

Original Article

Proposal for the Implementation of the Discord Platform in the Educational Sector for University Students between 20 and 39 Years of Age in the Northern Cone of Lima, Peru

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Received: 17 February 2025

Revised: 19 March 2025

Accepted: 19 April 2025

Published: 29 April 2025

Abstract - We are currently overcoming the global pandemic of COVID-19, but going through this experience has changed the way we live and carry out our daily tasks such as working or studying. It is precisely in the study where the field has been opened to virtuality that both schools and universities have had to adapt to video conferencing platforms and virtual classrooms to develop classes for students continuously. Although there has already been a return to face-to-face classes, certain virtual courses are still maintained, and the virtual option has the approval of people who study and work because it allows them to perform both tasks. Therefore, it is necessary to analyze which video platform can offer them the best experience.

Keywords - Virtual education, Video conferencing platforms, Internet, TICs, Peruvian university students.

1. Introduction

Currently, we live in a society in which technologies are advancing rapidly. This development has allowed the implementation of technologies in various areas. One of them is education, as new applications for education within this context appear. Discord is a social network that is apparently only used in streaming and video games. However, it has the potential to serve educational dissemination through its various tools, and that is very applicable to the Peruvian reality, as it is an application that can be used from a cell phone and computer. From January to March 2021, of the total population using the Internet, 88.5%, which is the majority, do so from their cell phone, 16.7% use a laptop, 14.0% access from a computer, 7.9% use a different device such as a Smart TV and a lower percentage of 2.0% use a tablet [1].

In the present research work, we focus on an analysis of the Peruvian university population, the age range of the population under study being from 20 to 39 years old. In this age range, the population that has reached or is currently in its higher education stage is about 4,073,459 Peruvians, of which 57% (2,321,875 people) are between 20 and 39 years old, and 43% (1,751,584 people) are between 30 and 39 years old. Of the total number of Peruvians mentioned above, 2,392,925

people had completed their higher education by 2017, the year in which the census was conducted, and only 1,680,534 people were still studying [2]. With this in mind, we were able to analyze a large number of people who have made use of technological tools to communicate in this virtuality that had a large increase due to the COVID-19 pandemic that forced all sectors and, to a large extent, the student sector to switch to education. Likewise, to implement virtuality, it is necessary to have a computer, laptop or tablet from which you can access and perform all the functions that digital platforms make available to us. A total of 8,252,284 households have one of the previously mentioned equipment, and only 2,784,399 Peruvian households have one of the previously mentioned equipment. This is a real problem since this figure represents only 33.74%, something really worrying in the digital era [3].

With the arrival of the pandemic, the computer market, in general, had an overwhelming increase due to the great demand that originated, despite the serious situation that was experienced and especially with the high cost at that time. Thus, in 2020, importing companies acquired close to 2.5 million computers, significantly improving the data previously shown [4].



With these data, we can affirm that the current market for computers and laptops has increased in an accelerated way due to the pandemic and the arrival of virtuality.

Our objective is to analyze the university knowledge about discord among people from 20 to 39 years old and, from the results, to make known and implement discord as a tool in education, using all the functions that the platform offers, because there is a lack of knowledge about the use of discord as an educational tool, so we propose the realization of a server with audio and video channels, role management and a video tutorial that shows its application in education. This server and tutorial will serve as a model for future implementations of discord in education.

2. Literature Review

Given the need for a tool to conduct virtual classes, there are a large number of platforms for this purpose; which would be the most appropriate? The objective was to find out which videoconferencing platforms had the best characteristics and integration with students and teachers during the COVID-19 confinement period. The result was that among all the options available for videoconferencing, the most outstanding are Google Meet and Discord, the latter being the one that stands out for its large number of tools that improve the final experience of the student.

In 2020, in the context of the global COVID-19 pandemic, the Spanish government ordered the cessation of all face-to-face educational activities. As a result, educational centers at all levels had to look for other means to continue with the normal development of classes. We sought to demonstrate that virtual classes using real-time video platforms such as Discord can be useful through the experiences of various teachers at the University of Barcelona.

It became evident that Discord is an optimal tool for developing virtual classes, and teachers had no complications adapting to the use of voice and video channels and the different rooms the server allowed to create [5]. For the students, it was a more friendly transition, especially for those who already had experience in video games.

Discord was also implemented in the subject of Didactics of Reading and Writing of the Degree in Teacher in Primary Education during the course 2020-202 at the University of Alicante. This use of discord as a communication tool in the educational context was beneficial since it promoted the active participation of students, facilitated communication and exchange of materials, and allowed to solve doubts cooperatively [6]. That is, since discord allows both synchronous and asynchronous communication. It works through creating servers (it can be our subject group) and, from there, creating channels that can be used to divide the different subgroups of students, interests, activities, etc.

Discord is a very useful tool, as it is a social network that streamlines interaction between people and helps a lot in education because of the ease of communication and organization that [7]. The implementation of the learning environment through the use of the Discord platform was very positive, as it encouraged student participation in the projects that were carried out.

Due to the emergence of the pandemic, educational centers had to adapt and propose a new teaching modality, develop a new learning and training plan for teachers, and ensure that their students could continue to participate despite the current situation. The aim was to determine what students and teachers think about using technological tools to continue developing their classes virtually, what weaknesses and strengths can be found in this new learning space, as well as which videoconferencing tool is the most attractive to users.

For the researchers, the role of the teacher in virtuality is not only that of an exhibitor but also that of a guide, someone who manages to generate interest in the students through virtual classes [8]. Finally, for data collection, the survey method was applied, and it was obtained that, among the videoconferencing platforms in the questions related to the greatest amount of acceptance, the Zoom tool led the approval rates. Other important indicators are that, in many cases, the use of presentations (pps created by the students) encouraged them to make good presentations; also, the use of other platforms of questionnaires by points gave more impetus to learning. One thing that stands out is the constant need for students to keep their cameras turned off.

Given the constant traditional teaching (teachers and students in the same classroom), the collaborative performance of students is very low, and so is the development of their social relationships and personal development in the classroom. We wanted to analyze the results of providing virtual classes through the use of videoconferencing platforms and the performance and challenges those teachers and students would have. The researcher considers that in order to obtain the best results from videoconferences, it is necessary to use other technological tools such as surveys, forums, sessions and other tools that encourage collaborative learning. Likewise, psychosocial relationships were enhanced by the greater interaction that students could develop through virtuality [9].

3. Tools Used

Several office tools and programs were used for the development of this work. All this helped in the realization of the survey, the development of the work plan and the processing of the data obtained. In this project, we decided to use Google Forms for the surveys since it is the most used and people are more accustomed to answering surveys; also, our writing was done in MS Word and for the results of the surveys, the statistical data were done in MS Excel.

3.1. Discord

Discord is being used as a tool for communication and collaboration between students and teachers. Users can create voice, audio, and video channels, as well as rooms with different rules, and create roles and ranks for users. Discord can be a useful platform for online teaching, especially for subjects that require collaboration and interaction among students. However, it is important to establish rules, guidelines, and expectations to ensure a productive and positive learning environment [5].

3.2. Google Forms

As a first tool, we have Google Forms, which serves us for data collection. These forms are used for planning or data collection through surveys, asking questions, presenting various options in the answers and its ease to reach hundreds of users [10].

3.3. Word

As a second tool, we have the Word program, which was used for writing the work plan and the draft questions for the

survey. It is an office program belonging to the Office suite dedicated to writing and reading documents; it allows the creation of them in different extensions, being the most used .docx; it also handles the text language to suggest corrections [11].

3.4. Excel

As a third tool, we have the Excel program, which was used to manage the data obtained in the Google Forms survey. Excel files are spreadsheets that allow working with information using mathematical formulas to obtain new data, compare them and generate statistical graphs [12].

4. Methodology

To carry out this research, we will be free to develop our own methodology. By means of progressive advances that will be given in parts or sections of the project week by week as can be seen in Figure 1. A flowchart was created and presented below to demonstrate our process.

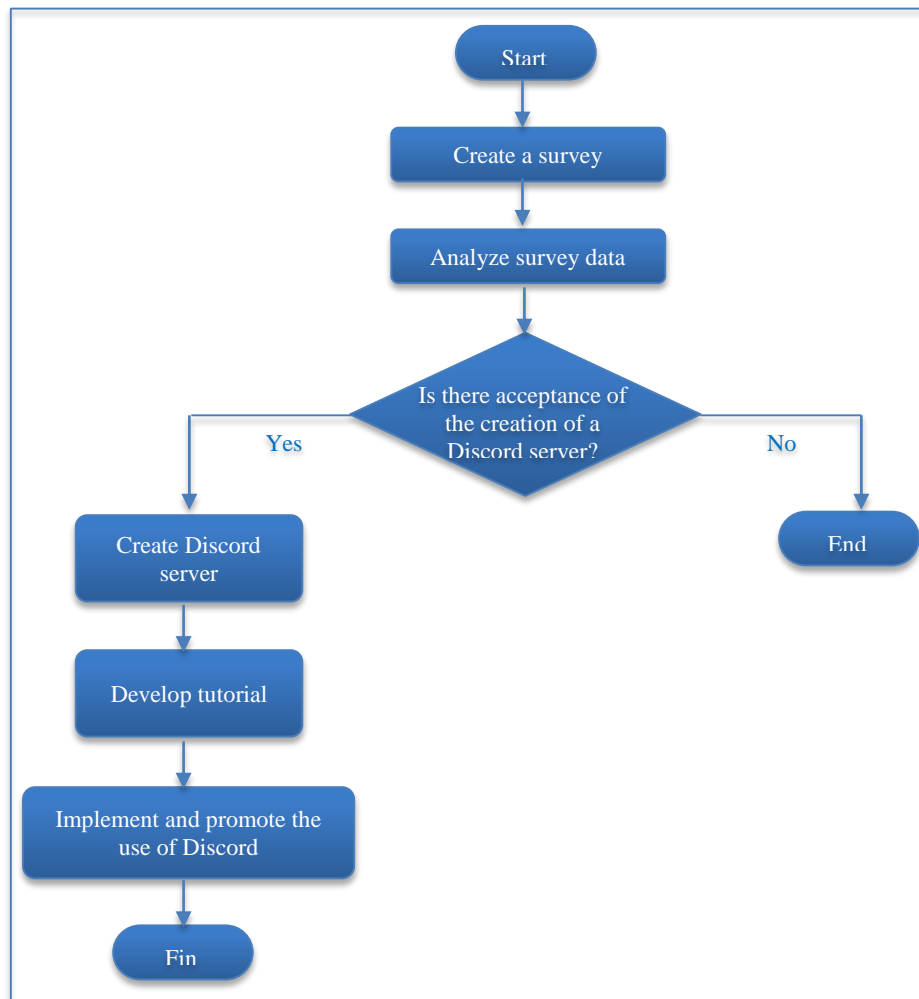


Fig. 1 Flowchart detailing in a general way the path the research will take

4.1. Step by Step

4.1.1. Surveys

At this stage, we conducted surveys or questionnaires to collect information on the level of knowledge and willingness of people aged 20-39 to use discord for educational purposes.

4.1.2. Analysis of Results

We analyze the results of the surveys to understand the level of knowledge and acceptance of discord as an educational tool. If the surveys are favorable and accepted, the creation of the server will take shape.

4.1.3. Discord Server Creation

Based on the results of the surveys and the established objectives, we created the Discord server to include audio and video channels and an appropriate role structure.

4.1.4. Tutorial Development

We created a video tutorial that will show step-by-step instructions on how to create the server, how to join audio and video channels, how to manage roles, and how to use other Discord functions.

4.1.5. Implementation and Promotion

We launch the Discord server and promote its use in education, giving a class on a specific topic in the Discord channel created.

Also, Figure 2 presents a more visual diagram that will be part of our guide for creating the Discord server.

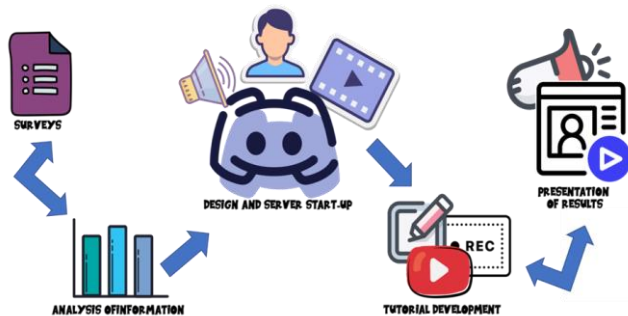


Fig. 2 Graphical representation of the step-by-step of our work

4.1.6. Steps to Create a Discord

The following steps were taken to create the Discord server:

- The first thing is to have a Discord account: We do it from the official Discord website or by downloading the application on one of our devices.
- Create a new server: Once logged in to discord, click the “Create a server” button on the main page. Assign a name to the server and select a location for it.
- We configure the server settings: In the server settings section, we can configure the server name,

privacy, notifications, and permissions options for the members. We also perform server customization, such as the icon and background image.

- We continue with the audio and video channels: We do this from the “+” button in the voice channels part. We have different types of channels, such as public and private voice channels. We can also create video channels or access levels.
- Manage the roles: Click on “Roles” in the server settings. Here, we create the new roles and assign specific permissions to each one. For example, we create the roles “Teacher” and “Student” and give them the respective permissions.
- We integrate bots into the server: Discord has a great variety of bots to add additional functionalities. Some of the ones we will use are the following:
 - MEE6: It is a moderation and customization bot that allows the creation of welcome and farewell messages to assign roles automatically, among others.
 - Dyno: Allows automating the cleaning of chats and expelling members for bad behavior.
 - Rhythm: This is a music bot that allows us to play music on the server’s voice channels.
- We carry out functional tests: We test the server created by means of a “beta” among ourselves in order to evaluate what has been done.
- We share the server: To do this, we must click on the “Invite friends” button on the server. We will have the option to send the invitation link by email or copy the link and share it with students and teachers.

The first part is the creation of the survey, starting with the delimitation of the population to study and defining the objectives that we will have. It was chosen that the subject group of study would be formed by university students from 20 years to 39 years through surveys made in Google Forms to publicize the integration of discord as a means for learning since one of the biggest problems is that many people think that discord is a tool that only those who play video games use it and that only has its use for it as direct on platforms like Twitch through the use of OBS or also that only serves to bring together communities of players of these video games. Our objectives are to make discord known as a tool in education and also to make known that it is not only an entertainment tool for video games.

The form was developed from a bank of questions, choosing the most appropriate as shown in Table 1; these questions will let us know the age they have, because our age range is from 20 to 39 years, in addition to knowing if due to the pandemic, they used virtual tools, as well as the recognition of whether they know the Discord platform, knowing how discord works and knowing if its

implementation would improve the interaction in virtual classrooms. Table 1 lists a series of questions for university students in the Northern Cone where we propose to analyze their knowledge about discord and, propose the creation of a server and invite the respondents to test it.

Table 1. Form to know the knowledge and implementation of discord for university students

| No | Survey of University Students |
|----|---|
| 1 | What age range are you in? |
| 2 | Which university do you belong to? |
| 3 | What is your current academic situation? |
| 4 | Do you recognize this logo? |
| 5 | What do you associate the above logo with? |
| 6 | What do you think Discord is used for? |
| 7 | Do you think using a social network like Discord would help in education? |
| 8 | Discord offers the functionality to create servers in which users can interact through video, text, voice and screen sharing. Do you think these features stimulate interaction in education? |
| 9 | Would you like to be contacted by email to test an education-oriented Discord server? |

From other research that also used forms we took as an idea, some questions that helped in the development of our final questions, the questions are presented in Table 2. were the following [13, 14]:

Table 2. Similar research questions

| No | Similar Questions |
|----|---|
| 1 | Have you ever used Discord? |
| 2 | Interested in learning more about this platform? |
| 3 | This platform is very vitaminized What features do you think Discord includes? |
| 4 | In your opinion, do you think that implementing Discord in education would help to improve interaction in virtual classrooms? |
| 5 | To what extent do you feel that the Discord group encourages or facilitates collaboration among students? |
| 6 | Do you know what a server is? If you wish you can write the idea you have. |

To culminate this part, the survey will be shared with a large number of people seeking to obtain as many responses as possible. As you can see in Figure 2, Discord is multiplatform, which allows users to access it from any device, including consoles [15]; students, while playing or chatting during their snack or break time, can use the audio

channel (depending on the configuration made by the teacher) of a room for leisure or recreation, this within the same channel of the class to coordinate group work and establish better ties in the team [16, 17]. If you wish, you will have the option to share your screen or activate your video. These options are completely free since no license or subscription to the platform is required.

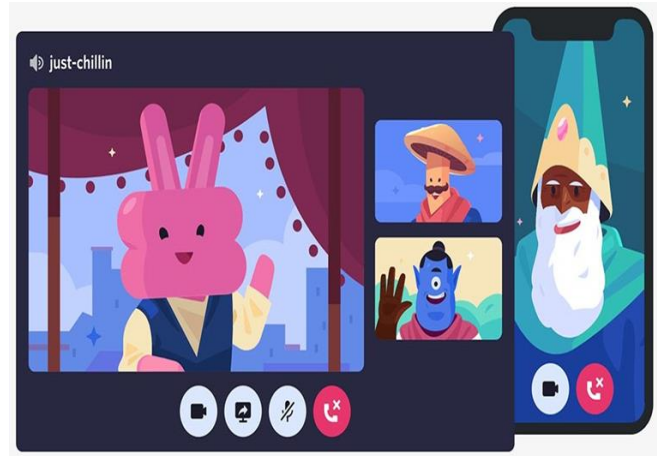


Fig. 3 Discord has a variety of functions

In the second part, the analysis of the results obtained from the survey will be made. In this part, an important decision will be taken since, depending on the results, it will be decided whether to continue with the creation of the Discord server and the development of a tutorial or only to analyze the refusal on the part of the respondents to the implementation of this tool in education. It is perhaps the shortest stage of the work but of great value for us. If we have a positive result in the third part, we will proceed with the creation and implementation. The configuration of a server for demonstration will be done; for this, we will use voice channels, audio, and video, as well as rooms with different rules and the creation of roles and ranks for users (students and teachers). We seek to use the greatest amount of functionalities that the platform has, hoping that users can see the potential that Discord offers them. The fourth part of the work will consist of creating a video tutorial or a virtual chat where the process of creating and configuring the server will be explained in detail. The main objective of this section is to provide a clear and understandable guide so that viewers can replicate the process and obtain a functional server. Below are some suggestions for improving the wording of this part:

The final part comprises the diffusion of the realized thing, as in Figure 4, which will be created as a Discord server focused on education in part 3 and the tutorials of part 4, promoting Discord in education. Precisely, the last question of the form is for the respondent to leave his email for contact once the Discord project is completed. In this way, we can contact the interested parties and present the realized server.

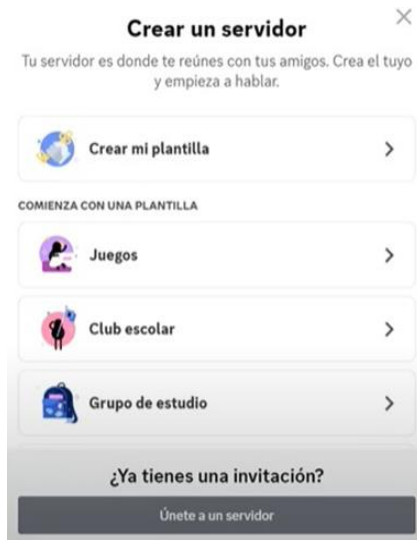


Fig. 4 Discord server creation chart

5. Results

For this section, we analyzed the data from the surveys sent to obtain the graphical statistics to know, first of all, the knowledge of the students about the use of Discord in education and the acceptance to implement a Discord server to perform the analysis process, we used Excel to filter the data obtained to work only with the information that complies with the established [18].

Figure 5 shows in detail which university the students belong to, and we can indicate the following results: Universidad Privada del Norte represents 29.8% of respondents, Universidad César Vallejo represents 28.1% of respondents, Universidad Continental represents 21.1% of respondents, Universidad de Ciencias y Humanidades represents 19.3% of respondents, and Universidad Científica del Sur represents 1.8% of respondents. This shows that there are 4 universities with a higher percentage of respondents, which is positive because we can focus on those universities.

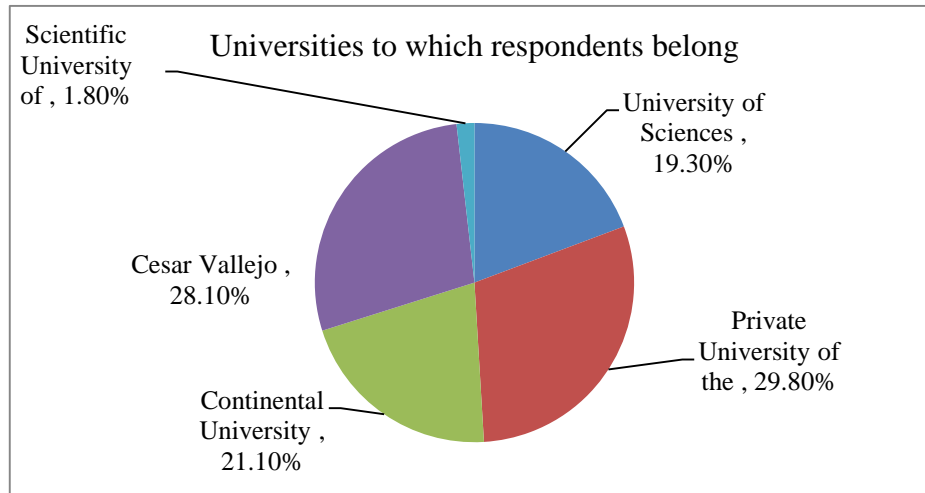


Fig. 5 Graph showing percentages by university

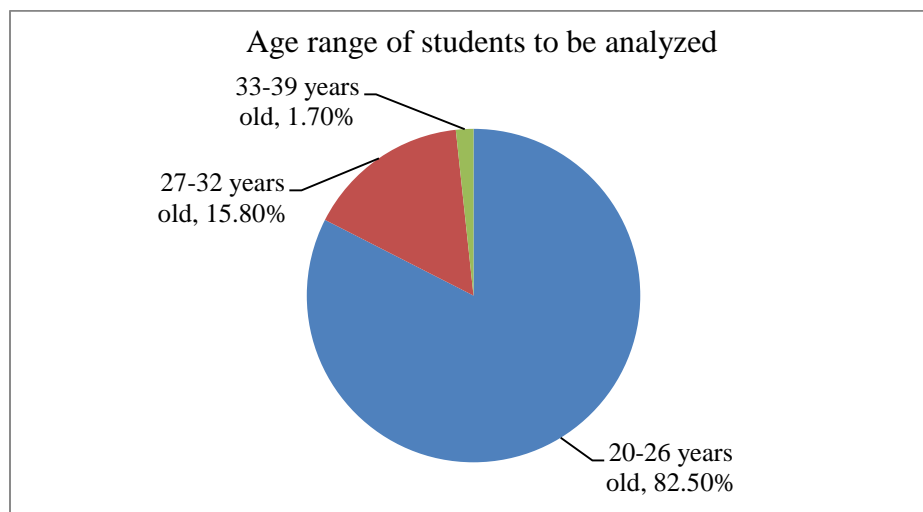


Fig. 6 Student age range

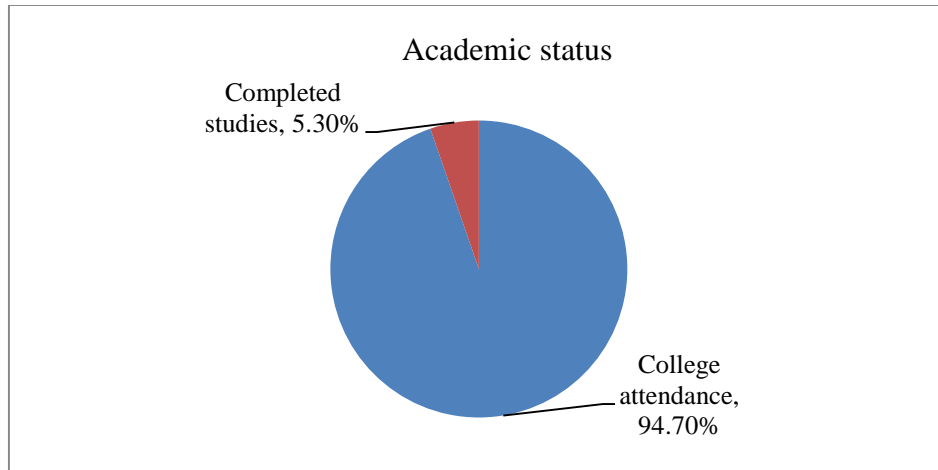


Fig. 7 The academic status of university students

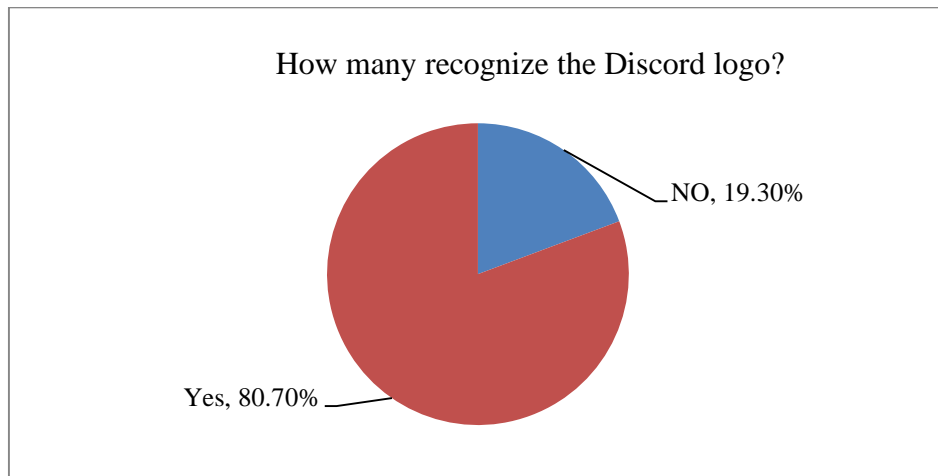


Fig. 8 Logo recognition

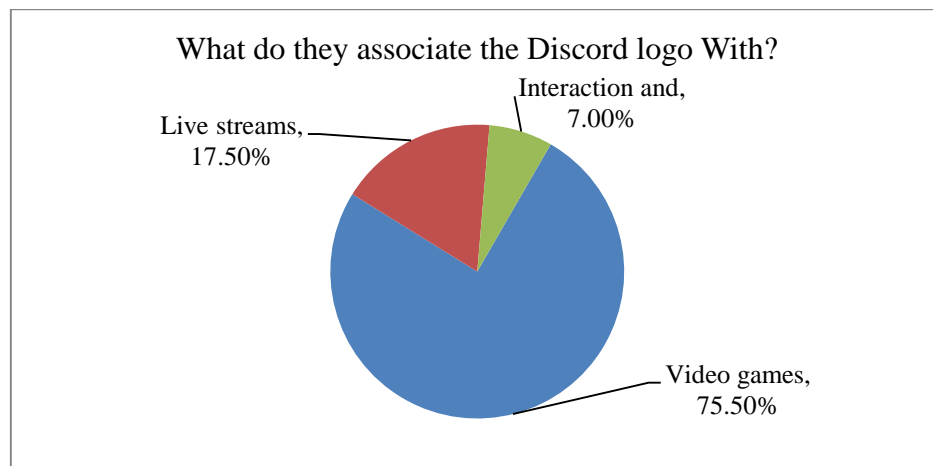


Fig. 9 Discord logo association

Figure 6 gives us a better understanding of the surveyed data that we can indicate from the age ranges of 20-26 years representing 82.5%, 27-32 years representing 15.8%, and 33-39 years representing 1.8%. In addition, it can be seen that there is a higher percentage of the 20-26 age range than the

other age ranges. This is feasible because it is possible to determine at what age range the students know or know about Discord. A graph will be displayed indicating the status of the students.

Figure 7 shows that of the total number of respondents in the academic situation, those who continue with their university studies represent 94.7%, and those students who have completed their studies represent 5.3%. In addition, there is a greater acceptance or interest from students continuing their university studies.

Figure 8 shows that 19.3% of the respondents do not recognize the logo, while 80.7% do. This is a good indicator that a large portion of the university respondents do recognize the Discord logo.

Figure 9 shows that 7.0% of the respondents associate the Discord logo with a community of interaction and learning, representing the lowest percentage.

On the other hand, 17.5% of respondents associate the logo with live broadcasts, and finally, 75.5% of respondents, which constitutes the majority, associate it with video games. These results show that the majority of respondents associate the Discord logo mainly with video games.

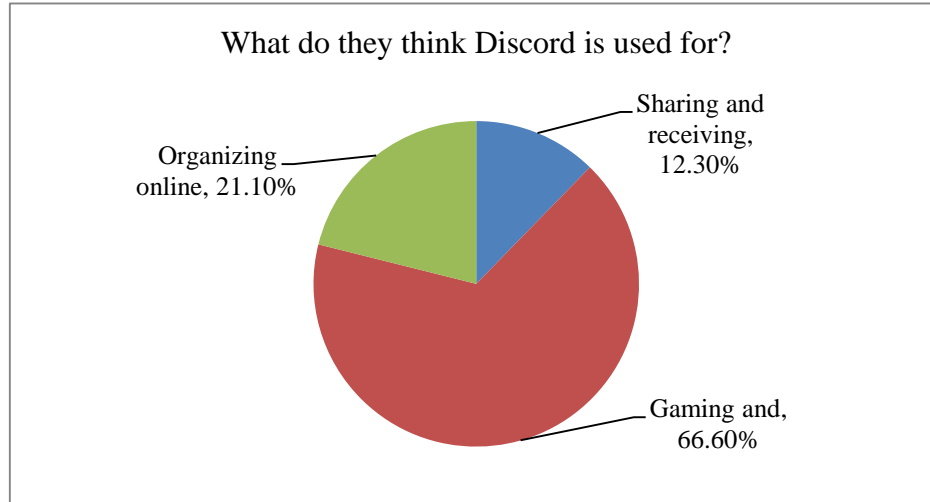


Fig. 10 Discord usage, according to respondents

Figure 10 shows that 12.3% of the respondents believe that Discord is a tool for sharing and receiving support in learning-related groups, representing the lowest percentage. On the other hand, 21.1% of the respondents believe that the use of Discord is for organizing online events and meetings, and 66.6% of the respondents, which constitutes the majority, are of the opinion that the use of Discord is for gaming and

streaming. These results show that the majority of respondents believe that Discord is mainly used for gaming and streaming.

From Figures 8, 9 and 10, we can affirm that the respondents recognize the logo, but they associate it more with video games and live transmissions.

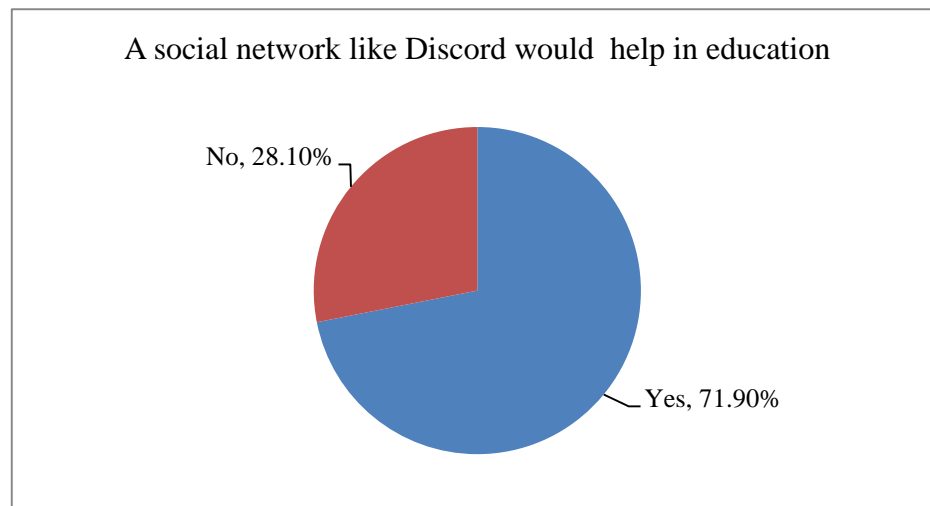


Fig. 11 Acceptance of discord in education

Figure 11 shows that 28.1% of the respondents believe that a social network such as Discord would not help in education, while 71.9% do believe that it would help in education. This is a good indicator that a large portion of the college students surveyed believe that Discord would help in education.

From the survey conducted, we can highlight that most of them agreed to be contacted to learn about the Discord server

once it is implemented, as shown in Figure 5. Thanks to this, it was decided to continue with the project as it had been proposed in the flowchart.

In Figure 12, of the total respondents, 21.1% do not consider that Discord functionalities will help in education, while the majority or 78.9%, consider that Discord would help in education.

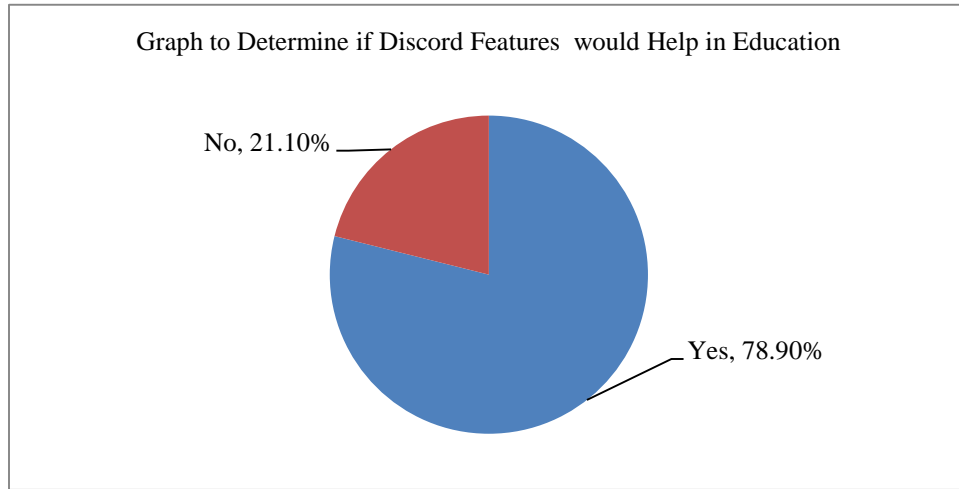


Fig. 12 Graphical representation of the results obtained

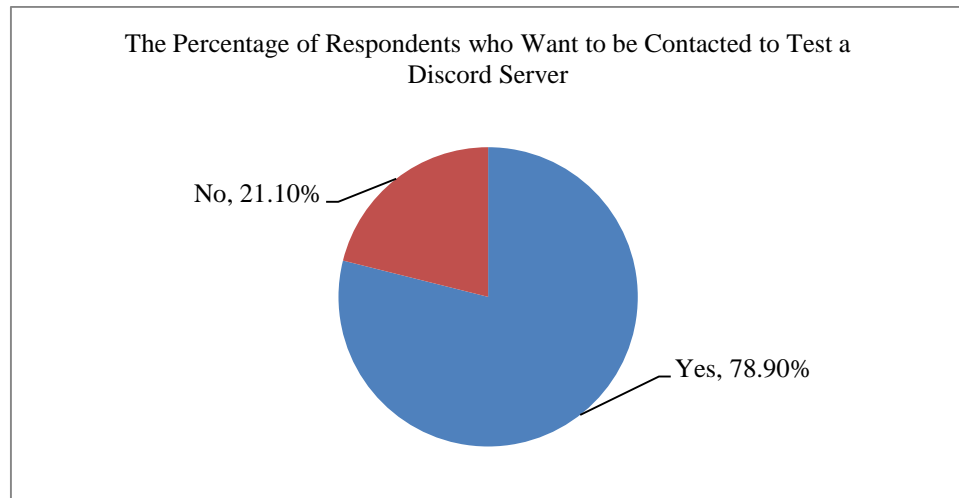


Fig. 13 Graph of university students who want to try the Discord server

In Figure 13, of the total number of respondents, 21.1% did not want to belong to the Discord server, and 78.9% accepted to be contacted to join a created server. This is positive since the Discord server was created in this way.

In addition, thanks to the data we obtained in Figures 11, 12 and 13, we can affirm that the majority of respondents accept Discord as an educational tool. With all this, we move on to creating the Discord server for which we chose a course that we are taking; we detail the following structure in Table 3.

Table 3. Discord server

| | |
|-----------------|---------------------------------|
| Rooms | Chat, Audio y Video |
| Ranges | Administrator, Teacher, Student |
| Bots | MEE6, Dyno y Rhythm |
| Internal groups | Electronics and Systems |

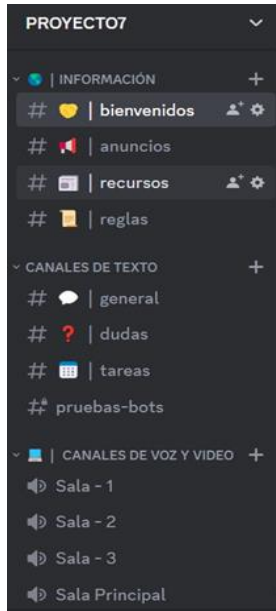


Fig. 14 Screen showing discord functionalities

In Figure 14, we can appreciate the functionalities of Discord that are the information with their respective sections are the welcome, announcements, resources and rules in the text channels there are for general chat, questions and tasks, while the voice and video channels are participants can connect to chat and share the screen of their work or projects.

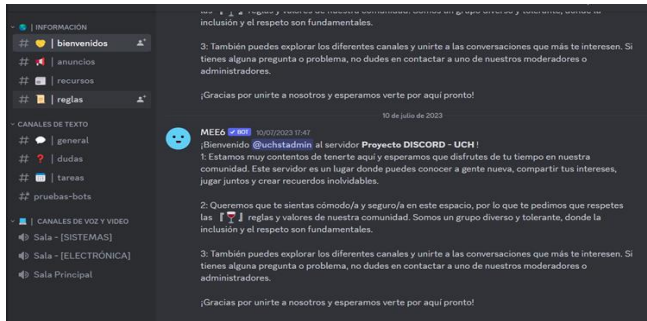


Fig. 15 The screen where we can visualize the MEE6 bot

In Figure 15, we can see the functionality of the MEE6 bot that welcomes those who enter in the Welcome section of the Discord.

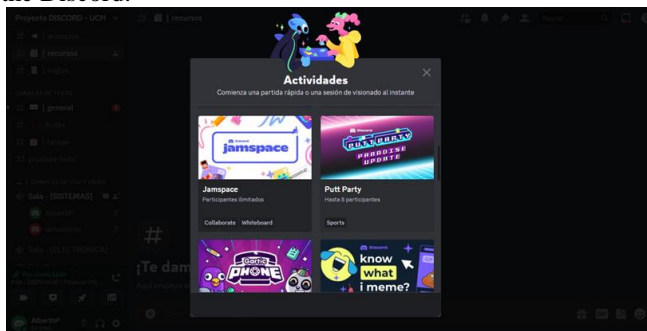


Fig. 16 Interactivity in discord

Figure 16 shows that in the Discord channel, it is also possible to interact in different ways, such as playing games or sharing screens like JampSpace, a space to annotate or draw.



Fig. 17 Discord server rules

Figure 17 shows us that each Discord server has a set of rules, but there are some general guidelines and community standards that apply to most Discord servers. Some rules include being respectful, not spam or advertising, using appropriate content, not bullying, and not sharing personal information. Also, remember that these rules or guidelines are not exhaustive and that different servers may have their own unique rules. It is essential to familiarize yourself with the specific rules of each server, even one and abide by them to create a respectful and pleasant environment for all members of the Discord community.

After having created the Discord server with its respective functionalities, a tutorial on how to implement a Discord server was created.

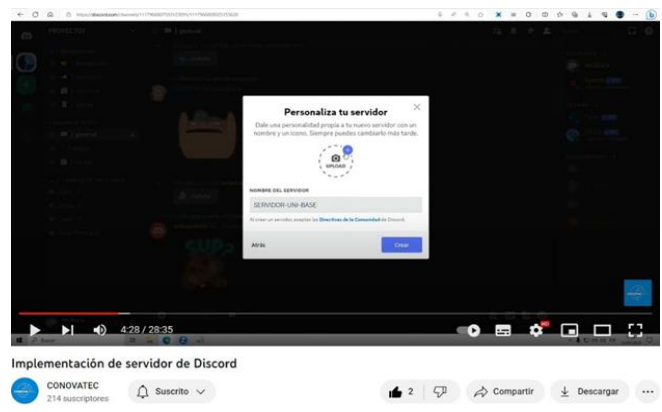


Fig. 18 Discord server rules

Figure 18 is the tutorial on how to create a Discord server with its respective functionalities; also, this tutorial was uploaded to the YouTube channel of Connovatec (Innovative Community of Technology), which is a community with online presence at national and international levels of the science, technology and engineering sector that belongs to the CMPJ or Metropolitan Council of Participation of the Youth of Lima.

After having concluded all this, we invited the respondents who agreed to be invited to the Discord server; thanks to the above-mentioned tutorial and the implementation of the YouTube tutorial, we were able to implement and promote the use of Discord in the educational environment.

6. Discussion

It is correct to state that the number of respondents has been reduced since only 67 students have been reached, of which only the responses of 57 are included in the research. In order to improve the study, we should aspire to have a larger target group that includes not only university students from Lima Norte but, in general, any university student from the capital who wants to participate in the survey since when filtering the responses, those who belonged to other universities in other areas were discarded. It is also important to note that our intention to implement Discord as a videoconferencing platform in education comes a little late, [8] indicates that when asking students about their preference on which platform is the best option, Zoom (51%) and Meet (40.3%) are imposed on the others, The worrying thing is that Discord does not even appear as an option, this leaves us with a possible answer, that both teachers and students do not see Discord as an alternative option for the development of virtual classes, this study was done in the time of pandemic where Discord could have emerged as an alternative but it did not happen. Likewise, [8] presents the results of what situations students experience when interacting with these platforms.

Table 4. Situations experienced by the students

| | |
|---|-------|
| Increased connectivity with my colleagues | 26.2% |
| Strengthening learning | 24.2% |
| Boredom | 17.4% |
| Fatigue | 8.7% |
| Generation of new challenges | 6.7% |
| Stress | 5.4% |
| Others | 11.4% |

We can notice that boredom and tiredness are in third and fourth place, representing 26.1% of the total; this is where Discord's more interactive and cooperative approach could come in.

7. Conclusion and Recommendations

It was carried out with the points indicated in the study objective, which was the creation of the Discord server.

Surveys were carried out by interviewing students from different universities in the Northern Cone. The application of this platform in education shows that it is a versatile, valuable and effective tool to improve collaboration and communication between students and teachers.

It is clear that university students know about Discord and have an idea of its use, and their favorable acceptance of participating in a test server for education allowed us to continue this research. This also demonstrates an intention to see new platforms.

In the development of the server, it could be noticed that the implementation is faster if previously it was analyzed which rooms will be created and the roles that will be, among others. The bots are an essential part of the improvement that Discord presents in front of other services, so the users could add others that add more functionalities and, in this way, vitaminize the tool. It is also necessary to always have an administrator profile and not delegate this role to teachers in order to delimit responsibilities between those who manage the server and the teachers.

Through this research, it can be concluded that the proposal to implement Discord in the university student community from 20 to 39 years old was able to capture the interest of students in the Northern Cone, as evidenced by a survey conducted. The survey results showed a positive acceptance by students regarding Discord's functionalities and potential to improve education.

The survey revealed that students believe Discord's functionalities could help the educational sphere. In addition, respondents perceive Discord as a social network that can contribute favourably to education. Also, most students continue their studies and are willing to be contacted to test the server and interact with other participants. Discord in the educational sector is ideal and acceptable for contributing to future research.

Thanks to the acceptance of Discord as an educational tool, we were able to create a server with the functionalities of group chats, voice and video channels, and bots that help in the management of the server; we were also able to implement a tutorial on the YouTube channel of a technological diffusion community such as Connovatec and invite to the Discord channel the respondents who accepted to be invited according to our survey and thus promote the use of Discord in the educational field.

References

- [1] Population and Housing, INEI, 2022. [Online]. Available: <https://m.inei.gob.pe/estadisticas/indice-tematico/poblacion-y-vivienda/>
- [2] Peru Final Results of the National Census, National Census: XII Population, VII Housing Tomo 1, INEI, 2018. [Online]. Available: https://www.inei.gob.pe/media/MenuRecursivo/publicaciones_digitales/Est/Lib1544/00TOMO_01.pdf

- [3] Peru Final Results of the National Census, National Census: XII Population, VII Housing Tomo 5 INEI, 2018. [Online]. Available: https://www.inei.gob.pe/media/MenuRecursivo/publicaciones_digitales/Est/Lib1544/00TOMO_01.pdf/
- [4] Peru Reached a Record High in Computer Imports in 2020, *El Peruano*, 2021. [Online]. Available: <https://elperuano.pe/noticia/113879-peru-alcanzo-un-record-en-la-importacion-de-computadoras-en-el-2020/>
- [5] Ruth Sofia Contreras-Espinosa, and Jose Luis Eguía Gomez, “Discord as an Online Teaching Platform During the Covid-19 Pandemic,” *FAEEBA Journal - Education and Contemporaneity*, vol. 31, no. 65, pp. 106-120, 2022. [[Google Scholar](#)] [[Publisher Link](#)]
- [6] Rocio Serna-Rodrigo, and Sebastian Miras, *Discord's Didactic Possibilities: Informal Communication in the Language and Literature Classroom*, Institute of Educational Sciences of the University of Alicante, pp. 1-14, 2021. [[Google Scholar](#)] [[Publisher Link](#)]
- [7] José Alejandro Vargas-Díaz et al., *Discord as a Virtual Learning Environment for the Development of Collaborative Projects with Students*, Smart Society: Strategies for ICT Skills Development, pp. 1-156, 2021. [[Google Scholar](#)]
- [8] Carlos Chanto Espinoza, and Jorge Loaiciga Gutierrez, “Student Perceptions of the Use of Videoconferencing During Virtual University Classes During the Covid-19 Pandemic,” *Education*, vol. 31, no. 60, pp. 54-78, 2022. [[CrossRef](#)] [[Google Scholar](#)] [[Publisher Link](#)]
- [9] Vilma Esther Saavedra Valentin, “Using Videoconferencing as a Collaborative Learning Support Tool for Second-Year Students Of the Computer Science Course at the Faculty of Law of the University of San Martín De Porres,” Master's Thesis, University of San Martín de Porres, pp. 1-105, 2019. [[Publisher Link](#)]
- [10] Hermelinda Patricia Leyva López, Monserrat Gabriela Pérez Vera, and Sandra Mercedes Pérez Vera, “Google Forms in Diagnostic Assessment as a Support for Teaching Activities. Case Study with Students of the Bachelor's Degree in Tourism,” *RIDE Ibero-American Journal for Educational Research and Development*, vol. 9, no. 17, pp. 84-111, 2018. [[CrossRef](#)] [[Google Scholar](#)] [[Publisher Link](#)]
- [11] Patricia M. Folco, “Information and Communication Technologies as Tools for the Appropriation of Reading and Writing Skills Among Deaf and Hard of Hearing People,” *Revista Ibero Americana de Education*, vol. 54, no. 1, pp. 1-10, 2010. [[CrossRef](#)] [[Google Scholar](#)] [[Publisher Link](#)]
- [12] Myrna López Noriega, Cristina Lagunes Huerta, and Santa Herrera Sánchez, “Excel as an Affordable Tool for Teaching Statistics,” *Theory of Education. Education and Culture in the Information Society*, vol. 7, no. 1, pp. 1-10, 2006. [[Google Scholar](#)] [[Publisher Link](#)]
- [13] J. Francisco Andújar et al., “Application of Competitive and Collaborative Gamification in Basic Computer Architecture Subjects,” *Proceedings of the 26th Conference on University Teaching of Computer Science*, Valencia, vol. 5, pp. 85-92, 2020. [[Google Scholar](#)] [[Publisher Link](#)]
- [14] Alicia Muñoz Marín, “Twitch and Discord, New Media Companions for Spanish Youth to Alleviate their Loneliness,” University of Seville. Degree in Journalism, Final Degree Project, Report, pp. 1-96, 2021. [[Google Scholar](#)] [[Publisher Link](#)]
- [15] Muhammad Lukman Arifianto, and Iqbal Fathi Izzudin, “Students’ Acceptance of Discord as an Alternative Online Learning Media,” *International Journal of Emerging Technologies in Learning*, vol. 16, no. 20, pp. 179-195, 2021. [[CrossRef](#)] [[Google Scholar](#)] [[Publisher Link](#)]
- [16] Amy M. Wiles, and Sean L. Simmons, “Establishment of an Engaged and Active Learning Community in the Biology Classroom and Lab with Discord,” *Journal of Microbiology & Biology Education*, vol. 23, no. 1, pp. 1-3, 2022. [[CrossRef](#)] [[Google Scholar](#)] [[Publisher Link](#)]
- [17] Bradley Robinson, “Yeet Nitro Boosted”: A Postdigital Perspective on Young People’s Literacy Engagements with the Discord Platform,” *Literacy Research: Theory, Method, and Practice*, vol. 71, no. 1, pp. 359-376, 2022. [[CrossRef](#)] [[Google Scholar](#)] [[Publisher Link](#)]
- [18] Sigit Setiyanto, and Ismail Setiawan, “Data Science with Excel,” *International Journal of Computer and Information System*, vol. 3, no. 3, pp. 104-110, 2022. [[CrossRef](#)] [[Google Scholar](#)] [[Publisher Link](#)]