

# What is the teacher's perception towards using blended learning during Covid-19? Comparative study: Israel, Jordan, Indian, and Czech Republic<sup>1</sup>

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## Abstract

The paper aimed to identify the perceptions of Israeli, Jordanian, Indian, and Czech Republic teachers about using blended learning during COVID-19. A quantitative method was adopted in which a questionnaire was used to collect the data from (1498), from Israel (320), Jordan (338), Indian (480), and Czech (360) teachers. The questionnaire contains 30 items divided into three dimensions: educational dimension, learning dimension, and educational environment dimension). The results of this study showed a high degree of use of blended learning among Israeli teachers, a moderate one among Jordanians, and a low among It also showed statistically significant differences attributed to gender and the type of school among Israeli teachers. Contrary to the Jordanians and Czechs, all the countries realize the potential of blended learning to improve educational outcomes. We recommend that challenges such as infrastructural restrictions, teacher training, and equal access to technology must be addressed to maximize the benefits of blended learning in these conditions. The authors concluded that the implementation of Bl as a learning strategy depends on two factors: the readiness of the teachers to implement it and the willingness of the system to meet the needs.



## 1 Introduction

Blended learning—which mixes in-person and online instruction—has gained popularity in various educational environments. A unique teaching approach, blended learning uses technology to meet the demands of the current world. According to Singh (2003), the foundation of the BL model is the notion that learning is a continuous process rather than a one-time occurrence. BL offers several advantages over traditional learning distribution methods, including Marsh (2012) and Ghimire (2022).

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Beginning in 2020, numerous nations worldwide will shut down most industries, including the education sector, due to unsettling circumstances brought on by the COVID-19 pandemic. As a result of these shifts, teachers in Israel and Jordan adopted new teaching philosophies and techniques to serve their students better in these uncertain times. E-learning has become a vital tool for enhancing the educational process (Duman, 2023; Hartono & Ozturk, 2022; Gambo & Shakir, 2022). The phrase "e-learning" encompasses the fields of online training, online education, and technology-assisted instruction. E-learning can be divided into two categories: synchronous and asynchronous. They both feature a physical separation between the students on one side and the teacher on the other (Cortez, 2020). According to educators, the purpose of the learning process is to satisfy the learner's needs on a personal and societal level. This indicates that it is more comprehensive and extensive than only providing the learner with information.

Both students and teachers can study flexibly with blended learning. Graham (2006) states that blended learning systems mix in-person instruction with computer-mediated training. Wendy Porter, Graham, Spring, and Welch (2014) list the following

as examples of integrated learning: According to Garrison and Kanuka (2004), blended learning is "the purposeful blending of in-person classroom learning experiences with online learning activities." As a result, we can say that the core elements of blended learning are widely accepted (Bursa, 2023; Al-Hadhoud et al., 2017).

This study sought to understand how Israeli, Jordanian, and Czech teachers felt about using blended learning during COVID-19.

## 1.1 Background theory

### 1.1.1 Blended learning

According to Poon (2014), there are many definitions of blended learning, but the most common one is the blending of learning in both physical and virtual environments. The blended learning environment also provides the chance to use time more wisely and adaptably by extending instruction time outside of the classroom walls.

By definition, blended learning combines virtual and non-virtual interactions between teachers and students, utilizing the benefits of both educational philosophies. Combined learning has made advanced placement possible at all levels in educational institutions. Its many parts assist in bringing about the desired change in the educational system (Grgurovi, 2014; Dankers et al., 2022; Gault & Cuevas, 2022; Perera et al., 2020). Blended learning, in the context of education, refers to courses that integrate online and traditional face-to-face class activities in a planned, pedagogically useful manner, with some face-to-face time replaced by online activity. Its primary purpose is integrating the synchronous classroom and asynchronous online paradigms (Thester, 2005).

Studies by Bryan and Volchenkova (2016), Halverson and Graham (2019), Rao (2019), Cortez (2020), Saboowala and Manghirmalani-Mishra (2020), and Zalamounová (2022) have all demonstrated the benefits of mixed learning. These studies on blended learning have been done, but none discuss the teachers' readiness. Due to COVID-19, teachers are abruptly instructed to get used to this style of instruction. Since most schools were abruptly closed in March 2020, there has been no face-to-face teacher e-learning orientation. One of the cutting-edge ideas in the realm of education is blended learning. There was general agreement that blended learning refers to the

combining or merging traditional and electronic learning. Blended learning is an essential process that is ongoing and continually renewed, not merely a one-time event that comes to an end (Sofia et al., 2014). Blended learning is the efficient blending of several teaching models, delivery strategies, and learning styles, according to Saboowala and Manghirmalani-Mishra (2020).

Kim and Kwon (2019) surveyed Korean instructors and found that teachers had generally positive feelings toward blended learning. Several studies have examined instructors' perspectives on blended learning, with conflicting results. They discovered that students' academic performance improved and blended learning made more individualized learning possible. Some teachers voiced concerns about blended learning, including a lack of training and support, student opposition, and problems with technological integration, in a survey of American educators done by Bell and Federman (2013). According to some educators, blended learning boosts student engagement and motivation.

Inan and Lowther (2010) evaluated teachers' perceptions of blended learning in Turkey. They found that teachers with good attitudes towards technology and who had received training in technology-related topics were more likely to have favorable attitudes toward blended learning. Overall, various factors, such as instructors' training and experience and the degree of support offered by their institution or school, might affect their attitudes toward blended learning. These elements must be considered while establishing blended learning initiatives and giving instructors enough materials and training to support their professional development (Šalamounová, 2022).

### *1.1.2 Blended learning in Israel, Jordan, Czech Republic*

In response to the COVID-19 pandemic, Israel, Jordan, and the Czech Republic have all utilized blended learning as a strategic distance education method.

#### **1.1.2.1 Israel**

The educational system in Israel also makes use of blended learning. Like other countries, blended learning combines traditional in-person instruction with online learning components. It has been adopted in Israel at all educational levels, from primary schools to universities (Maoz et al., 2019). The government has taken the initiative to incorporate technology into education, and blended learning is seen as a way to enhance educational opportunities and provide students with greater flexibility. Digital platforms and learning management systems are frequently used in blended learning in Israel. These portals provide a central location for communication, collaboration, course materials, and assignments.

The Israeli Ministry of Education has also taken steps to promote blended learning through various initiatives and projects. For instance, the Education Ministry has developed programs to provide teachers with professional development and training in digital pedagogies and tools (Ministry of Education Israel, 2021). These programs aim to allow teachers to successfully incorporate technology into their classrooms (Shamma, Strongoli, 2023).

The Israeli Ministry of Education has encouraged blended learning through several initiatives and projects. For instance, the Education Ministry has introduced initiatives to offer teachers professional development and training in digital pedagogies and tools. With these initiatives, we hope to give instructors the tools to successfully incorporate technology into their classrooms (Zviran & Morgenstern, 2020).

#### **1.1.2.2 Jordan**

Since the late 1990s, blended learning has also become popular in Jordan as a type of online education. The Jordanian Ministry of Education has aggressively pushed blended learning through projects and programs. These initiatives seek to provide teachers with chances for professional growth and offer them the tools they need to effectively integrate technology into their classrooms. The ministry promotes using online learning tools and materials in classrooms nationwide (UNICEF, 2022). Personalized learning opportunities, increased student involvement, and the adaptability to meet various learning styles are just a few advantages of blended learning in Jordan. Additionally, it promotes acquiring digital literacy abilities, which are crucial in the current digital era (Alsarayreh & Ayasrah et al., 2022).

### **1.1.2.3 Czech Republic**

Most educators attempted to adapt the face-to-face teaching approach to the online setting during the early stages of the COVID-19 epidemic (Neumajer, 2020). They quickly discovered that education could not be used this way over the long term and began using a mixed-learning strategy (Brdička, 2020). Although the modern era has changed Czech education regarding digital literacy, some teachers cannot still implement blended learning within digital pedagogy. According to the findings of the Czech School Inspectorate's research (Lebeda et al., 2022), the school's role is to assist pupils in using ICT tools, not to restrict them. Students should actively use ICT resources to complete assignments prepared in advance, conduct information searches, and handle various data. This is how blended learning should be used in the Czech Republic. (Pavlas et al., 2021b; Havelková & Janak, 2022).

### **1.1.2.4 India**

The development of blended learning in India has been influenced by a series of phases corresponding to the ever-changing nature of the educational environment and the integration of technology into conventional teaching approaches. Adopting blended learning is fraught with significant difficulties, particularly in developing nations like India. India is the nation with the biggest child population in the world, even though it is the seventh-largest country. However, India is undeveloped regarding the availability of blended learning and its optimization (Kundu, 2018). 2020's COVID-19 epidemic was a major catalyst that forced colleges and universities to shift to remote and online learning quickly. Using synchronous and asynchronous online resources became necessary as blended learning became the norm to maintain continuous educational continuity. Problems in India include a lack of infrastructure, instructors who have not received enough training, a high rate of teacher absenteeism, and poor levels of responsibility and motivation among teachers. Government initiatives have continued to emphasize the value of digital education, most notably the National Education Policy (NEP) 2020. With the help of programs like SWAYAM, which offers excellent online courses, blended learning has become increasingly important in changing India's educational environment. However, blended learning might progress significantly by capitalizing on several significant benefits. The diverse development of blended learning in India signifies a change toward an education system that is more adaptable and technologically integrated.

### ***1.1.3 Challenges of blended learning***

According to many research, blended learning has three key difficulties (Jumani et al., 2018; Boelens et al., 2017; Alam, et al., 2020; Reimers, 2020; Havelková & Janak, 2022; Kaur, 2013; Wahyuningsih & Afandi, 2023; Prasad et al., 2018; Balolong, 2022).

The availability of resources might be a problem with blended learning. Outside the classroom, students must use technology they might not have access to at home. Similar to this, due to restrictions on school spending, instructors might not be able to access the resources they require locally. With blended learning, teachers must also take the initiative, as there are no official channels for implementing the idea.

#### 1.1.3.1 Technical challenges

Although getting technology to function on networks is a crucial initial step, the technology problems discussed here are more about guaranteeing the program's success by leveraging and supporting relevant technologies (Reimers et al., 2020).

1. Ensuring that your participants can use the technology effectively.
2. Refusing to use technology just because it is accessible (Akçayr & Akçayr, 2018; Hofmann, 2011).

#### 1.1.3.2 Organizational challenges

Management typically feels that blended learning is the ideal way for training programs, but they are unaware of how tough this process is and how much more thought is required than for an individual program. Examples of organizational challenges are Maruni et al. (2015), Jumani et al. (2018), and Reimers et al. (2020).

1. Dispelling the myth that blended learning is ineffective compared to face-to-face instruction.
2. Changing the facilitator's responsibilities.
3. Controlling and keeping track of participant progress (Hofmann, 2011).

#### 1.1.3.3 Instructional design challenges

Technology installation is typically emphasized when learning technologies are implemented, leaving insufficient time and money to create the essential material to generate a successful program. Maruni et al. (2015), Reimers et al. (2020), and Listiana et al. (2019) highlight the challenges of instructional design.

1. Considering how to teach rather than merely what to teach.
2. Aligning the ideal delivery method with the performance goal.
3. Avoid just "talking at" users while creating interactive online content.
4. Ensuring participant dedication and execution of "non-live" aspects. Ndioho and others (2012).
5. Ensuring the blend's components are coordinated (Hofmann, 2011).

#### 1.1.3.4 Research questions

1. What are the perceptions of using blended learning during the COVID-19 Pandemic among Israeli, Jordanian, and Czech Republic teachers?
2. Are the perceptions of using blended learning reported by Israeli, Jordanian, and Czech Republic teachers attributed to gender and school-type variables?

## 2 Method

### 2.1 Research design

The study adopted a descriptive survey method; a questionnaire was used to collect the data and distributed electronically in 3 countries. The total sample of the study included (509) teachers from Israel (160) and (169) Jordanian, Czech Republic (180).

### 2.2. Research tool

The present paper employed the Bribal et al. (2018) questionnaire to collect the data. The questionnaire consisted of (35) items, for the current study (30) items were adopted and translated

into Hebrew, Czech, and Arabic to get more accurate responses from the participants

The questionnaire contains 3 dimensions: educational dimension, Learning dimension, and educational environment dimension. the validity of the internal consistency was checked by calculating the correlation coefficients between the items and the instrument, The correlation of the questionnaire items ranged between (0.245–0.765), Cronbach Alpha: (0.897).

**Table 1** Reliability coefficients of the research

| The dimension                         | Cronbach Alpha Coefficients |
|---------------------------------------|-----------------------------|
| Educational dimension                 | .885                        |
| Learning dimension                    | .865                        |
| The educational environment dimension | .760                        |
| Total                                 | .897                        |

Table 1 shows that the values of reliability coefficients were high. The Cronbach alpha value of the educational dimension was (.885), the learning dimension (.865), and the educational environment dimension was (.760). The Cronbach alpha of the instrument was (.897), which indicates the instrument's reliability is high.

### 3. Results and discussion

**Table 2** Demographic information of the participants

| Variables                 |              | Israel | %     | Jordan | %     | India | %     | Czech Republic | %     |
|---------------------------|--------------|--------|-------|--------|-------|-------|-------|----------------|-------|
| Gender                    | Male         | 146    | 45.62 | 153    | 45.26 | 158   | 32.91 | 137            | 38.05 |
|                           | Female       | 174    | 54.37 | 185    | 54.73 | 322   | 67.08 | 223            | 61.94 |
| Authority for Supervision | Governmental | 150    | 46.87 | 178    | 52.66 | 260   | 54.16 | 195            | 54.16 |
|                           | Private      | 170    | 53.12 | 160    | 47.33 | 220   | 45.83 | 165            | 45.83 |

Table 2 represents the authority for supervision and gender in Israel, Jordan, India, and the Czech Republic. Authority for supervision includes (46.87%), Jordan (52.66%), India (54.16%), and the Czech Republic (54.16%) for government, along with Israel (53.12%), Jordan (47.33%), India (45.83%), and the Czech Republic (45.83%) for private. Gender includes Israel (45.62%), Jordan (45.26%), India (32.91%), and the Czech Republic (38.05%) for males, along with Israel (54.37%), Jordan (54.73%), India (67.08%), and the Czech Republic (61.94%) for female.



**Table 3** Means and standard deviations of the perceptions of using the blended learning strategy, Israeli, Jordanian, and Czech Republic teachers

| Country |   | Israel |      |       | Jordan |      |       | India |      |       | Chez Republic. |      |       |
|---------|---|--------|------|-------|--------|------|-------|-------|------|-------|----------------|------|-------|
| No.     | Items   | Std.   | Mean | Level | Std.   | Mean | Level | Std.  | Mean | Level | Std.           | Mean | Level |
| 1       | The technical assistance I require to implement the blended learning method in my teaching is being provided.     | .914   | 3.94 | H     | .68    | 3.4  | M     | .915  | 2.54 | L     | 1.13           | 2.25 | L     |
| 2       | My method of instruction aligns with a blended learning method.   | .875   | 3.99 | H     | .70    | 3.52 | M     | .876  | 2.59 | L     | 1.30           | 3.28 | M     |
| 3       | I make every effort to incorporate classroom activities and techniques together.                                  | .802   | 4.08 | H     | .80    | 3.17 | M     | .803  | 3.08 | M     | 1.32           | 3.09 | M     |
| 4       | My achievement of the class goals is helped by the method of blended learning.                                    | .897   | 3.97 | H     | .75    | 3.42 | M     | .898  | 2.97 | L     | 1.38           | 3.08 | M     |
| 5       | I employ data display devices in my teaching environment.   | 1.075  | 3.77 | M     | .69    | 3.48 | M     | 1.076 | 2.77 | L     | 1.37           | 2.15 | L     |
| 6       | The blended learning technique somewhat aids me in doing education justice.                                       | .925   | 4.12 | H     | .7n5   | 3.39 | M     | .929  | 3.12 | M     | 1.36           | 3.25 | M     |
| 7       | Employing a mixed method of learning advances professional growth.  | .924   | 4.09 | H     | .75    | 3.43 | M     | .926  | 3.09 | M     | 1.30           | 2.78 | M     |
| 8       | Utilizing a blended learning approach facilitates a more structured delivery of the course.                       | .897   | 3.91 | H     | .73    | 3.37 | M     | .897  | 2.91 | L     | 1.26           | 3.08 | M     |
| 9       | Using a blended learning approach improves my collaboration with other subject matter experts.                    | .959   | 3.84 | H     | .70    | 3.38 | M     | .953  | 2.84 | L     | 1.27           | 3.37 | M     |
| 10      | Utilizing a blended learning approach facilitates the development of linkages between various academic areas.     | .938   | 3.89 | H     | .87    | 3.01 | M     | .935  | 2.89 | L     | 1.17           | 3.30 | M     |
| 11      | Utilizing the integrated learning method gives me feedback.   | .958   | 4.06 | H     | .82    | 3.14 | M     | .956  | 3.06 | M     | 1.18           | 2.99 | M     |
| 12      | The application of a mixed learning approach boosts students' enthusiasm for learning.                            | .950   | 3.96 | H     | .81    | 3.12 | M     | .954  | 2.96 | L     | 1.18           | 3.37 | M     |
| 13      | The application of a method of blended learning enhances students' comprehension of academic subjects.            | .950   | 4.06 | H     | .63    | 3.57 | M     | .956  | 3.06 | M     | 1.18           | 3.30 | M     |
| 14      | The application of a method of blended learning aids in the learners' development of self-learning abilities.     | .912   | 3.94 | H     | .75    | 3.10 | M     | .915  | 2.94 | L     | 1.19           | 2.76 | M     |
| 15      | The blended learning approach aids in implementing into consideration the unique characteristics of each learner. | .911   | 4.03 | H     | .85    | 2.91 | M     | .917  | 3.03 | M     | 1.18           | 2.93 | M     |
| 16      | Information retention is improved when learners employ a mixed learning approach.                                 | .973   | 3.92 | H     | .70    | 2.91 | M     | .978  | 2.92 | L     | 1.13           | 3.37 | M     |
| 17      | The amount of teacher-student interaction increases when blended learning is used.                                | .827   | 4.12 | H     | .78    | 2.91 | M     | .825  | 2.12 | L     | 1.26           | 3.35 | M     |
| 18      | A mixed learning approach gives the student access to a variety of educational resources.                         | .905   | 4.00 | H     | .91    | 3.11 | M     | .908  | 3.00 | M     | 1.04           | 2.15 | L     |



|       |   |       |      |   |     |      |   |       |      |   |      |      |   |
|-------|---|-------|------|---|-----|------|---|-------|------|---|------|------|---|
| 19    | A mixed method of learning gives the student feedback.  | .902  | 3.97 | H | .79 | 2.98 | M | .907  | 2.97 | L | 1.14 | 2.63 | L |
| 20    | The adoption of the concept of blended learning helps students accept academic courses.                                     | 1.135 | 3.69 | M | .83 | 3.16 | M | 1.139 | 2.69 | M | 1.13 | 3.12 | M |
| 21    | Time and energy can be saved by implementing a method of blended education.   | .955  | 3.88 | H | .75 | 3.17 | M | .953  | 2.88 | L | 1.35 | 3.33 | M |
| 22    | Employing a mixed method of education motivates students to engage in instructive learning activities.                      | .948  | 3.86 | H | .80 | 3.01 | M | .945  | 2.86 | L | 1.23 | 3.39 | M |
| 23    | The learner's confidence grows as a result of the concept of blended learning.  | 1.023 | 3.81 | H | .84 | 2.95 | M | 1.025 | .812 | L | 1.11 | 3.19 | M |
| 24    | The integrated learning approach facilitates a deeper comprehension of the material for students with learning impairments. | 1.220 | 3.47 | M | .68 | 3.55 | M | 1.226 | 2.47 | L | 1.29 | 3.21 | M |
| 25    | Data indicate devices are provided by the school.   | 1.169 | 3.77 | H | .70 | 3.43 | M | 1.165 | 2.77 | L | 1.05 | 1.98 | L |
| 26    | The school offers a network of accessible computers for various educational settings.                                       | 1.046 | 3.89 | H | .79 | 3.13 | M | 1.043 | 2.89 | L | 1.42 | 2.93 | M |
| 27    | The educational software at the school is ready-made.   | 1.363 | 3.91 | H | .75 | 3.13 | M | 1.366 | 2.91 | L | 1.34 | 2.85 | M |
| 28    | Smart boards are provided in the classroom by the school.   | 1.155 | 3.96 | H | .74 | 3.17 | M | 1.157 | 2.96 | L | 1.40 | 2.60 | L |
| 29    | The school uses experts in computers and the Internet to give technical help.   | 1.176 | 3.93 | H | .76 | 3.06 | M | 1.179 | 2.93 | L | 1.13 | 2.12 | L |
| 30    | The school offers instructional websites on its website.  | 1.135 | 3.99 | H | .77 | 3.06 | M | 1.133 | 2.99 | L | 0.66 | 1.34 | L |
| Total |   | .76   | 3.99 | H | .41 | 3.15 | M | .73   | 2.99 | L | 1.42 | 2.74 | L |

Abb. (H. High, M. Moderate, L. Low).



This table presents the average and standard deviation figures for the degrees of blended learning implementation in the following countries: Israel, Jordan, India, and the Czech Republic. The Czech Republic now provides the necessary technological support for teachers to use the blended learning approach in the classroom. A mixed learning strategy aligns with how classes are taught in India. In Israel, the blended learning approach favors the attainment of class objectives, whereas in Jordan, efforts are made to integrate classroom activities and methodologies. For each level of implementation, the table offers a variety of things and their respective numbers.

The mean score for all questionnaire objects was (3.12) for the Jordanian teachers, indicating an average level of utilizing blended learning perceptions, and (3.99) for the Israeli teachers, indicating a high perception. The India score (2.99) indicates the average perception. The Czech low score (2.74) indicates a low perception of using Bl, as shown in Table 3. The amount of teacher-student interactions increased when a blended learning technique was used, item (17) for Israeli teachers and, item (22) for Czech instructors, item (18) for Indian teachers. For Jordanian teachers, the mean scores on the questionnaire sections ranged from 2.91 to 3.57, for Israeli teachers from 3.11 to 4.12, for Czech teachers from 1.34 to 3.39, and for Indian teachers from 2.54 to 3.08. Item (13), "The implementation of a blended method of learning enhances the capacity of students to understand educational subjects,"—has a good rating among Jordanian instructors. Item(27) for Israelis having the biggest score degree (3.31), items (15,16 and 17) for Jordanians having the least score degree (2.91), item (30) for Czechs having the least score degree (1.34), item (18) for India having the average score degree (3.00). In contrast to other countries (Jordan, India, and the Czech Republic), Israel has a high score degree.

The data analysis indicates variations in teachers' perceptions in the four countries, including India, about the use of blended learning. Teachers in Israel have a great attitude toward blended learning, which is a sign of their expertise and understanding in the field. According to Austin, Rickard, and Reilly (2017), the study's participants thought the blended learning strategy was effective and that they received sufficient technical assistance. Blended learning, they believed, did more than increase student involvement; it also helped subject-area instructors meet course goals and encouraged teamwork. Educators in India are starting to see the value of blended learning, especially concerning the assistance they get and how well it complements their teaching approaches. This trend might lead to similar conclusions when looking at the Indian setting. Blended learning is becoming more popular among educators throughout the world, including in India and Israel (Shimony et al., 2022).

The educational system's size and regional variations influence the diversity of blended learning methodologies among instructors. They face the same problems as their Jordanian counterparts, including discrepancies in the use of mixed methodologies owing to material complexity, time restrictions, and variations in teachers' educational backgrounds. Blended learning improves pupils' grasp of academic topics, according to Indian instructors who have seen the favorable effect. Blended learning has the potential to enhance student engagement and successfully meet educational goals in India. However, it will depend on whether or not the country's educators are as prepared as those in Israel were during the COVID-19 epidemic.

The results provide insight into the differences among the four countries, including India. Since the Israeli educational system has experience implementing BL during various emergencies, we can assume that, besides investing and assigning enough budgets and resources, Israeli schools were better prepared to implement the BL strategy than Jordanian, Czech, and Indian schools

(Pavlas et al., 2021a; Šalamounová, 2022). To assist educators in advancing their careers, Zviran and Morgenstern will also offer techno-pedagogy courses in 2020. Every school also has a mentor for techno-pedagogy available to answer queries (Jumani et al, 2018; Morgenstern & Zviran, 2020). Israeli educators believe that the Bl method aids students in gaining self-confidence because their country prioritizes the growth of social abilities for the twenty-first century. In 2020, Yilmaz et al. Teachers in the Czech Republic, India, and Israel agree that addressing students' abilities, diversity, differences, inclinations, and wishes can be effectively accomplished with the use of Bl. This idea might encourage educators to use more and more technologies in the classroom (Stecua et al., 2022; Saeed, 2020; Yilmaz et al., 2020; Reimers et al., 2020; Šalamounová, 2022).

The elements that Jordanian and Indian teachers rated at a moderate level can be attributed to a variety of issues, including gaps in the application of blending education techniques by educators due to the intricacy of the subject matter. Jordanian and Indian educators' views on blended learning are ambivalent. They had trouble putting methods of blended learning into practice because of the courses' complexity, time constraints, and the teachers' disparate educational experiences. They did concede, nevertheless, that blended learning improved pupils' understanding of academic subjects.

The time factor, which establishes the duration of the class and the educational skills of the teachers, is important because it may allow a qualified educational worker to take the lead because it may improve the graduates' capacity to use the programs and technical tools, and because it is possible that these graduates will be more convinced of the viability of professional employment during that particular academic term. The outcomes align with the findings of other previous studies, such as (Sorbie, 2015; AL-Hadhoud & Al-Hattami, 2017; Martinsen, 2017; Akçayr & Akçayr, 2018; Wahyuningsih & Afandi, 2023). Czech educators expressed less support for using blended learning than educators from Israel, Jordan, and India. This could be determined by their lack of experience with learning techniques and the need for more exposure to and training in blended learning methods.

Regarding issue (24), "The methods of blended learning enabling students in difficulties with learning obtain a better comprehension of the subject matter involved in learning," which was given to four countries and obtained a moderate rating, the diversity of the students was noted. While the educators in Jordan, India, and Israel were content, they desired more. There is a positive tendency toward a decrease in student diversity because of BL. Students gain experience cooperating on projects and solving problems using shared expertise and problem-solving strategies (Listiana et al., 2019; Stecua et al., 2022; Ochildinovna, 2023). Teachers in the Czech Republic claimed that blended learning worked better for them as the special needs students' teacher worked in tandem with the assigned teaching assistant. (Havelková & Janak, 2022; Pavlas et al., 2021). We may assume that all of the teachers, including those in India, felt positively about it.

The teachers' lack of experience regarding techniques for teaching (Reimers et al., 2020; Pavlas et al., 2021) and the fact that, in contrast to earlier research (Yilmaz et al., 2020), more interaction with students makes educators feel as though their power is at risk are the two reasons for this, according to the moderately complex objects (15, 16, and 17) that were stated by Jordanian, Indian, and Czech teachers, Jordanian and Czech professors disagreed that students self-confidence should rise in a secure environment during the learning process, despite prior research demonstrating that the blended learning area empowers learners and aids in their learning. They

still think the instructor should be the only one in charge of the lesson. References: Šalamounová 2023; Ochildinovna, 2023; Havelková&Janak, 2022; Pavlas et al., 2021b; Stecua et al., 2022).

By implementing the BL method, teachers can enhance their learning style, accomplishments, inspiration, and time management skills. Instructors also underlined how BI creates opportunities for new kinds of collaboration, such as with educators in other subject areas and other schools, and by strengthening bonds with their peers. It is evident that all four countries' instructors saw favorable tendencies toward BL. Teachers claim that the BI increases the amount of interaction between teachers and learners, which helps students and teachers overcome most learning obstacles (Ndioho et al., 2021; Inan&Lowther, 2010; Kim & Kwon, 2019; Mustadi et al., 2021; Ochildinovna, 2023).

**Table 4** Two-way ANOVA analysis of the study variables

| The Resource                     | Country |      |      | Jordan |        |      | Israel |     |        | India |      |     | Czech   |      |      |     |
|----------------------------------|---------|------|------|--------|--------|------|--------|-----|--------|-------|------|-----|---------|------|------|-----|
|                                  | MS      | Sig. | F    | df     | MS     | Sig. | F      | df  | MS     | Sig.  | F    | df  | MS      | Sig. | F    | df  |
| Gender                           | .125    | .606 | .48  | 1      | .134   | .661 | .33    | 1   | .127   | .609  | .45  | 1   | .008    | .913 | .012 | 1   |
| Supervising Authority            | .159    | .299 | .838 | 1      | .169   | .050 | .678   | 1   | .153   | .289  | .938 | 1   | .054    | .772 | .084 | 1   |
| Gender*<br>Supervising Authority | .178    | .211 | 1.26 | 1      | .188   | .050 | 1.34   | 1   | .175   | .221  | 2.26 | 1   | .045    | .791 | .070 | 1   |
| Error                            |         |      |      | 157    |        |      |        | 153 |        |       |      | 154 |         |      |      | 176 |
| Total                            | 673.43  |      |      | 160    | 467.78 |      |        | 158 | 683.45 |       |      | 168 | 1604.56 |      |      | 180 |

Statistics from a number of nations, such as the Czech Republic, India, Israel, and Jordan, are included in the table. Degrees of freedom (df), F-statistic (F), significance level (Sig.), and mean square (MS) are the columns that compile the data. Considerations such as gender, supervisory power, and their interplay are all part of the investigation. Finding the values categorized by nation and further details about the total numbers and overall inaccuracy. Teachers in Israel, Jordan, India, and the Czech Republic declare that there have been no appreciable shifts in the usage of blended learning based on gender. Teachers' comprehension of the need to modify their teaching practices due to the epidemic, their belief in the practicality of these contemporary approaches, and their pursuit of personal growth and rejuvenation could be the reasons for this. The data analysis reveals that gender does not impact teachers' opinions toward blended learning. Teachers in all four countries had similar perspectives on blended learning, regardless of gender.

However, education type affected certain perceptions. Israeli educators, especially private school teachers, supported blended learning more than public school teachers. Private schools in Israel may provide more blended learning training and professional development due to their stronger resources, facilities, and funding. In India, private school teachers can be more enthusiastic about blended learning owing to superior training and resources than public school teachers.

Table 4 depicts the two-way analysis that was carried out for Israel, Jordan, India, and the Czech Republic using the ANOVA tool on the variables of nation resources, gender, supervisory authority, error, and total value. When compared to other nations, the Czech Republic has a high mean square value (1604.56), India and Jordan have an average MS value (683.45 and 673.43), and Israel has a lowest MS value 467.78

On the other hand, teachers from the Czech Republic and Jordan were unaffected by the type of school. Teachers in these countries, from both public and private schools, showed similar perspectives on integrated learning. In summary, instructors in the Czech Republic and Jordan demonstrated moderate to negative attitudes towards blended learning, while teachers in Israel and India demonstrated a more positive opinion. The differences in viewpoints can be explained by factors such as chances for professional development, resources available, and previous involvement with blended learning. Moreover, in all four countries, instructors' opinions of blended education were not impacted by their gender

Male and female alike now understand that they will be left out if they are not present. The results of Saboowala and Manghirmalani-Mishra (2020) are in conflict with this finding. The findings also demonstrated that, regarding the type of school they teach at, blended learning levels are not very different in usage between Czech, Jordanian, and Indian educators. Instead, these differences are attributed to the same funding and support sources, like internet infrastructure and professional development. In all four countries, gender substantially impacted teachers' attitudes toward blended learning. An awareness of integrated education among teachers of both genders was similar.

Similar to the situation in Israel, there are noticeable differences in how teachers in public and private schools see blended learning in India. Teachers at private schools are more likely to have a positive attitude towards the concept. Private schools in Israel and India will most likely have greater funding and access to blended learning and professional development resources. However, the kind of school had little effect on the Czech or the Jordan Republic opinions. Educators in these countries' governments and private institutions demonstrated similar levels of understanding of integrated learning. According to the Israeli findings, there are statistically

significant correlations between school type and student achievement, especially in India's private schools, which tend to have more resources, administrative oversight, and competent and technologically advanced teaching staff (Zviran & Morgenstern, 2020; Holden & Westfall, 2006; Hofmann, 2011). The results of using Bl indicate that, compared to the Israeli situation, there is no communication between teachers in Jordan and the Czech Republic. However, there is communication between teachers in Israel and India. This interaction can be explained by the kind of school and the gender interaction. We can infer that there are different levels of dependence between the two factors (school type and gender). (Shamma, Strongoli, 2023).

Blended learning blends traditional in-person education with virtual components; it is vital to remember that instructors' opinions on the matter may differ depending on their personal experiences and inclinations (Peters et al., 2022). Teaching professionals in Israel, Jordan, India, and the Czech Republic, as well as educators worldwide, can notice the following drawbacks when it comes to integrating blended learning: the appropriate deployment of online components may be hampered in some places or schools by teachers' limited availability of technology and the internet, Teachers assurance and the standard of blended learning can be impacted if they believe they are not proficient or equipped to incorporate technology into the curriculum, Some educators may feel that the online component lessens the richness of these connections since they prefer the one-on-one conversation and prompt feedback that traditional classes provide (Kundu et al, 2021).

Teachers in India, involving those throughout the world, could consider blended learning favorably since it can alleviate resource limitations, which is different from the difficulties that teachers in Israel, Jordan, and the Czech Republic could face. Using the ANOVA tool, a two-way analysis was performed on the variables of national resources, gender, supervisory authority, error, and total value for Israel, Jordan, India, and the Czech Republic. The mean square value of the Czech is high (1604.56) in contrast to other countries. Teachers in the Indian Republic could consider blended learning favorably since it can alleviate resource limitations, which is different from the difficulties that teachers in Israel, Jordan, India, and the Czech Republic could face. Teachers in India, involving those throughout the world, can expect a number of benefits from blended education, which blends traditional training in person with virtual components, including enabling students to access materials both within and outside of the classroom; blended learning can assist in addressing problems associated with limited access to technology, prospects for continued professional development are offered by blended learning. Educators can participate in webinars, online courses, and collaborative platforms to advance their digital literacy and stay current with innovative teaching methods. Implementing blended learning enables a customized educational approach. By using online platforms to provide personalized education, teachers in India can meet the diverse learning requirements of their students. Blended learning is seen differently by teachers in the Czech Republic, Israel, Jordan, and India, reflecting the unique educational landscapes of these countries. Educators in Israel, often pioneers in technological innovation, believe blended learning may increase student interest and foster analytical thinking. Jordanian educators are optimistic about its ability to help overcome funding constraints and expand access to quality education. Given the diversity of pedagogical practices, many educators regard blended learning as bridging achievement disparities and accommodating students with different learning styles. The Czech Republic is well-known for its unbiased educators, and they highly praise blended learning for its flexibility and ability to cater to each student's unique needs. Educators like them aim to bridge cultural gaps by strategically using technology in the classroom.



## 4 Conclusion

An innovative approach to education, blended learning has gained popularity, especially in considering the COVID-19 pandemic's issues. Blended education has been effectively implemented in Israel, Jordan, India, and the Czech Republic, improving the educational experience for both teachers and students. Although the approach has many benefits, several issues must be resolved to ensure that it is used effectively. The evaluation of educators' views on blended learning during the COVID-19 epidemic in Israel, Jordan, India, and the Czech Republic is done using 30 items that are distinctive to each nation. The results show that Israel scored quite higher than other nations, with a score of 3.99. With a score of 3.12, blended learning applied by instructors in Jordan, India, and the Czech Republic scored 2.99 and 2.74, respectively, for their use of blended learning. These findings imply that a greater degree of blended learning was used by Israeli instructors. Israeli teachers used blended education techniques at a higher rate than Jordanian teachers; blended learning is employed by instructors in India at a rate that is much lower than in Jordanian, whereas Czech teachers used them at a lower rate. This could result from the lockdown implemented as a quick fix for the COVID-19 pandemic. Blended learning, which combines online and conventional methods, was adopted by educators in Israel, Jordan, India, and the Czech Republic during the COVID-19 epidemic. Due to complex educational contexts, blended learning views differ in Israel, Jordan, India, and the Czech Republic. Blended learning's flexibility helped some schools overcome pandemic challenges. Despite its drawbacks, blended learning was considered as a flexible way to overcome educational hurdles in many cultures and locations. These instructors see blended learning differently depending on their expertise and local educational settings. Some teachers think blended learning's flexibility and technology can enhance instruction. Others have trouble with student engagement, digital access, and blended learning. Future educational strategies should be tailored to each region's requirements. Blended learning must be tailored to Israeli, Jordanian, Indian, and Czech teachers and students. Responsibility helps schools overcome post-pandemic difficulties and improve learning equitability.

### 4.1 Limitations and Future Directions

In line with the results obtained from this research, the following suggestions can be made: 1. To expand the research for other countries from different cultures and more types of schools. 2. New research can be carried out to determine the effect of blended learning on principals and parents.

## 5 Statement of Researchers

In this section, you are expected to declare the information regarding the titles given below.

### 5.1 Researchers contribution rate statement

Both authors have the same contribution.

### 5.2 Conflict statement

The authors declare no potential conflicts of interest.

### 5.3 Support and thanks

No support

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