaceted nature of the hybrid approach. (Heilporn, Lakhal, & Bélisle, 2021). Experts also note that this format offers a new educational experience for students and makes it possible to adapt to various needs. Almusaed, Almssad, Yitmen, and Homod (2023) distinguish between blended learning and hybrid learning. According to them, blended learning combines full-time and asynchronous learning formats whereas hybrid learning combines full-time and distance learning formats.

Hybrid learning technology involves unique management of the student's time while providing him with methodological support through:

1) Individual training can be used with synchronous training which is similar to an online course.

2) Asynchronous learning provides an ideal platform for the implementation of distance learning (Moorhouse & Wong, 2022).

Betty created the hybrid learning platform HyFlex learning. Here, students have the opportunity to choose their learning format: face-to-face, online or mixed form (Lantis, 2022). Some researchers believe that HyFlex training may be attractive to undergraduate and graduate students. Ohio University published a study about their experience with HyFlex training. They found that HyFlex was a good option for training but also found that the technology was not complete. Further research was needed to develop the model (Detyna, Sanchez-Pizani, Giampietro, Dommett, & Dyer, 2023). The effectiveness of hybrid learning versus traditional classroom instruction was compared in these studies which focused on undergraduate students in developing countries (Lazar, Panisoara, & Panisoara, 2020).

The digital learning revolution that Kazakhstan is experiencing has enabled teachers to reexamine themselves and realise that they are more capable of learning and using technology than before even though it is not as privileged as it should be. The function of hybrid teaching particularly at the university level is yet unknown to researchers. Researching the advantages and disadvantages of using this teaching paradigm in developing countries with low socioeconomic levels is very important. Therefore, it is appropriate to look at the problems of effectiveness, structure and optimization of the hybrid learning model in Central Asia in order to determine the benefits and drawbacks of this format particularly in Kazakhstan.

1.1. Problem Statement

Universities in Kazakhstan adopted a blended teaching strategy during the pandemic. However, hybrid learning during the pandemic in our country was carried out spontaneously without a regulatory framework . The degree of inclusion of distance students and their activity (or passivity) depended on the professionalism of the teacher. At the same time, the choice of platforms by specific educational organizations turned out to be spontaneous since there was virtually no time to analyze resources suitable for different subjects and categories of students. A significant part of them was related to the technical equipment of classrooms, portal capabilities, etc. Thus, there were many problems in organizing such a teaching model for teachers and students (Bolatov, Seisembekov, Askarova, & Pavalkis, 2021).

Kazakhstani universities adopting the hybrid approach have shared their systematic experience through open sources. Almost every university offers an online learning environment. A new version of the "hybrid" is coming to universities (HyFlex) (Amirova et al., 2023). A substantial amount of importance is placed on creating specialized classrooms for these types of seminars, complete with cameras, microphones, technical support and other equipment. However, Kazakhstani universities faced a serious problem: how to provide the same full-fledged education both in the classroom and through the Internet? A number of issues emerged including a decline in students' desire for their studies, a decline in their academic performance, the issue of properly assessing their knowledge and competencies and a breakdown in communication between teachers and students. A group of researchers categorizes them as organizational and pedagogical (Baker & Hjalmarson, 2019; Bülow, 2022; Raes, Detienne, Windey, & Depaepe, 2020). Hybrid learning is a relatively new approach in Kazakhstan's educational system. The transition to a new format necessitates a significant effort and restructuring of Kazakhstani universities (Akkari, Seidikenova, Bakitov, & Minazheva, 2023; Nurgaliyeva et al., 2023).

It requires the solution of several issues and the implementation of multiple requirements to make that model which is always more difficult than face-to-face learning. This model requires technical and methodological support. Universities should be involved in their development because clear and understandable norms and requirements (for material resources and certification forms) are required. Thus, the organization of hybrid learning is a challenge for Kazakh universities. A lack of international studies carried out by Kazakh researchers highlights the significance of this research by indicating that our country's specialists have not sufficiently investigated this issue.

1.2. Questions for Research

Q1: How important is hybrid learning according to students?

Q2: How are the practice and effectiveness of hybrid learning perceived by students?

1.3. Objectives

The study's goal was to investigate students' attitudes towards implementing a hybrid learning environment.

2. Literature Review

2.1. Key Aspects of Hybrid Learning

The most significant problem is the distinction between the concepts of hybrid and blended learning. There are many different perspectives on hybrid learning among researchers (DeCoito & Estaiteyeh, 2022; Gillis & Krull, 2020). The advantages of such training are closer peer interaction with each other, involvement in the educational process, a more flexible schedule and interactive learning. Hybrid learning allows students to take classes online while interacting with a teacher (asynchronous learning). Students can learn at their own speed by adjusting their study schedule and level of engagement in class based on their interests and personal preferences. There are several terms for the type of learning that involves the integration of multiple technologies in one manner or another. Hybrid, blended or combination learning (Ayub, Lim, Yeo, & Ismail, 2022; Pandey & Panda, 2023). The various existing models of hybrid (combined) learning are an important alternative to the traditional approach to education. According to researchers, hybrid learning is a combination of traditional, proven educational technologies with a completely new and creative approach. Some researchers believe that a modern higher education teacher would not find greater relevance in the differences between the concepts based only on their quantitative ratio of use (Mourtzis, Panopoulos, & Angelopoulos, 2022; Yin, 2022). The hybrid learning approach has a well-established system developed for keeping records of responses and all learning resources are provided in accordance with the students' skill levels. The flexibility of this model allows institutions to support students' educational and research aspirations even in the face of technical hindrances.

The success of hybrid learning is due to its main advantages: flexibility in training (Kohnke & Moorhouse, 2021; Selvaraj, Radhin, Nithin, Benson, & Mathew, 2021), availability of training (Haleem, Javaid, Qadri, & Suman, 2022), effective resource management (Singh, Steele, & Singh, 2021), reducing absenteeism and effective feedback (Patra, Asghar, Chaudhary, & Ravi, 2022).

Educational flexibility may be quite helpful after COVID-19. How will students or teachers who are suffering from a cold feel in class? Additional sanitary regulations will be needed in order to reduce the spread of germs in educational institutions. However, teachers and students will be able to participate in classes online if classrooms are equipped with hybrid learning resources.

2.2. Related Studies

Researchers have severely criticized hybrid learning despite the fact that it has emerged as one of the most advanced areas of university education. A significant number of analytical reviews have been devoted to a similar concept "blended learning" in which the hybrid learning format is only indirectly characterized. According to Bashir, Bashir, Rana, Lambert, and Vernallis (2021), the unfulfilled need for higher education in developing countries which determines the direction of student migration to higher-income countries has led to a rising significance for hybrid learning. Hybrid learning is the result of an open combination of learning activities. It must strike the proper balance between the various activities that comprise it. There are gaps in the existing literature despite the abundance of hybrid learning research. Hybrid learning has to be recognized as a controversial phenomenon in higher education despite the massive experience of its forced use gained by universities during the period of strict epidemiological restrictions (Maatuk, Elberkawi, Aljawarneh, Rashaideh, & Alharbi, 2022) and the content of the concept of "hybrid learning" remains debatable. Consensus has not yet been reached not only regarding models and technologies for the practical implementation of hybrid learning. According to researchers, hybrid learning is a new "myth" and a temporary solution or whether it is a path to updating the entire education system. There are still unanswered questions about what content is included in the concept of hybrid learning, what the methodological and didactic foundations of hybrid practice are and whether such learning can be considered an independent entity. The forms of independent online learning and traditional classroom learning with digital tools are not new. They are simply known by different names. Organizing higher education during and after the pandemic has added to the theoretical plan of discussion issues such as practical hybrid learning implementation in educational programs, technical solutions, assessment tools, educational content etc.

Coman, Ţîru, Meseşan-Schmitz, Stanciu, and Bularca (2020) discovered that the existing research on hybrid learning is exploratory with a focus on descriptions of the experiences of students, the implementation of organizational principles and technology development following a review of the majority of related studies on this topic. Chu and Li (2022) studied the challenges of hybrid learning and reported that the major challenges faced by students are the lack of a change in activity and the constant use of electronic media which negatively affects physical and psychological health and leads to a loss of interest in learning and a deterioration in academic performance in the disciplines. Li et al. (2023) concentrated on thematic themes such as hybrid learning outcomes, learning design, interaction with teachers and students, comparison, use of technology and other issues. When studying in a physical, institutional, online or virtual environment, students use the engagement techniques they believe will work best for them. Okoye, Rodriguez-Tort, Escamilla, and Hosseini (2021) evaluated the efficacy of incorporating hybrid learning technology into the educational process. According to the survey results, the majority of students are pleased with the new way of organizing the educational process. Al-Enzi, Almutawaa, Al-Enezi, and Allougman (2023) reviewed the theoretical foundations of organizing a hybrid lesson at a university while also emphasizing the authors' practical experience. The study's intended outcome is the systematization of methods for using traditional and innovative pedagogical methods and technologies in the planning and organization of hybrid classes. Dziuban, Graham, Moskal, Norberg, and Sicilia (2018) criticize hybrid learning researchers for being imprecise while Min and Yu (2023) stated that contextual relevance is increased by fundamental diversity. Disagreements lead us to the conclusion that regardless of how they are implemented, an appropriate combination of educational technologies is necessary for hybrid learning to operate well. It is important to correctly coordinate the structural elements of the lesson with each other to achieve the most effective working environment which encourages and motivates students to work for a long time to ensure the pedagogical effectiveness of a hybrid lesson. In characterizing a hybrid educational session at a university, Acevedo, Ochoa, and Obregon (2020) believe that there is an integration of technologies, methods, techniques of work of the teacher and students and teaching aids characteristic of traditional and innovative approaches regardless of the form in which

students participate in the educational process (some are taught through contact and some through video communication).

Crary, Huseth-Zosel, and Thompson (2021) argue that the integration of the classroom (contact) and synchronous distance format within one educational event is considered a key criterion for hybrid learning with the student's subjectivity as its essential basis. The most effective form of learning was hybrid learning. However, Amhag, Hellström, and Stigmar (2019) believe obtaining all the benefits of both online and offline learning necessitates careful planning and adherence to a number of rules in order to prevent the issues that come with online learning. Dhawan (2020) defines hybrid learning as a combination of traditional and computer-assisted learning. The role of technology in hybrid learning necessitates a delicate balance of traditional and innovative pedagogical initiatives (Ustun & Tracey, 2020). However, it is impossible to ensure the effectiveness of such training without proper methodological reconfiguration of the educational process. HL requires specific didactic planning. The ideas about the conceptual advantages of the HL format make it possible to rationally assess the feasibility of using the hybrid format in different segments of higher education.

3. Method

3.1. Research Method

The study's data analysis method was qualitative in nature. Quantitative analysis is typically used to measure differences between groups (experimental and control groups) and relationships between variables and to test hypotheses in a scientifically rigorous manner (Barroga & Matanguihan, 2022). Qualitative data analysis can be used to analyze people's perceptions and feelings about an event or situation (Aspers & Corte, 2019; Busetto, Wick, & Gumbinger, 2020). Students at Kazakhstani universities provided the data.

3.2. Participants and Study Design

The students from three Kazakhstan universities (Almaty, Kazakhstan) during the academic year 2022-2023 were recruited to take part in the research project. The study sample consisted of 1,186 students aged 18 to 25 years old. Respondents are students from the pedagogical, humanities, technical and natural sciences.

3.3. Measures

General sociometric indicators were collected: gender, age, course of study, the level of preparation for the higher education program and direction of study (see Table 1).

Table 1. Participants' descriptive data.

Characteristics of a participant's		Quantity	Sample
Gender	Female	883	85.76%
	Male	303	14.24%
The areas of study	Pedagogical	595	50.9%
	Humanitarian	307	21.62 %
	Technical	105	8.34 %
	Natural science	179	19.14 %
Student training course	2 course	640	50.2%
	3 course	389	27.68%
	4 course	157	22.12%

The attitude of the study participants towards the hybrid form was revealed using the main question, "Can hybrid learning completely replace the traditional classroom setting?" Two contrasting groups were formed: Group 1: "Respondents who believe hybrid learning will completely replace traditional learning" (n=233) and Group 2: "Respondents who believe that hybrid learning cannot completely replace traditional learning" (n=953). The average age is 22.47 years. 85.76% of the study participants were women and 14.24% of the study participants were men. 50.9% of study participants are studying in pedagogical areas of training. Students with 2-4 undergraduate courses comprised the sampling frame.

3.4. Research Approach

The methodology for developing hybrid learning consists of three stages and is a holistic process that was adapted to the objectives of the universities. The organization of a course and the content of a hybrid learning model are shown in Figure 1.

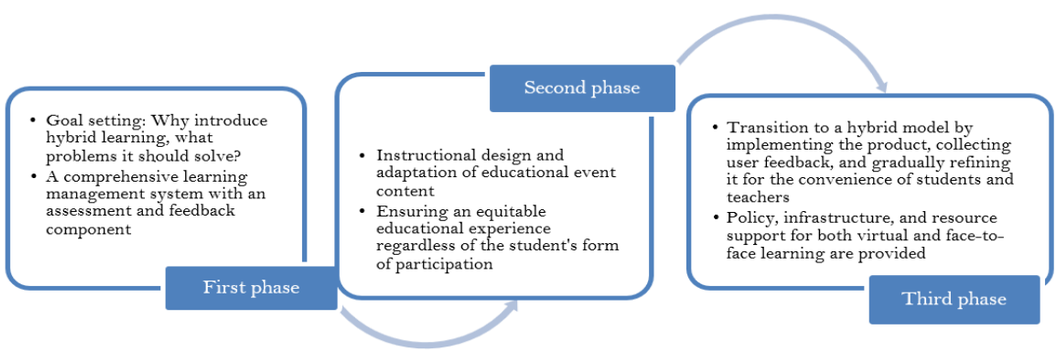

Figure 1. The organization of a course and the content.

The session was held once a week from 15:00 to 18:00 and lasted 13 weeks. A curriculum supporting hybrid learning was created by developing procedures for prioritizing and arranging the material. Teachers arrange and

direct learning based on two factors: the curriculum and the needs of the students. The content is driven and shaped by the pedagogical approach (also known as teaching and learning methods).

3.4.1. The General Principle

Educational experiences for online and offline students minimize the difference in perceived educational outcomes.

The work was based on four basic lesson scenarios:

- Lecture.
- Discussion.
- Group work.
- Project presentation.

Development of methodological guidelines based on user interface (UI) UI/UX, user experience (UX) testing and based on the results of trial classes and events.

3.4.2. Features of Pedagogical Design in a Hybrid

Preparation:

- The division of the group into offline and online participants is determined in advance (either a planned rotation from lesson to lesson or a fixed distribution for the entire course).
- Organization and preparation of classes.
- Switching between formats during a lesson is limited.
- Moderation of any discussion is required.

Requirements for students:

- Discipline for starting classes for all participants (online and offline).
- Enable cameras for online participants in all classes.
- The issue for discussion was only "invitation" from the teacher.

Thus, the methodology was based on the principles of teaching methodology. Without understanding the pedagogical request, educational goals and how the learning process occurs (the science of learning), it was impossible to create a high-quality digital solution for the educational process.

Teachers were warned that this approach required a completely different level of responsibility on the part of teachers and a different way of organizing the teaching. The key conditions for the success of the hybrid format were met: the subjectivity of students, their awareness and independence. They had to be aware of the reasons behind and goals of their studies as well as properly evaluate their skills in order to select the most appropriate learning format. Therefore, students planned their studies and chose a format that was convenient for them.

Several key components of physical and digital classrooms for hybrid learning were provided:

- Image of high quality: The cameras in the classroom were not only for teachers but also for students. They could also display online participants on the screen in the classroom because all participants would have to communicate with each other during classes. For this purpose, screens, monitors, projectors and cameras were installed.
- Transmission of visual information: Digital solutions were chosen for the teamwork of online and offline participants. Such a medium could be a university Learning Management System (LMS) and a video conferencing service.
- Technical management and support for setting up the software, combining them and managing equipment during the lesson. The teachers were prepared and an assistant was also present during the lesson in case of technical failures. It was planned how to act if the online audience had problems (the lesson continues for offline participants).

Each lesson included both theory and practice. The theory was presented in the form of presentation slides and the practice included hands-on exercises and group collaboration. Practical exercises imply the mandatory use of the board. The teacher organised a hybrid class where all students may participate by using any suitable online whiteboard or programme such as a graphing calculator with a screen acting as a whiteboard. The teacher also broadcasts the field of this board onto the interactive screen in the classroom at the same time in order to connect "remote" students and a link to such a board is made at the start of the session and delivered to the meeting chat.

Experts examined teaching strategies and equipment operation as well as how convenient it was to use the classroom through detailed observations. In the hybrid classroom during the testing sessions, it was important to observe all participants in the process and help resolve questions and problems that the study participants faced. The main feature of observation is not to miss the slightest detail of a new experience for the teacher and student. All observations were recorded and discussed for improvements and possible options for their implementation in the next lesson.

3.5. Instruments and Data Analysis

A special Google Form survey titled "Attitude towards hybrid learning" was created and used to gather data on students' attitudes towards hybrid learning across a range of courses, career paths and levels of preparedness for postsecondary education.

4. Results

The results of the "attitude towards hybrid learning" survey are presented below in Table 2.

Table 2. Comparative characteristics of hybrid learning assessment.

Scales	Hybrid learning can replace full-time learning (n=233)		Hybrid learning cannot replace full-time learning (n=953)	
	Range/Scale dimension	Average indicator	Range/Scale dimension	Average indicator
The effectiveness of hybrid learning.	1/10	8.04	1/10	6.45
The effectiveness of full-time training.	1/10	8.02	1/10	9.24
Ability to plan time.	1/5	5.84	1/5	5.44
The opportunity to study without leaving your home or office.	1/5	5.42	1/5	4.73
The individual pace of learning.	1/5	5.86	1/5	4.45
Opportunity to obtain unique knowledge.	1/5	5.65	1/5	4.66
Quality of the educational process.	1/5	5.58	1/5	4.34
The value of theoretical knowledge acquired through hybrid learning.	1/10	8.67	1/10	7.84
The value of practical knowledge gained through hybrid learning.	1/10	8.64	1/10	7.45
The ability to quickly acquire new knowledge.	1/5	5.47	1/5	4.68
There is a large selection of courses.	1/5	5.46	1/5	4.67
Accessibility for students with disabilities.	1/5	5.34	1/5	4.29
There is no need to communicate with other students.	1/5	4.56	1/5	3.48

The average score on the "hybrid learning effectiveness" scale (dimension 1/10) in the first group is significantly higher (8.04) than the average score in the second group (6.45). The average score in the second team (9.24) is higher than in the first team (8.02) on the "effectiveness of full-time learning" scale which has a dimension of 1/10. The average score in the first group on the "ability to plan time" scale which has a dimension of 1/5 is significantly higher (5.84) than the average score in the second group (5.44). The average score in the first group (5.42) on the "opportunity to study without leaving home or office" scale which has a dimension of 1/5 is higher than the average score in the second (4.73). The average score in the first team on the "individual pace of learning" scale with a dimension of 1/5 is higher (5.86) than the average score in the second team which counts 4.45. The first team's average score on the "quality of the educational process" scale which has a dimension of 1/5 is higher (5.58) than the second team's average score (4.34). The first team's average score on the "value of theoretical knowledge acquired through hybrid learning" scale which has a dimension of 1/10 is significantly higher (8.67) than the second team's average score (7.84). The average score in the first team (8.64) is higher than the average score in the second team (7.45) on the "value of practical knowledge gained through hybrid learning" scale which has a dimension of 1/10. The first team's average score on the scale "ability to quickly acquire new knowledge" which has a dimension of 1/5 is significantly higher (5.47) than the second team's average (4.68). The first team has a higher average score on the "large choice of courses" scale (5.46) than the second team which counts 4.67. The average score on the 1/5 scale for "accessibility for students with disabilities" is higher in the first (5.34) than in the second (4.29). The average score on the 1/5 scale "There is no need to communicate with other students" is higher in the first (4.56) than in the second (3.48).

The obtained level of significance showed highly significant differences between the groups and their attitude towards hybrid learning with a probability of 99%.

Table 3. Disadvantages of hybrid learning

Indicators	Hybrid learning can replace full-time learning (n=233)		Hybrid learning cannot replace full-time learning (n=953)	
	Participants	%	Participants	%
It is difficult for me to respond.	92	40	313	34
Technical problems, failures in the internet and programs, inconveniences of learning platforms and their quality.	29	12	95	11
There are no learning disadvantages.	25	11	13	2
The complexity of organizational issues, incompletely adjusted training mechanism.	20	9	70	7
Untrained teaching staff and lack of necessary equipment.	13	7	21	2
Lack of prompt feedback from teachers, communication and live communication with other students and teachers low socialization.	14	7	172	18
Low effectiveness of training and low level of knowledge and quality of training, difficulty in perceiving and assimilating information by students and slow mastery of the material.	12	6	121	10
Problems with self-organization and a low level of responsibility.	11	4	67	7
Lack of internet or necessary equipment among students.	5	1	35	3
Lack of practice	5	1	18	2
Affects health and causes of vision impairment.	4	1	24	3
The cost of hybrid training is equal to full-time.	3	1	4	1

The survey "attitude towards hybrid learning" included two open-ended questions in addition to closed-type questions to which participants were required to provide an in-depth reply in free form. The first question asked respondents to list the disadvantages of hybrid learning (see Table 3).

29 respondents in the first group mentioned "technical problems, failures in the internet and programs, inconveniences of learning platforms and their quality" as learning disadvantages. According to 25 respondents, there are no learning disadvantages. Learning disadvantages such as "complexities of organizational issues, an incompletely adjusted training mechanism," insufficient control over students' mastery of the program and rank third among first-group respondents. These learning disadvantages were identified by twenty respondents. 5 students stated "lack of internet or necessary equipment," the same number stated "lack of practice," 4 respondents stated "affects health, vision impairment" and only 3 respondents stated "the cost of hybrid learning is equal to full-

time learning." Some respondents in the first group found it difficult to answer this question or did not respond at all. There were 92 of them which was nearly half the number of the first group (40%).

The main disadvantage for 172 respondents in the second group is a lack of prompt feedback from teachers, communication with other students and teachers and low socialization. The second group of 121 respondents identified disadvantages such as low training efficiency, low knowledge and training quality, students' difficulty perceiving and assimilating information and slow mastery of the material. The second group of 95 respondents agreed with the first group and also mentioned technical issues, failures in the internet and programs and inconveniences with learning platforms and their quality. The main distinction is that these drawbacks rank first for respondents in the first group and third for respondents in the second group. In the second group, 18 students claimed "lack of practical training," while 21 respondents mentioned "technically unskilled teaching personnel." 14 respondents indicated that they see no disadvantages in this type of training. 4 respondents are dissatisfied with the cost of training. Some respondents in the second group struggled to answer this question or did not respond at all. There were 313 of them which was nearly half the number of the second group (34%).

5. Discussion

According to the findings, students in the first group performed better with hybrid learning, they faced fewer problems with the new format of learning and many of them reported improved performance during the learning. These results are consistent with those of other researchers by Tong, Uyen, and Ngan (2022); Manoharan, Hua, and Sultan (2022); Amir et al. (2020) and Dias et al. (2023). Furthermore, this group has a favorable attitude towards hybrid learning. Many of them support the idea of mixed learning in the future. More than half of those in the second group believe that the hybrid format of education is less effective than full-time education which is consistent with findings from other researchers by Wei, Lin, and Chang (2023) and Laifa, Giglou, and Akhrouf (2023). Students perceived an interactive experience with hybrid learning positively. They were constantly communicating with one another and with the teacher, discussing interesting topics, learning new information and gaining practical skills. Feedback was the primary component of formative assessment. It contributed to student motivation by allowing them to exercise self-control and self-analysis of the results obtained during training. This is consistent with the argument made by Rakoczy et al. (2019) and Ismail, Rahul, Patra, and Rezvani (2022). Furthermore, feedback enabled the teacher to immediately identify knowledge gaps, identify weaknesses in students' assimilation of educational material, determine aspects that required additional clarification or more exercises and prepare corrective tasks to eliminate identified knowledge gaps which is consistent with findings from other researchers by Abragan, Abarcas, Aquino, and Bagongon (2022) and Granberg, Palm, and Palmberg (2021).

There are noted differences in the wishes of students regarding training in a hybrid format. The wishes concern improvements in technical components (refinement of educational platforms, improvement of technical equipment, etc.). Students are also aware of the value of properly organizing the relationship between learners and teachers including the need to maintain dialogue and ensure interactive interaction. Several technical issues were discovered including a poor internet connection, a malfunctioning camera or microphone and background noise. It is essential to discuss psychological cases. Teachers expressed concerns about the lack of visual contact (many students turn off their images or post a photo of them) and the inability to control what the student is doing at any given time. Students who are connected online face psychological difficulties as a result of embarrassment or a reluctance to turn on cameras (Hosszu, Rughiniş, Rughiniş, & Rosner, 2022; Wut & Xu, 2021).

Teachers faced methodological challenges as well because hybrid classes necessitated more careful planning, more time for preparation, the creation of different forms of work and types of assignments for the students in the classroom and online and difficulty organizing discussions and checking work. There was also a lack of teacher readiness for the new educational process conditions associated with the introduction of the new learning paradigm, the core of which is the digital educational environment. Thus, hybrid learning can be effective only with excellent broadcast quality, identical role positions for students, adapted interactive interactions, the effect of the listener's presence in the audience and the highest qualifications of the teacher (Ahmed, Bhuiyan, Helal, & Banik, 2020; Wang, Sun, Wang, & Robson, 2021).

6. Recommendations

Several design recommendations have been developed to address the challenges of this learning.

1. First and foremost, hybrid means methodology and pedagogy and secondly, technological solutions. There are basic technical requirements that make this format impossible but switching to it is pointless if the teaching staff does not require it.

2. Develop a flexible lesson schedule, use an individual approach with students and use a differentiated approach to the development of practical tasks.

3. Aiming for a course to be hybrid, 40–80% of the course content should be replaced with online activities.

4. Provide feedback upon student requests through the university's educational portal or face-to-face student consultations.

5. Develop instructions for working with materials as well as provide tasks for independent work. For example, writing an essay, performing productive and reproductive exercises, project work in the language, etc.

7. Conclusion

This study examined students' experiences and perceptions of hybrid learning design and implementation. Furthermore, the result revealed that the organization of hybrid learning required special approaches to pedagogical design and adaptation of the content of educational events. Therefore, it was necessary to ensure an equivalent educational experience regardless of the form of student participation. In addition, the universal concept of a hybrid classroom was developed which was deployed and installed on the campuses of several universities and was successfully tested in the educational process. A thoughtful approach to the composition of the equipment made it possible to minimize the number of calls to technical support.

The pedagogical design of the courses took into account equal learning opportunities for online and offline students making it possible to stimulate the involvement and interaction of the two groups which led to a revision of the lesson scenario, features of the choice of digital tools and assignment options. At the same time, discipline of behavior was important on the part of the students (for example, mandatory participation with the camera on) including creating that very effect of full presence. The inclusion of these rules of the game explicitly in a kind of "learning agreement" with students contributed to improving the experience of the hybrid process for all participants. The majority of students believe that hybrid training improves the educational process by increasing the availability of information tailored to their specific needs. According to the survey, students noted the individualization of the pace and rhythm of mastering new educational material. They also pointed to an increase in their motivation, strengthening social activity, increasing the share of independence in studying and mastering educational material and conducting self-control and self-analysis.

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