

# Using Discord as an Extension of the Emergency Remote Teaching Classroom during the COVID-19 pandemic

Glauccio H. M. Moro, Anderson Vermonde, Artur Mittelbach, Breno Azevedo, Bruno Campagnolo, Claudio Carvilhe, Jose G. Noronha Filho, Mauricio Perin, Carlos N. Silla Jr.

Pontifícia Universidade Católica do Paraná (PUCPR) – Curitiba, PR, Brazil

{ghmoro, vermonde, arturfm, maddox.br, brunodepaula,ccarvilhe, geraldo.noronha, mauricio.perin, carlos.sillajr}@gmail.com

**Abstract**—This Innovate Practice Full Paper presents how a group of teachers at our university have used Discord as an extension of the emergency remote teaching classroom due to the challenges imposed by the pandemic, caused by the coronavirus, for educators and students worldwide. Novel teaching and learning strategies, and several online tools, have been used to teach different subjects. In this paper we present how some teachers in a game development undergraduate course from the Polytechnic School have used the Discord communication tool as an extension of our virtual classroom. This paper presents some of the teaching strategies we have used with Discord as well as the students' perception and feedback about the use of this tool.

## I. INTRODUCTION

The year 2020 was completely atypical in history. The emergence of COVID-19, a disease caused by the SARS-CoV-2 virus, has affected practically all countries in the planet. To this date, the world has nearly 180 million cases, with close to 4 million deaths. In Brazil, we have more than 18 million cases, with more than 500 thousand deaths. This is the greatest sanitary tragedy in the history of our country. However, it is not only in the field of physical health that COVID-19 has acted in a devastating manner. It changed the whole logic of social behaviors already established by people, what substantially affected the society. Physical distancing, the use of masks, and other changes meant that people had to adapt their realities to prevent infection.

Hall [1] brings to light the idea that human beings are always adapting and giving purpose to their actions, and thus building meaning. These social actions are expressed in practices of signification and suffer transformations in our cultures. They encode, organize and regulate the conduct of our actions, which together form what we know as cultural identity. Since the pandemic started the way we work, communicate and build spaces are now different.

The resulting convergence of content represented a huge change in pre-established paradigms. This type of displacement of specific media content, according to the perspective of Jenkins [2], flows through several channels in a high degree of interdependence of communication systems, moving towards multiple modes of access to increasingly complex content, from corporate media to participatory culture. Jenkins clearly could not wonder that the debate produced by a concept of media convergence, and the content discussed back in 2008, would be so widely applied to various social media channels as

an almost unique, alternative way of communication, following the pandemic which started in 2019.

In the field of education, this process was not different. Teachers across the world had to adapt abruptly so that classes could continue, despite many not being prepared for this new reality. There were many ways of working with students. New dynamics and ways of working with education have been, and are still being, tested by what has been called Emergency Remote Teaching (ERT) [3].

In the field of computer science and engineering education there has been some papers that addressed the impact of ERT in a specific country (e.g. [4] in the UK, [5] in Nigeria) or all courses in an engineering degree (e.g. [6] for the School of Telecommunication Engineering of the Universidad Politecnica de Madrid). There has also been some papers that addressed how the in person module was adapted to the ERT scenario, such as Principles of Electric Circuits [7], Development of Distributed Software [8] or Redesigning a First-Year Makerspace project [9].

Some studies also report the perception of teachers and students about ERT. In the study of Ahag et al. [10] the authors report the students' perceptions from three countries (Singapore, Sweden, Taiwan) about the impact of the covid pandemic on Engineering Education. According to [10] the major problem mentioned by the Swedish students was the lack of social interaction among the students and with the teachers. The lack of in-person interaction between students and teachers has also been reported as one of the major challenges for students of Pakistan [11]. Taiwanese students also mentioned the issue that the online environments were less efficient for group discussion, and that it was challenging to interact with the teachers during the lecture. Connectivity issues have also been reported as one of the problems faced by students in ERT [5], [10], [11].

For Park et al. [12] the success of engineering education in the short and long-term depends on providing students with a positive learning experience during the establishment of this novel approach to remote engineering education.

The main hypothesis of this paper is that the use of a software originally meant for the communication of the gamer community, namely Discord<sup>1</sup> is able to mitigate some of the social interaction inadequacies introduced by ERT. To verify this hypothesis this paper addresses the relationship between

<sup>1</sup>Freely available at: <http://Discord.com/>

education and remote experiences on digital platforms as experienced by the authors of this paper, during the COVID-19 pandemic in Brazil, with the use of the Discord communication platform. To this end, we will start the text with a reflection on teaching and education according to Freire [13], culture and society in their meanings, as debated by Hall [1], and the thought of Jenkins about digital convergence [2].

This study will also present the impressions and the feedback given by our students. It's a belief of the authors that positive and negative experiences on the platform are important to create a solid theoretical background in relation to the educational strategies that are being used during this ERT period.

This article is presented as a potential source of value for educators who, today, have concerns about how this kind of process and the digital life, which used to operate in parallel to so many other forms of interaction in people's lives, currently is for many the only feasible channel of communication flow and education. It's proposed that the extension of the ERT classroom experience with the Discord platform may shed light onto this type of interaction, traditionally realized in person.

## II. THE DIGITAL CLASSROOM

As university teachers, we were used to a specific set of dynamics in the classroom with students. Teacher-student contacts, until March 2020, followed the usual university pattern, with exams, projects, assignments and dynamics being carried out physically in classrooms.

Up to that point in time, digital tools and information technology had served as a support for classes in several ways. Many classrooms provided computers and internet access to students, and most procedures, from work to calls and notes, had been digital for a long time. Eventually, teachers used a digital platform to communicate with students before or after regular class hours. However, with the COVID-19 pandemic, this work logic was completely changed overnight. Face-to-face classes were suspended and remote classroom dynamics were adopted at the university. At the PUCPR university, this occurred precisely on March 17, 2020.

It is important to highlight that ERT classes are different from distance learning classes (distance education) [3]. One major difference, at least in the presented case, is that during the usual class hours the teachers always go live in one of the available digital platforms, as in a physical classroom, while the distance learning model in Brazil is based on previously recorded classes and educational dynamics that are not necessarily applied live. Many of these classes have a tutor who takes questions from students at specific times, which is not the case covered in this paper.

During the first semester of ERT, in 2020, the PUCPR university recommended the use of services already employed by the institution, e.g. Blackboard Collaborate Ultra and Microsoft Teams, to assist on lecturing the classes remotely. However, the university did not make the use of these systems mandatory, giving the teachers freedom to use other platforms

that they were more familiar with, or which would be more convenient for their classes. It should be noted that in our particular case, we had a one week interval to go from the usual in-class teaching to the challenging, and unknown, ERT.

The authors of the present paper considered this to be a valuable opportunity presented by the university, since even before the pandemic, depending on the content to be taught, a specific teacher would prefer teaching in a particular room, laboratory or space which was considered capable of providing a more suitable environment for the learning experience. In PUCPR different teachers have used, experimented and tested several tools and platforms besides the recommended ones. One of these platforms was Discord.

Discord was initially launched in 2015 as a communication and streaming platform for games. It was originally made to provide player communication in a game called Fates Forever<sup>2</sup>. The service was popularized within streaming platforms like Twitch.tv<sup>3</sup> where streamers and communities started using Discord to exchange messages and connect to each other. The lightness of the software and some specific features, like the possibility of having the chat interface be overlaid on the game screen during play, and the ease of building and customizing communities, made the adoption of Discord grow quickly. During its first year, there were only about 25 million people using the platform. With the advent of the COVID-19 pandemic the usage increased to 120 million active users, reaching 800,000 downloads per day in October 2020. Not coincidentally, this is the time frame of widespread success of "Among Us"<sup>4</sup>, a social video game based on live player communication which has been correlated to a large escalation in Discord usage [14] (2020).

The authors of this article had been working with Discord for some time before the pandemic (Figure 1 illustrates the server we created for one of our classes), lecturing to students from different fields of knowledge and courses, having in common the Digital Games Development undergraduate course. The collective experience with the software and the knowledge about its potential and resources was acquired by using it as an online game support tool, or for experimenting with it for teaching purposes. Even so, many professors in the digital games course had used, or at least explored, other software platforms, such as Zoom, Microsoft Teams and Collaborate. In the end the decision was made to use Discord as the backbone tool for all classes. The reasoning was multi-fold, including the wide adoption of the tool by the course students and, most noticeably, the relative ease to set up the servers.

The professor team perceived that both classrooms and the teaching process are alive and malleable, in the sense that no matter how much pre-planning goes for each part of the lessons, each professor will handle it in a personalised manner, and the real time interaction and questions from students will dynamically transform the classroom every time. Thus,

<sup>2</sup><https://www.mmogames.com/game/fates-forever/>

<sup>3</sup><http://twitch.tv/>

<sup>4</sup><https://innersloth.com/gameAmongUs.php>

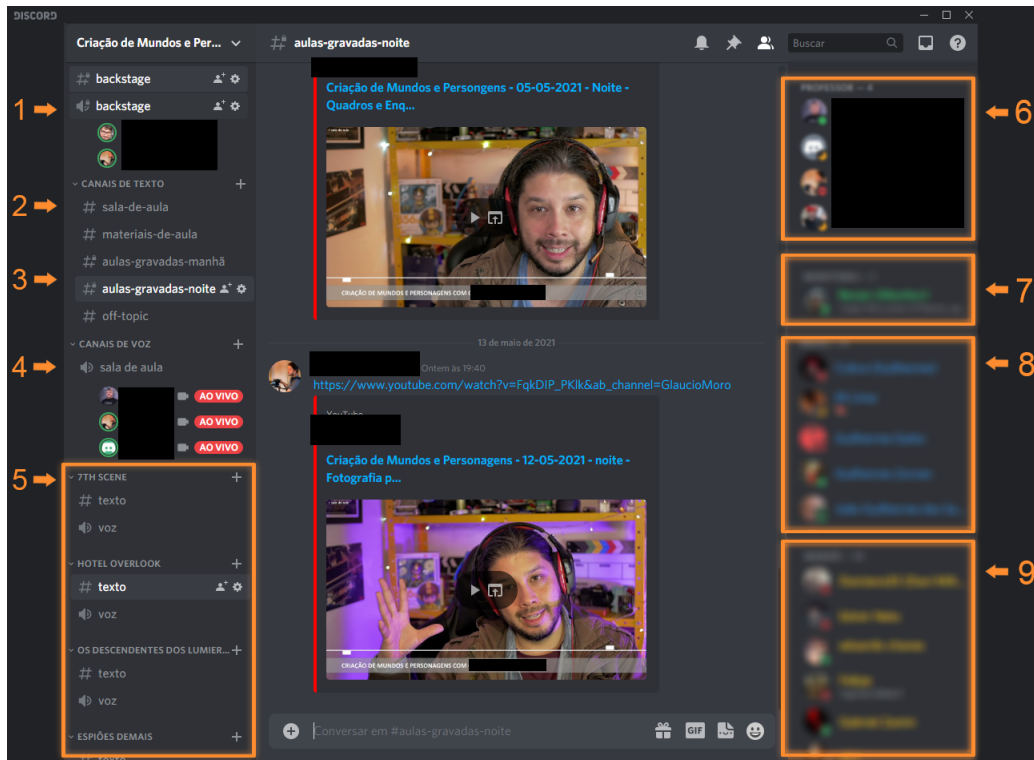


Fig. 1: Example of the Discord Interface customized for one of our modules, where: (1) Backstage audio and text channel; (2) Text Channels for class related material; (3) Text Channels for supplementary material, such as recorded lectures; (4) Audio channel used during live classes; (5) Examples of different text and voice channels created for different students teams; (6-9) Users online grouped by their different Discord tags, being teachers in (6), student monitors in (7), students from the morning class in (8), students from the evening class in (9).

regardless of the repetition of subjects and presented concepts, no two classes will be the same. As Freire [13] (1987, p. 49) states:

*“It is not our role to speak to the people about our own view of the world, nor to attempt to impose that view on them, but rather to dialogue with the people about their view and ours.”*

The fact that Discord was created as a virtual socialization tool is a potential advantage, for synchronous online education, relatively to other tools which were built around the idea of discrete virtual meetings, many times for business purposes, like Teams or Zoom.

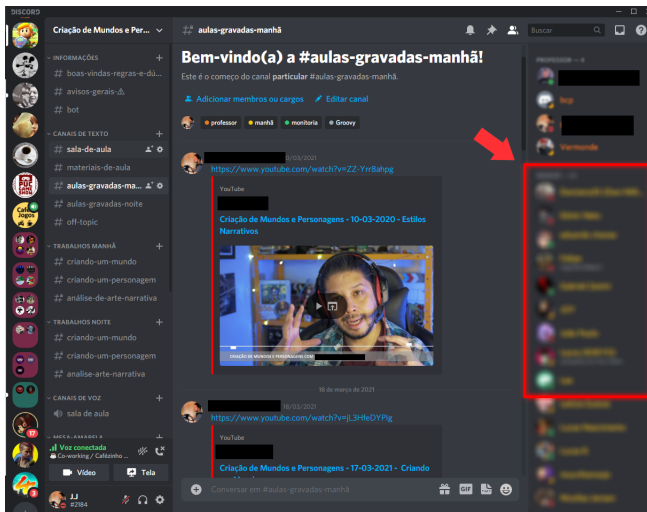
Thus, starting from its concept, Discord already provides something that the COVID-19 pandemic removed from the in-person education process: the act of socializing, an inherent aspect of the learning process in all classes so far. The human factor of socialization, the chat with colleagues at corridors during intervals, teachers moving between classrooms, direct interaction with senior or junior students from other classes, all compose the notion of what the University is. In fact, the meaning of University comes from the Latin word for universality, totality, set. It is a universe of elements responsible for providing robust education. The presented pedagogical ideals around the usage of the Discord platform were built

in consideration of these points, providing metaphors for the minutiae of education and behaviors in the physical classroom and its surrounding environment, to provide a digital classroom experience closer to the real one.

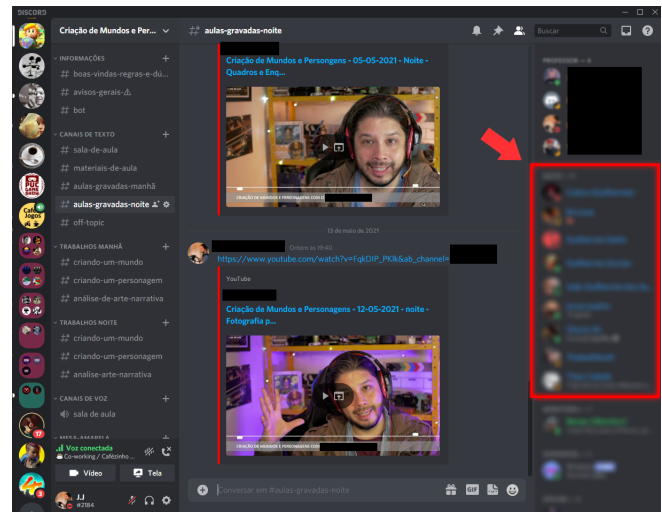
### III. DISCORD AS A METAPHOR FOR THE CLASSROOM

Jenkins [2] discusses how a set of usages, associated with social and cultural practices, often arise on top of an established technology. This means that many things developed for a specific type of technology are culturally appropriate, and forms of use emerge from them. That is, there’s a process of cultural re-appropriation through the usage of a technological tool, which usually happens naturally. It is based on the way we use things, how we represent elements, what we speak, the objects we interpret, bring and integrate in our daily practices, that we create meaning [1]. That is how cultures can be formed around artifacts.

In the experience of the authors of the article, some advantages in the usage of Discord was observed during these online classes. A list of some observed situations is presented below, including appropriations made by Discord, able to bring their users closer to the established idea of physical classrooms.



(a) Discord "Yellow Tag" - Morning Class View



(b) Discord "Blue Tag" - Evening Class View

Fig. 2: Example of restricted views based on tags.



Fig. 3: Some of the Emojis Created by the Students to use in the Discord servers. In the first row the first four emojis were created by Gabrielle Nascimento and Giovana Gasperin. In the second row the first three emojis were created by Artur Rodrigues (@artur.rodsil) and the remaining ones by Juliana Tedesco Mariani.

In Discord it is possible to create independent discussion channels of text or sound in separate tabs (illustrated in Figure 1 - Items 2 and 3 for text channels, and Item 4 for sound channels). Using this feature, it was possible to create channels within the classroom server with custom names, like "Team #01", "Team #02", and so on, as a metaphor for the collaborative work desks that were used in the physical classrooms of the university (Illustrated in Figure 1 - Item 5, where the Team's Names are: 7th Scene, Hotel Overlook, Os Descendentes dos Lumier, Espioes demais)).

Rooms were also created with the fantasy names of the students groups, as minimalist virtual game studios. Students chose the names of their teams, then got text and audio channels created, dedicated for the production of projects in the course<sup>5</sup>. This made it possible to create an environment

where the groups could interact independently and still be in the same class. One way of thinking about a communication culture is that concepts shared with a whole class, or with just a handful of students in a separate space, have differences regarding the codes that govern the relationships of translation and the subjects who participate in them. In other words, we act differently when we are with a small group of friends, and this is not possible within platforms that do not empower students to create interaction subsets, as possible within physical classrooms.

The conception and culture, by Hall's reasoning [1], are given by the set of shared meanings, and language is a process of signification. By naming a text channel "classroom" we suggest, in the virtualized space, a place where the students' senses would be in thought.

<sup>5</sup>All teachers of the module also had access to all team channels.



Fig. 4: Samples from some of our live lectures using Discord

It was also possible to create an idea of continuity through the messages and files sent, both within groups and in the shared environment where the lectures took place. The automatic time-stamped recording of the classes built an easily accessible log of the class. This fact is positive in several ways, providing search of previously discussed topics, through keywords and filter criteria like date and person, and the visualization of the development processes of the projects inside the channels. As students migrate from “desk to desk”, or from group to group, screenshots of the work progress and collective feedback about projects is made easy. This naturally builds a participatory culture within the server, providing to the students motivation and inspiration from other projects, and a direct way to ask questions to the groups of colleagues without resorting to the Professors. It’s also very common the presence of students in their group channel doing work in out-of-class hours.

Models of production and circulation of new ideas, through the access to new social structures where the collective intelligence exist, are in part, where models of cultural production, the participatory culture, are built [2].

In the same way, teachers from different modules who used to show up at the classroom door, in the traditional model, would join and participate in the remote classes, creating different dynamics. Students from other modules (or studying the same class but in a different time shift) would also venture into the virtual classrooms and participate in the classes. In some cases the same module was lectured for classes in the morning and evening shifts. The students who missed the morning class, for example, ended up watching classes in the evening period, a very common fact during pre-pandemic times. To better replicate that aspect, morning and evening classes of the same module are in a single discord server, separated only by Discord tags. The Discord tag mechanism makes it possible to separate content for students of different classes

for the same module. Commonly the professors recorded these lectures, posted them on YouTube, and then shared the link in a specific Discord channel inside the server, so that students could re-watch the recorded lectures.

The Discord tag mechanism prevents students in the morning class from seeing contents specific to the evening class, and vice versa. The morning class students were given the yellow color tag (Figure 1 - Item 9), while the blue color tag was given to the evening class students (Figure 1 - Item 8). Figures 2a and 2b show the different views for the morning and evening class students respectively.

Another interesting approach used by the professors was to create a “backstage” category with audio and text channels (1 - Item 1). These channels serve as a coffee break room for teachers, keeping them connected, or allowing them to discuss and plan the discipline progression, when a module is taught collaboratively. Using the Discord tag mechanism, the backstage is visible only to people with the “teacher” tag, as illustrated in Figure 1 - Item 6.

The same strategy was employed in the creation of specific channels for the professors to interact with “class monitors”. Class monitors are senior students, who previously took and were approved in that class, selected by the faculty to provide additional support to the students. These class monitors are also highlighted on the class server, as shown in Figure 1 - Item 7.

Another interesting factor to mention is the customization of the servers with custom-created emojis. Some collections were created by students, portraying teachers, colleagues and memes which are frequently used in class. This phenomenon was not exactly programmed, it was an appropriation by the students, as they became more comfortable with the platform during the modules. Figure 3 presents some of the emojis created by students.

These experiences on Discord, combined with audiovisual formats built for students (Illustrated in Figure 4), have been extremely effective in the classes. The audiovisual effects and constructions are mentioned here only as side comments, as we believe that just the analysis of the theory and reflection about the video language and other ways of communicating and educating through classes, similarly to what is done by content streamers in services like twitch.tv, is enough content to require another paper to discuss properly.

Another feature available in Discord is the use of “mentions”, a way to generate a notification for a specific individual, or group of individuals. This is possible by writing the special character @ followed by the person’s name, or Discord group tag. For example, if the students want to ask for assistance, they can use @teacher or @monitor in their specific team text channels. This feature is highly appreciated, as it allows professors to be available and aware of the student needs and questions, while not disrupting the regular lecturing process. To make an analogy with the in-person classes, this is similar to the moments when professors go around the room to see how are the students doing, since we can see all the teams text channels, used to discuss ideas and problems. Any time

	<b>Discord</b>	<b>Blackboard Collaborate Ultra</b>	<b>Microsoft Teams</b>	<b>Zoom</b>
<b>License</b>	Free	Paid	Paid	Paid
<b>Multiple Shared Screens</b>	Yes	No	No	No
<b>Remote Access</b>	No	No	No	Yes
<b>Chat Persistence</b>	Yes	No	Limited	No
<b>Role Assignment</b>	Yes	Limited	Limited	Limited
<b>Customization</b>	High	Very Low	Very Low	Very Low
<b>Call Participant Limit</b>	25(video)/50(screen)/500(audio)	500	300	100 to 1000 (depending on plan)
<b>Participant Mobility</b>	High	Limited	High	Limited
<b>Built-in Call Recording</b>	No	Yes	Yes	Yes
<b>Login Requirement</b>	Yes	No	Partial Access	No
<b>Platforms</b>	Desktop/Mobile/Browser	Browser	Desktop/Mobile/Browser	Desktop/Mobile/Browser
<b>Video/Screen Watching</b>	Action Required	Automatic	Automatic	Automatic
<b>Individual Volume Adjustment</b>	Yes	No	No	No
<b>Bot Integration</b>	Yes	No	No	No
<b>Permissions Management</b>	Yes	No	No	Limited
<b>Built in file sharing</b>	Yes	No	Limited	No

Fig. 5: Features and characteristics of Discord, Blackboard Collaborate Ultra, Microsoft Teams, and Zoom.

the students want our assistance, this feature allows them to get our attention, or be notified asynchronously of a certain issue or request, when not immediately available.

#### IV. USING DISCORD IN COMBINATION WITH OTHER PLATFORMS

Depending on the teacher and the class being taught, Discord might not be the one-size-fits-all solution, since as with every other platform, it has its own pros and cons. As such, it is possible, and in many situations advisable, to combine other platforms and tools with Discord while teaching. Figure 5 summarizes the main features and characteristics of Discord, Blackboard Collaborate Ultra, Microsoft Teams, and Zoom — the platforms mostly used by the PUCPR professors during ERT. It is important to note that even though Collaborate, Teams and Zoom have free versions, in the present analysis the paid versions were considered, for their superior feature set.

Regarding the combination of different tools with Discord, Zoom presents some very interesting features for programming classes. Zoom allows the host to take remote control of the participants' machines, or show a visible pointer, from the professor's machine, overlaid on the students streamed screen. These features are particularly helpful in situations where it is necessary to help the students to learn about a set of steps involving small user interface elements, or to solve programming issues with their code. In the physical classroom professors are able to sit right next to a student with trouble and explore the code together, an important dynamic which this feature set from Zoom provided a powerful alternative for, during ERT. Another useful feature of Zoom for remote live

classes is the ability to pause and resume the screen sharing with the click of a button.

Another greatly useful feature that Discord lacks is the recording of video calls. A number of strategies were used to overcome this limitation, including the combination of Discord with Blackboard Collaborate Ultra, Zoom or other applications used to stream video, like OBS (Open Broadcaster Software<sup>6</sup>). Thus, it's not advisable to use Discord exclusively in ERT classrooms. The possibility does exist, as seen in Section III, and Discord was used exclusively in some modules. The most important takeaway in this section is that Discord can be used in combination with any of the other communication and streaming platforms, and that there are benefits in doing so, specially for the students, considering the social aspect of the classes.

In these scenarios, where Discord is being used in combination with other platforms, all the module organization and benefits that were presented in Section III are maintained. The main differences are:

- The main lecture happens in the chosen streaming platform (e.g. Zoom).
- In the live streaming text channels, the link to the streaming service used for the main class is posted, e.g. a Zoom or Collaborate invitation link.
- There are moments during the class when students are allowed to leave the class video stream, to work in their groups within Discord, eventually being called back to the main stream using the "@" mention tags. This strategy, although presenting the issue of switching between and

<sup>6</sup>Freely available at: <https://obsproject.com/>

managing two different tools, is still interesting for two reasons: (1) the students already have their prearranged Discord groups where they can share links and other information in the private text channels; (2) The content shared in their teamwork channels is not lost, as it currently happens with some of the other platforms after the stream or call is finished.

## V. STUDENTS PERCEPTIONS

In order to evaluate the students perception of our classes using Discord, a six question questionnaire was elaborated and then sent to the students. The questionnaire is presented in Figure 6. One hundred and thirty nine (139) responses were collected, and in the rest of this section we will analyse the students answers to each question.

The analysis of the answers to Question #1, which asked the students to rank with a score between 0 and 5 (0 being the worst and 5 the best) their experience using Discord during ERT classes, shows that 110 students gave their experience a score of 5, and 23 a score of 4. Four students scored their experience as 3, and two students gave it a score of 1.

Regarding whether or not the students used Discord before ERT (Question #2), 118 students ( 85%) reported that they had used Discord before, while 21 ( 15%) had not used it before ERT. Figure 7 presents the answer to Question #3, about the platforms used by the students during the ERT period.

About the students preferred platform (Question #4), the analysis of the results indicate that most participating students preferred using Discord instead of other alternatives. It should be noted that a few respondents mentioned more

than one platform, and their answers were not added to the results computed for this question. There were three responses citing Blackboard and Zoom, two responses with Blackboard and Discord, one response with Discord and Meeting, one response with Blackboard and Meeting, and one response for Blackboard, Discord, Meeting and Zoom. Discord was among the preferred platforms of 88.49% percent of the 139 students who responded the questionnaire.

Regarding Question #5, asking whether or not the students gather with their colleagues out of class hours to perform academic work, 125 students ( 90%) responded positively, and 14 ( 10%) students responded negatively. This is an interesting result supporting the presented theory that Discord can be used to promote social interaction between students.

Regarding Question #6, the negative experiences shared by the students are usually associated with connectivity issues, either from the students internet connection at home or when Discord servers were facing issues. However, it must also be taken into consideration two answers reporting a bad experience with Discord, in Question #1. For these two students, one reported having technical issues regarding audio and video devices. There was no additional report if the affected hardware worked properly in other platforms. The second student reported a preference for having all the different modules information, for the current academic term, in a single platform, which in the case of PUCPR it's currently Blackboard Collaborate. One student also mentioned missing the "raise hand" function available in other platforms. All other students reported that they were happy with Discord being used in the classroom. In Figure 8 a short excerpt of some of the answers given by students is presented.

The positive assessment of the excerpts presented in Figure 8, as well as the vast majority of answers obtained from the students, corroborate the benefits of using Discord as a physical classroom metaphor for synchronous online classes.

## VI. CONCLUSIONS

In this paper we have shared the paper authors' experience when using Discord during the ERT period. Our choice for using Discord, either as an exclusive solution or in conjunction with other platforms, such as Zoom, is based on the tools' specific features capable to better emulate the strong social interaction aspect present during in-person classes, sudden removed from teachers and professors due to the covid-19 pandemic and its associated social distancing measures.

The traditional educational environment of a university exists not only within the classroom. The learning places in a university environment are multiple, varied and the interaction opportunities emerge from a series of encounters facilitated by this kind of sociocultural space. The knowledge promoted by this deep level of interaction transforms people and society, and if that wasn't the case, the university would become just a large dead mass of ideas, because:

*"knowledge is a condensed human activity and its socialization brings to life the dynamic that exists in it, in a latent state. This activity, in the process of its*

- 1) In a rank from 0 to 5, how was your experience using Discord for the remote emergency classes?
- 2) Did you use Discord before the remote emergency classes?
- 3) Mark which platforms you used during the emergency remote classes period:
  - Blackboard Collaborate
  - Discord
  - Google Meeting
  - Microsoft Teams
  - Zoom
  - Other (Specify which)
- 4) Out of the tools you tagged in the previous question, what was your favourite, and why?
- 5) Did you gather with your colleagues during out of class hours to do academic work?
- 6) Please tell us about a positive and/or negative experience using Discord during the classes, which you would like to share.

Fig. 6: Questionnaire sent to the students to gauge their perceptions about Discord

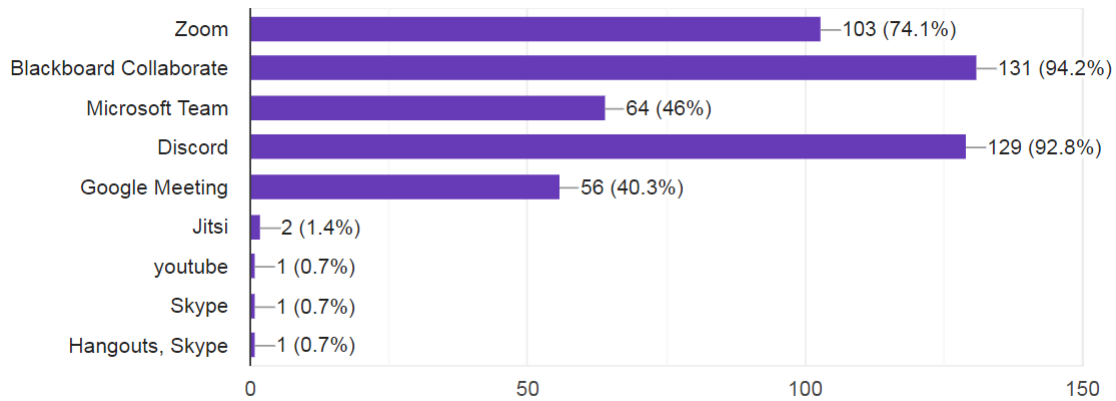


Fig. 7: Platforms the students used during the ERT period.

- "Creating channels for teams is easy and allows all students to see how other teams are doing."
- "I really like doing group work, despite the similarity with other platforms, in my opinion the Discord is faster, just a click to enter and leave the voice channel, it is possible to send gifs and emojis in the chat, making the experience more fun It is not so massive, even if it is a more academic work. It brings the student much closer to his reality of memes, games and the like, things that are usually not connected with the classes."
- "It would not necessarily about the experience, but I believe that the advantage of being able to talk during classes without disturbing the explanation and still being able to pay attention to the content is a very good thing."
- "Ease of communication with teachers."
- "Another point that I really liked is to share several screens simultaneously and you are doing your project and you can see what the colleague is doing, this is very cool."
- "I love the informal moments like before and after class, where you can play shared music and chat with teachers and other students."
- "It often happens that a specific colleague has very low or very loud audio during a class, and thanks to the Discord I can only set the volume of that particular person's audio, without having to increase or decrease the volume at the same time."
- "Moving between chats, both text and audio, was very convenient to be able to do an activity that if we were in person would be like a fair, each group on its stand."
- "A lot of work can be posted on the team channel, and the rest of the room can see (if you want) to give feedback."

Fig. 8: An excerpt of some of the students responses to Question #6.

*appropriation by the knowledge seekers, produce the movement of the intellect, feelings and corporeality, in other words, it sets the human being in motion."* [15]

So it's possible to conclude that this transformative knowledge which occurs in different places within a university, is difficult to replicate in remote online environments, since much of this organic socialization process is lost when the student and teachers are in a self-contained virtual environment with no alternative paths to be reached from outside the classroom. "It was like this, socially learning, that over time women and men realized that it was possible - and later, that it was necessary - to work on ways, methods of teaching" [16].

Furthermore, the professors also shared with the students their positive perceptions about remote classes using Discord, supporting the hypothesis presented herein of the benefits of

using the Discord platform for ERT classes. It should be noted that, even after the global health emergency has ended, Discord might still be used for technical teamwork and interaction during out of class hours, as it was already happening in many cases before the pandemic. Also, through the use of Discord teachers can better track if students are working on their team projects or procrastinating, as there is a time stamp feature on all posts done in text channels. Analysing the students behaviour on the channels may also be of assistance to perform individual evaluations within group projects, since if by any reason one student is not being active or involved with his group, he or she will have only a few posts, in comparison to other students.

As future work, we intend to investigate the usage and development of Discord bots to further assist teachers and students.



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