

## Organisation of volunteer activities of students in the framework of inclusive education through innovative technologies

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### Abstract

The goal of the research was to examine how student volunteerism might be organised using cutting-edge technology within the context of inclusive education, and this aspect was covered. The study employed quantitative research methodologies in its numerous aspects, and 264 volunteer students who are enrolled in different schools throughout Kazakhstan participated in the participant group. In the fall of 2021–2022. The participant groups in the study received 4-weeks of online training. The study made use of the 'Inclusive Education and Technology' data gathering tool, which was created by the researchers and put together by subject-matter specialists. The individuals that made up the participant groups were given the measuring tool, and it was supplied and collected online. Frequency analysis, *t*-test, the Kruskal-Wallis test, and the Statistical Package for the Social Sciences programme were used to analyse the data, and the results were added to the study along with the tables. Based on the research's findings, the participant groups have high use cases for inclusive education, and it has been indicated that new technology training areas will help them.

Keywords: Inclusive education, innovative technology, organisation, online education;

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## 1. Introduction

It is well known that one of the issues associated with inclusive education is one that has recently come up regularly in discussions among society, students and educational theories. It is well known that this idea is taken into account, particularly at the most extreme points, when defining the process of including students and educators in society (Ciburienne et al., 2019). It is evident that the debate over the impact of inclusive education on the definition of education has grown in recent years (Stambekovaa et al., 2022). In order to improve student and youth education, the inclusion approach to education places a strong emphasis on giving everyone access to equitable educational opportunities. Social cohesion is promoted by inclusive education. Enhancing pupils' academic achievement is a significant advantage of inclusive education (Higuera-Rodriguez & Medina-Garcia, 2020). Positive progress is anticipated in the education of all students as educational institutions collaborate to provide high-quality instruction for students from diverse cultural backgrounds. To represent students' needs, these institutions will need to develop unique educational and training programmes (Grishaeva et al., 2019). The majority of the course contents are considered the surface-level reason for fully inclusive education, and students are also given the chance to profit from a more effective learning environment (Parthasarathy et al., 2021).

In addition to these functions, inclusive education serves the culture of cohesion and coexistence in society by revealing feelings of accepting differences as wealth. It is stated that schools with an inclusive education orientation are the most effective tools in combating discrimination, creating a society that welcomes and accepts everyone, enabling everyone to access the right to education (Nasri et al., 2021). They explain it as the social justification for inclusive education. Inclusive schools, where everyone is educated in the same environment and condition, help to develop positive attitudes towards the differences among students. Inclusive education, which contributes to the formation of a more just and inclusive society, has an important function that prevents social divisions and contributes to social integration (Narkabilova, 2021). Inclusiveness is, in a way, the act of understanding and recognising the other. All individuals who are described as other and have a disadvantaged position are the target group of inclusive education. Multiculturalism represents an important sub-dimension of inclusive education. It refers to the influence of other cultures among students. Knowing and understanding different cultures can only be achieved through multicultural education (Shorey et al., 2021).

Considering the fact that inclusive education and innovative technology methods offer more efficient education opportunities to students by targeting the development and education level of all students, it is seen that in this study, education programmes are designed with the help of technology, which can be an inclusive education model (Papadakis, 2021). The programme prepared in this study aims to increase students' interest in English lessons by doing, living and gaining experience, responding to their needs and giving them communication skills. For this purpose, it aims to meet the educational rationale of inclusive education based on the adaptation of schools to the individual, not the individual to the school (Costa et al., 2021). While doing this, another goal is to keep the students in touch with technology and increase their ability to use technology. This technological requirement may be different for each individual. These requirements must be met not only in the educational setting, but also in their homes. It is also aimed at identifying and supplying this technology specifically to meet the needs of individuals. Therefore, this programme is based on meeting the clause that inclusive education should prepare students for pleasure by responding to students' needs and wants (Ramaswamy et al., 2021).

### 1.1. Related studies

In his research, Kvasyuk (2020) aimed to reveal the importance of university students studying in the department of foreign languages to gain inclusive professional competence in teaching children with special education needs through profession-based volunteering, and as a result, he reached the conclusion that the necessary competence needs to be developed in the education process for universities. In addition, they stated that the inclusive competence development process of foreign language students through vocational volunteering was positive.

In the study of Mikhailenko et al. (2021), they aimed to address the use of information technologies in the implementation of inclusive education, and as a result, during the analysis of the reality of the implementation of inclusive education, they reached the values that show that the leading aspects are important and that it is necessary to prepare society and the educational environment for improving the quality of life.

Moghadas et al. (2022) after any disruptions in the work they have done and to move towards a sustainable future, the need to leap forward, the durability of recent urban initiatives and traditional top-down initiatives, the durability of effective strategies, plans and applicability in a time and place that is less likely to lead to the concept of the durability of the converter is intended to open the way to deal with. As a result of technology and a review of the literature on the durability of the converter, they found that a comprehensive understanding of the complexities and capabilities of using technology for transformative endurance was lacking, and they came to the conclusion that this field would be useful.

It is seen that the studies in the relevant research section are useful for the universalisation of inclusive education, and it is among the expectations that this research will benefit both the mass group and the field.

### *1.2. The purpose of the study*

The primary goal of the research was to examine how novel technologies could be used to organise student volunteer activities within the context of inclusive education. The following questions were then asked in order to find the answers for the determined general purpose:

1. What is the daily use of innovative technology devices by the participant groups participating in the research?
2. What are the daily online activity usage times of the participant groups participating in the research?
3. What are the views of the participant groups participating in the research on inclusive education?
4. What are the opinions of the participant groups participating in the research on innovative technology?
5. Is there a difference between the inclusive education statuses of the participant groups participating in the research according to gender criteria?
6. What is the innovative technology status according to the departments of the participant groups participating in the research?

## **2. Method**

In this section, the method was used in the study, the participant groups participating in the research, the type and source of the data in the research, the data collection tools and the numerical values used in the research are included and arranged.

## 2.1. Research model

When the model part is investigated primarily, it is seen that there are too many research models. In this context, it is seen that the quantitative research model is included and benefited from in this research. The quantitative research method, on the other hand, is a research method that aims to describe a situation that has been traced until today, as it is (Uzunboylu et al., 2022). In this study, the variables of gender, departments and education duration were used to describe the organisation of student volunteer activities using innovative technologies within the framework of inclusive education.

## 2.2. Working group/participants

Participation groups included in the research consist of 264 volunteer participants who continue their education at universities around Kazakhstan. The data collection tool used in the research was applied to the participant groups with the help of an online questionnaire and was accepted.

### 2.2.1. Gender

In this section, the gender categories of the research participant groups are divided, and Table 1 can be observed to contain thorough information.

Table 1

Distribution of the participant groups participating in the research by gender variable

Gender	Male		Female	
	F	%	F	%
Variable	136	51.52	128	48.48

When Table 1 is examined, distinctions are determined according to the gender variable of the participant groups participating in the research, and the information is examined and added. In this context, 51.52% (136 people) were male, while 48.48% (128 people) were female. In the gender section, the findings reflect the actual gender distribution.

### 2.2.2. Daily innovative technology devices usage times of the participant groups participating in the research

In this section, situations according to the daily use of innovative technology devices and periods of the participant groups participating in the research were investigated and examined. Detailed information is given in Table 2.

Table 2

Daily innovative technology devices usage times of the participant groups participating in the research

Innovative technology devices	1–3 hours		4–7 hours		8 or more hours	
	F	%	F	%	F	%
Variable	18	6.82	97	36.74	149	56.44

When Table 2 is examined, the surveyed groups of participants' data and detailed information on the usage of innovative technology in the days are added. It is observed that 9.03% (18 people) expressed devoting 1–3 hours, 36.74% (97 people) expressed devoting 4–7 hours and 56.44% (149 people) expressed devoting over 8 hours to innovative technology. In this context, it is observed that the groups of participants in the research prefer to spend 8 hours or more on innovative technology devices.

### 2.2.3. The daily online activity usage process times of the participant groups participating in the study

In this section, the situations were investigated and examined according to the daily online activity usage time periods of the participant groups participating in the research. Detailed information is given in Table 3.

Table 3

The daily online activity usage process times of the participant groups participating in the study

Online event	1–3 hours		4–7 hours		8 or more hours	
	F	%	F	%	F	%
Variable	21	7.95	78	29.55	165	62.50

When Table 3 is examined, the surveyed groups of participants were examined and detailed information on time use the online activity data are given. In this context, 7.95% (21 people) expressed spending 1–3 hours on online activity, 29.55% (78 people) expressed spending 4–7 hours and 62.50% (165 people) expressed spending over 8 hours on online activity. In this context, it is observed that the online activity usage rate mostly preferred by the participant groups is 8 hours and above.

### 2.2.4. Departmental status

In this section, the department information of the university students of the study group is examined and detailed information is given in Table 4.

Table 4. Distribution of the groups of participants participating in the research according to their departmental status

Department	Computer teacher		English teacher		Mathematics teacher	
	F	%	F	%	F	%
Variable	82	31.06	88	33.33	94	35.61

When Table 4 is examined, it is seen that the distribution of the study group participant groups according to their departments is included. In this context, it is seen that 31.06% (82 people) are computer teachers, 33.33% (88 people) are English teachers and 35.61% (94 people) are mathematics teachers.

### 2.3. Data collection tools

When the data collection tool section is considered, it is seen that a data collection tool is developed by the people who create the research problem situation and can appeal to the research participant groups. The data collection tool, on the other hand, was examined by experts on inclusive education and innovative technology, and the unsuitable items were removed from the study and corrected. A

personal information form called 'Inclusive Education and Technology' data collection tool developed by the researchers was used for the participant groups. The content validity of the developed measurement tool was examined by experts with four professor titles working on inclusive education platforms and online activity, and unnecessary items were removed from the measurement tool and rearranged.

1. Personal Information Form (Demographic Data): In the personal information form, information such as gender, innovative educational device usage and online activity usage environments are included.

2. Inclusive Education and Technology Data Collection Tool: A 5-point Likert-type questionnaire was prepared to obtain information about inclusive education and innovative technologies organisation views. 22 items of the measurement tool consisting of a total of 26 items were used and 4 items were removed from the measurement tool, thanks to experts' opinion. The opinions of participant groups were from two factorial dimensions: 'Inclusive Education' and 'Innovative Technology'. The Cronbach alpha reliability coefficient of the measurement tool as a whole was calculated as 0.81. The measuring tool was in the range of 'strongly disagree' (1), 'disagree' (2), 'undecided' (3), 'agree' (4) and 'strongly agree' (5). The data collection tool was delivered to the participant groups with the help of an online questionnaire and collected.

#### 2.4. Application

It is known as the area where some data make sense and the participant groups encounter the problem situation in the application dimension, and in the application part, it is seen that the researchers consist of 264 volunteers from various universities in the Kazakhstan region. It aimed to provide inclusive education and innovative technology training in the form of a 4-week online course to the participant groups. The time and use cases for inclusive education on the online event were prepared with the MS Teams videoconferencing application programme and shown to experts in the field of this event's training environment content. During the 4-week training, inclusive training and information were given to the participant groups in the form of an online activity, and the participant groups were expected to follow-up on this subject every week. After the 4-week training, the data collection tool and information form were applied to the participant groups, and the data are given in tables in the Findings section. The training was distributed in two sections over the MS Teams videoconferencing application programme used by most universities, and each section was determined to be limited to a maximum of 140 participants. Each training programme was processed in a total of 60 minutes, with 45 minutes of training and 15 minutes of questions and answers. Participants were expected to participate in online training with innovative technological devices. The measurement tool applied to the participant groups was collected by means of an online questionnaire and transferred to the Statistical Package for the Social Sciences programme by coding in the computing software environment.

#### 2.5. Analysis of the data

In the analysis part of the data, the statistical data obtained from the participant groups were analysed in the Statistics programme using frequency ( $f$ ), percentage (%), mean ( $M$ ), standard deviation (SD),  $t$ -test and one-way analysis of variance. The numerical values of the data obtained from the programme are given in tables, accompanied by comments in the Findings section.

### 3. Findings

In this section, the numerical findings obtained as a result of the analysis of the statistical data obtained from the participant groups are added to this section in tables and various interpretations are included in the direction of these findings.

#### 3.1. Inclusive education views of the participant groups participating in the research

The data regarding the inclusive education views of the participant groups included in the research are given in Table 5.

Table 5. Inclusive education views of the participant groups participating in the research

No	Inclusive education insights	M	SD
1	I was able to easily adapt to inclusive education	4.38	0.48
2	I have seen that I can easily use inclusive education in my classes.	4.42	0.42
3	I found the materials of inclusive education helpful and educational	4.57	0.47
4	I could easily connect to the inclusive education system	4.45	0.43
5	I was able to access inclusive education from any smart device	4.52	0.48
6	Thanks to the inclusive education, I had no difficulty in repeating the subject.	4.43	0.41
7	I was able to use inclusive education in preparation for exams during the day	4.47	0.43
8	I was able to learn inclusive education in the openness dimension of the subjects I learned	4.42	0.45
9	I was able to communicate with the instructor who explained and participated in inclusive education	4.63	0.48
10	I can say that I find inclusive education fluent and sustainable.	4.46	0.46
11	I would like to see inclusive education again and in my other courses.	4.49	0.42
Overall average		4.48	0.45

When Table 5 is examined, it is seen that the groups of participants participating in the study have inclusive education views after the training. In this context, it is seen that the points of the participants participating in the research are high, and the most obvious statement of the research was found to be 'I found the materials of inclusive education useful and educational' ( $M = 4.57$ ). In addition, it was found that 'I was able to access inclusive education from the smart device I wanted' ( $M = 4.52$ ) was one of the most prominent statements of the research. While it is seen that the opinions of the participants participating in the study about inclusive education are quite high, another prominent statement was 'I saw that I could easily use inclusive education in my lessons' ( $M = 4.42$ ). Other prominent statements were 'I had no difficulty repeating the subject thanks to inclusive education' ( $M = 4.43$ ) and 'I was able to communicate with the instructor who explained and participated in inclusive education' ( $M = 4.63$ ). In addition, another value of the research is 'I would like to see inclusive education again and in my other courses' ( $M = 4.49$ ). Finally, it is seen that the overall average was found to be  $M = 4.48$ .

When Table 5 is examined, the surveyed groups of participants views on inclusive education within the framework of the organisational scheme was developed and the materials in this environment and

also provide support for the training of the research participants that they can use while preparing for exams it is observed that this application is reached at the information that is useful. In this context, since all the values in Table 5 have a positive meaning, it can be said, based on the findings, that the inclusive education of the participants participating in the study is positive.

### 3.2. Opinions of the groups of participants participating in the research on innovative technology

The opinions and findings of the groups of participants who participated in the research on innovative technology are given in Table 6.

Table 6. Opinions of the groups of participants participating in the research on innovative technology

No	Insights on innovative technology	M	SD
1	Online lessons conducted with innovative technology become more effective	4.42	0.42
2	Taking lessons with innovative technology allowed me to devote more time to myself in my daily life.	4.44	0.39
3	Instant correspondence and asking questions with the teacher who teaches the lesson with innovative technology is a very effective method.	4.48	0.41
4	Accessing the recording of the lesson taught with innovative technology is more effective in reinforcing the lesson.	4.41	0.43
5	It is an advantage for me to be able to learn the information in my field courses whenever and wherever I want with innovative technology.	4.46	0.39
6	In the innovative technology course environment, I do not experience any disconnection during the course.	4.38	0.41
7	I have the opportunity to take lessons with innovative technology and learn how to use smart devices.	4.47	0.42
8	I can use my chat feature while taking lessons with innovative technology.	4.44	0.41
9	I can join the groups created in the innovative technology environment whenever I want.	4.49	0.38
10	I can access the live lecture recordings of the lectures made with innovative technology whenever I want.	4.41	0.37
11	I would be happy to see the innovative technology system in my other events and lessons.	4.43	0.42
	Overall average	4.44	0.40

When Table 6 is examined, it is seen that there are statistical findings regarding the innovative technology views of the participants participating in the research. Although it is seen that each answer has a different meaning, from the statements of the participant groups participating in the research, 'It is an advantage for me to be able to learn the information in my field courses with innovative technology whenever and wherever I want' had a score of  $M = 4.46$ . In addition, it was found that 'I have the opportunity to take lessons with innovative technology and learn how to use smart devices' had a score of  $M = 4.47$ . While it is seen that the participant groups participating in the research have a very high opinion of their innovative technologies, other findings were 'Instant correspondence and asking questions with the teacher who teaches the lesson with innovative technology is a very effective

method' and 'I can join groups created in an innovative technology environment whenever I want', with scores of  $M = 4.48$  and  $M = 4.49$ , respectively. 'I can access the live lecture recordings of the lessons made with innovative technology whenever I want' had a score of  $M = 4.41$ . In addition, another value of the research is 'Online courses conducted with innovative technology are more effective', with a score of  $M = 4.42$ . Finally, it is seen that the general average is  $M = 4.44$ .

When Table 6 is examined, it is seen that the participant groups participating in the research have high innovative technology views; they also feel happy and successful, thanks to this technology; they can use technology wherever they want; they are satisfied with spending time with smart devices and many other positive values are reached. Based on the findings, it can be said that the participant groups participating in the research have positive views on innovative technology because the values have a positive meaning.

### 3.3. Inclusive education status of the participant groups participating in the research according to gender criteria

In this section, the inclusive education statuses of the participant groups included in the study are examined according to the gender criteria and the information whether there is a significant difference is given in Table 7.

Table 7. Inclusive education statuses of the participant groups participating in the research by gender criteria

	Gender	N	M	SD	Df	t	p
Inclusive education cases	Male	136	4.46	0.42	264	-247	0.132
	Female	128	4.42	0.49			

When Table 7 is examined, the inclusive education levels of the participant groups participating in the research were examined according to the gender variable. It is seen that there are no significant differences according to the gender criterion ( $t(264) = -247, p < 0.05$ ). When the inclusive education status of the participant groups participating in the research is examined, it is seen that the mean score of the male participants in this area is  $M = 4.46$ , while the average score of the female participants regarding the inclusive education is  $M = 4.42$ . In this context, it can be said in the findings part of the research that there is no differences between the scores of male participants in inclusive education compared to female students.

### 3.4. Innovative technology statuses according to the segments of the participant groups participating in the research

In this section, innovative technology situations are examined according to the sections of the participant groups included and participating in the study, and detailed findings are given in Table 8.

Table 8. Innovative technology statuses according to the departments of the participant groups participating in the research

Section	N	Rank average	SD	$\chi^2$	p
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Computer education	82	31.06	3	1.428	0.144
English education	88	33.33			
Mathematics education	94	35.61			

When Table 8 is examined, it can be seen that there are no significant differences between the results of comparing the innovative technology statuses of the participants according to the department criteria ( $\chi^2(3) = 1.428$ ;  $p = 0.144$ ;  $p > 0.05$ ). Considering the innovative technology findings according to the department criteria of the participants participating in the research, it is seen that the highest is in mathematics teaching; the second highest value is seen to be in the range of English teaching; and last is the computer teaching range. It can be said that the participants participating in the research did not show a significant difference between the innovative technology situations for the department criterion.

#### 4. Discussion

Kolosova et al. (2022) in the year the work they have done to help the competence of inclusive education in the professions, but also built in accordance with the values of the modern world they are aimed at investigating the development of personal attitudes and values in research and as a result the attitude of inclusive education and inclusive basic training for professional qualifications on the basis of the formation of these issues and the component for the promotion of values that become the need of technology that have reached. In this context, when this value is combined with the results of the research, it is seen that inclusive education views have improved considerably and that beneficial results have been reached within the research. In this context, it can be said in the discussion section that this educational model benefits everyone.

Gulnora (2022) stated that the development of inclusive education system aims to create objectives and principles and intended to explain the strategic aspects. As a result, the training of the high sociocultural significance of modern requirements, problems in the education system and educational institutions are effective reached a conclusion that this value is effective when combined with the results of the research within the organisation of inclusive education. It is seen that the results of the participants who participated in the research have benefited the fields of inclusive education as well as their own fields. In this context, it can be said that this method benefits both students and the field in general.

Klimentyeva et al. (2021) have done research and education in theoretical analysis and practical experience in the implementation of projects based on the hypothesis article, the use of an adapted curriculum, didactic materials specially developed according to the applicants, individual training and contributed to the research and effective professional education as a result of adaptive self-confidence. They reached the results that all participants in the educational process contribute to their professional and personal development in order to adapt better to life and, in this context, it is seen that when this value is combined with the values in research. The results state that the participant group learns inclusive education in harmony with innovative technology.

In this context, if all these educational values are to be considered as a whole universe, it can be said that inclusive education provides benefits, meaning and success to the field and its participant groups.

## 5. Conclusion

When the results part of the research is considered, it is seen that the number of participant groups included in the research is primarily the number. In this context, it is seen that the results of this research reached that 264 volunteer participants participated in the study. When another value of the research is considered, the data on the usage times of innovative technology groups participating in the research are investigated, and as a result, it is seen that the results have been reached that they spend 8 hours or more on innovative technology devices. Another value of research of the activity of the participating groups participating in the survey on time use data was examined and detailed information online in the light of online activity of up to 8 hours of usage rates and over as the preferred groups of participants; it is seen that results have been achieved and it can be said that the previous value is directly proportional to this value.

Another value of the research discussed when groups of study participants after training after researched and surveyed the opinions of inclusive education, research participants reached the conclusion that it is seen that the highest points of the values of the study of views on the organisational scheme of the participating groups developed within the framework of inclusive education and the training of the research participants in this environment, the materials that they can use while preparing for exams and also provide support for the conclusion that they have reached this application is useful and makes sense of all the values of inclusive education positive results have been achieved. It is seen that, among the participants surveyed, another research study participants regarding their opinions of the value of innovative technology researched and statistically study after study of the group of participants when the values are high, it is seen that the results have been achieved, thanks to innovative technology, feeling happy and successful themselves, they can use the technology to spend time with smart devices from anywhere that has yielded positive results and they are happy and a lot more. In this context, since innovative technology values have a positive meaning, it can be said based on the results that the opinions of the groups of participants participating in the research on innovative technology are positive.

Another value of the study is that the inclusive education status of the participant groups participating in the study was examined according to the gender variable and it was concluded that there were no significant differences according to the gender criterion. When the final value of the research is considered, it is seen that there are no significant differences between the results of the comparison of innovative technology situations of the participants participating in the research according to the decisional criteria.

According to the results obtained from the research, it has been suggested that the use cases of the participant groups for inclusive education are high and the innovative technologies will benefit them in the field of education.

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