RBAAD Revista Brasileira de Aprendizagem Aberta e a Distância

revista científica oficial ABED

Artigo Original

Distance Higher Education: the Integrating Project in time of emergency remote learning

O Ensino Superior a Distância: o Projeto Integrador em momento de ensino remoto emergencial

Educación superior a distancia: El Proyecto Integrador en tiempos de aprendizaje remoto de emergencia

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Abstract

The restrictions imposed by the social distancing resulting from the pandemic of the new coronavirus required adaptations of universities to a new work reality that favored remote activities. In the case of Distance Education (EaD, by the acronym in Portuguese), although most activities occur virtually, some adaptations were necessary due to the pandemic conjuncture. This article describes and analyzes, with the intention of understanding the processes carried out during the development Integrator Project (IP), in the courses of the University X during the year 2020. The IP proposes a training based on activities carried out in person in the Poles and in the future scenario of professional performance of students, something that in this contingency had to be rethought. For this, an *ad hoc* questionnaire was applied to more than 200 advisors. From the analyses, it can be concluded that the pandemic conjuncture eliminated the face-to-face activities, determining that the formation in the IP occurred totally in the distance modality. This transition redirected the mediation of distance learning so that it welcomed, through strategies of orientation and mobilization of technological

resources, the moments of bond building and socialization of learning, previously favored by face-to-face interaction. This transition redirected the mediation of distance learning so that it welcomed, through strategies of orientation and mobilization of technological resources, the moments of bond building and socialization of learning, previously favored by face-to-face interaction. As recommendations, we can mention the monitoring of active mediation and prepared to deal with specific situations to promote learning distinct from those foreseen. It is now understood that IP, a compulsory and fundamental curriculum axis for professional learning, should also promote reflection on how to develop collaborative learning, leading to empathy as a key point.

Keywords: Distance Higher Education; Learning Process; Integrator Project; Pandemic Covid-19.

Resumo

As restrições impostas pelo distanciamento social decorrente da pandemia do novo coronavírus exigiram adaptações das universidades a uma nova realidade de trabalho que privilegiou atividades remotas. No caso da Educação a Distância (EaD), apesar da maioria das atividades ocorrerem virtualmente, algumas adequações se mostraram necessárias, em virtude da conjuntura pandêmica. Este artigo descreve e analisa, para fins de compreensão, os processos realizados ao longo do desenvolvimento do Projeto Integrador (PI), nos cursos da Universidade X, durante o ano de 2020. O PI propõe uma formação a partir de atividades realizadas presencialmente nos polos e no futuro cenário de atuação profissional dos estudantes, algo que, nesta contingência, teve que ser repensado. Para isso, foi aplicado um questionário *ad hoc* a mais de 200 orientadores. A partir das análises, pode-se concluir que a conjuntura pandêmica eliminou as atividades presenciais, determinando que a formação no PI ocorresse totalmente na modalidade a distância. Essa transição redirecionou a mediação da aprendizagem a distância de modo que ela acolhesse, por meio de estratégias de orientação e de mobilização de recursos tecnológicos, os momentos de construção de vínculos e de socialização de aprendizagens, antes favorecidos pela interação presencial. Como recomendações, é possível mencionar

o acompanhamento da mediação ativa e preparada para lidar com situações específicas e promover aprendizagens distintas das previstas. Entende-se, agora, que o PI, eixo curricular obrigatório e fundamental para as aprendizagens profissionais, deve, também, promover a reflexão sobre como desenvolver aprendizagens em colaboração, considerando a empatia ponto-chave.

Palavras-chave: Ensino Superior a Distância; Processo de Aprendizagem; Projeto Integrador; Pandemia Covid-19.

Resumen

Las restricciones impuestas por el distanciamiento social en consecuencia de la pandemia del nuevo coronavirus exigieron adaptaciones de las universidades a una nueva realidad de trabajo que privilegió actividades remotas. En el caso de la Educación a Distancia (EaD, en sus siglas en portugués), a pesar de que la mayoría de las actividades ocurrieron virtualmente, algunas adaptaciones se mostraron necesarias en consecuencia de la coyuntura pandémica. El artículo describe y analiza, con la intención de comprender los procesos realizados a lo largo de lo desarrollado en el Proyecto Integrador (PI), en los cursos de la Universidad X a lo largo del año de 2020. El PI propone la formación a partir de actividades desarrolladas presencialmente en los Polos y en el futuro escenario de actuación profesional de los estudiantes, algo que en esta contingencia tuvo que ser replanteado. Para tal, fue aplicado una encuesta *ad hoc* a más de 200 orientadores del PI. A partir de los análisis, se puede concluir que la coyuntura pandémica eliminó las actividades presenciales, determinando que la formación en el PI ocurriera totalmente en la modalidad a distancia. Esta transición redireccionó la mediación de aprendizajes a distancia de modo que acogiera, por medio de estrategias de orientación y de movilización de aprendizajes, antes favorecido por la interacción presencial. Como recomendación, se puede mencionar el acompañamiento de la mediación activa y preparada para lidiar con situaciones específicas para promover aprendizajes distintos de las previstas. Se entiende que el Proyecto Integrador, como eje curricular obligatorio y fundamental para los aprendizajes profesionales, debe también promover la reflexión sobre cómo desarrollar

aprendizajes en colaboración teniendo en cuenta la empatía como punto clave.

Palabras-clave: Enseñanza Superior a Distancia; Proceso de Aprendizaje; Proyecto Integrador; Pandemia Covid-19.

1. Introduction

Created in 2012, Universidade X is the fourth university in the state of São Paulo. Currently, there are nine undergraduate courses on offer, totaling around 55 thousand vacancies. For on-site support for these courses, 330 centers are distributed in 290 municipalities, which allows the university to reach more than 44% of the territory of São Paulo.

The university's pedagogical model consists of five fundamental axes, which connect and complement each other: expansion of access to higher education; focus on the student; interaction; digital inclusion; training for professional practice (GARBIN; OLIVEIRA, 2019). The way in which this pedagogical model is materialized, somehow, gains an interface in a Virtual Learning Environment (VLE), a way in which X provides its students with training paths aimed at professionalization.

In addition to the regular subjects, the internships, course completion works and a curricular axis called the Integrator Project (IP) are part of the courses' curriculum. The latter, a privileged space for training, and which is the focus of discussion and analysis of this work, is a curricular component that incorporates active learning methodologies, such as Problem-Based and Project-Based Learning (ABPP) (ARAÚJO; SASTRE, 2009) and Design Thinking (PLATTNER; MEINEL; LEIFER, 2011; BROWN, 2010).

The pedagogical action in IP is based on the principle of the inseparability of the relationship between theory and practice. In this direction, in methodological terms, the projects are planned by the students to be executed in teams, a fundamental condition for developing professional competences, with a focus on problem solving and formation of knowledge construction networks.

In the curricular configuration of the university, the IPs are developed from the second academic year of the courses and differently from other subjects, which do not have a bimonthly duration, but a semester. Enrolled in IP, students develop a project whose theme is defined by the university based on the pedagogical project and related to the professional training of the course.

All teams of IP students have an advisor specifically chosen to monitor the pedagogical actions of the collaborative work and who hold biweekly meetings with the teams. Throughout the semester, as an evaluation process, students deliver: action plan, partial report, final report and project presentation video, as well as perform a collaborative evaluation. Each of these activities is evaluated by the advisor, who provides constructive feedback to the teams.

When developing the IP, students come into contact, in person, with professionals in the area of their course and, in this way, experience aspects of their future professional practice. Based on this methodological situation, the teams analyze the professional context in which they operate as student-researchers, to identify problem situations that constitute the observed practices and propose solutions to them that must, in turn, be implemented and tested in a cycle of carrying out the project.

To support collaborative work by IP teams, especially in the face-to--face mode, the poles are strategic spaces for teams to hold meetings and research, in addition to offering technological infrastructure that helps communication and interaction . It is also at the hubs that teams have the opportunity to meet face-to-face with their IP advisors.

The working dynamics of the IP described above were modified from March 2020, by the emergency situation of Covid-19, mainly due to the restrictions imposed by social isolation measures. As a result, the poles were closed and face-to-face meetings did not take place, being replaced by digital tools. Thus, in order to mitigate these effects on student learning, the university implemented pedagogical and management actions aimed at ensuring the continuity of carrying out the IPs.

Given the above, this work analyzes institutional solutions for carrying out interdisciplinary projects, based on active learning methodologies, in the context of a pandemic, as well as mapping the difficulties of students and supervisors in the development process.

2. The context of the integrating project: from remote education to distance education

EaD is a teaching modality provided for in the Law of Guidelines and Bases of Brazilian Education (Law 9394/1996), so its offer occurs according to the planning of a calendar and its curriculum is organized in its own pedagogical architecture (BEHAR, 2013). It is usually offered with the support of a Virtual Learning Environment (AVA) and generated by a structured team that allows the development of teaching processes inherent to the offer of courses in this format.

Paragraph 1 of Decree n. 9,057/2017 presents a definition of distance education:

> (...) the educational modality in which didactic-pedagogical mediation in teaching and learning processes occurs with the use of information and communication means and technologies, with qualified personnel, with access policies, with compatible monitoring and evaluation, among others, and develop activities by students and education professionals who are in different places and times. (BRAZIL, 2017, *online*).

As for Remote Teaching (ERE), in the Ministry of Education Ordinance (MEC) No. 345, of March 19, 2020, the authorization is presented, in exceptional character, so that, in the educational sphere, information means and technologies are used and communication that replace classroom classes, due to the pandemic (BRASIL, 2020). Arruda (2020, p. 265), about the ERE, states:

> digital online remote education differs from distance education by the emergency nature that proposes uses and

> appropriations of technologies in specific circumstances of care where in the past there was regular education.

In addition, it adds:

> Serving, through digital technologies, students affected by the closing of schools is not the same thing as implementing Distance Education, although technically and conceptually it refers to the mediation of teaching and learning through technologies. EaD involves prior planning, consideration of the profile of the student and teacher, medium and long-term development of teaching and learning strategies that take into account the synchronous and asynchronous dimensions of EaD, it involves the participation of different professionals for the development of products that have, in addition to pedagogical quality, aesthetic quality that is elaborated by professionals who support the teacher in editing various materials (ARRUDA, 2020, p. 265).

According to Behar (2013), EaD students develop twelve skills: time management, reflection, digital fluency, organization, autonomy, planning, communication, virtual presence, self-assessment, flexibility, self-motivation and teamwork. In addition to them, it is essential that the student has access to communication and interaction technologies to develop their learning.

In the X scenario, specifically the Integrator Project, students who met in person with their advisor at the poles started to meet remotely, through the web conferencing tools available at the institution, in addition to continuing with the support of other Digital Information Technologies and Communication (TDIC) that allowed collaboration between students. In addition to this methodological change, the IP groups of 5 (five) to 7 (seven) students also had to adapt the following planned steps carried out in schools to the remote: 1. Research what has already been developed on the guiding theme provided by the university; 2. Choose a location or community for the development of the project, which is related to the guiding theme. 3. Search with the

participating community, the viable possibilities for the development of the project, defining with it a problem to be solved; 4. Propose a solution to the problem; 5. Deliver all activities planned for learning assessment.

If, before, students carried out field visits in person to collect data and interact with the community that participates in the project, as shown in the Design Thinking approach (BROWN, 2010; PLATTNER; MEINEL; LEIFER, 2011), now , there was the adjustment for the remote.

Thus, it is observed that the year 2020 was marked by uncertainties, complexity and the lack, at first, of alternatives, which generated anguish among students, advisors and teachers. This situation resulted in the modification of the learning model adopted until then, which was replaced by a new model whose support in digital communication and interaction technologies allowed the insertion of alternative forms of teaching and learning. Adapting to the new situation with quick and palliative measures was the solution for many of the educational institutions, including X.

It is understood that the student's education itself must be rethought, taking into account cognitive and emotional resources to meet the situations of a complex world, in constant change and, as one could experience, unpredictable. Autonomy, responsibility and the ability to learn are fundamental in education (HARGREAVES, 2003; PERRENOUD, 2000), even more so in this unprecedented moment, in everyone's life.

Therefore, it is necessary to understand how the IP methodology can help the student in the development and construction of new learning.

2.1. The IP and active learning methodologies

At the present time, when societies are undergoing transformations, there is, in the educational sphere, a great discussion about the development of basic competences, especially in universities, in relation to the formation of work skills. In this sense, the questions about how to build competences and how to generate the capacity to continue learning are constant.

In Brazil, since BNCC, the idea of pedagogical work aimed at the student, for their learning potential and for the actions they develop, are fundamental elements in many of the universities in Brazil. X is no exception.

Among the various active methodologies, the Integrator Project is guided by Problem-Based and Project-Based Learning (BARROWS, 1996; ARAÚJO; SASTRE, 2009) and by human-centered design (*Human Centered Design* - HCD) (BROWN, 2010; PLATTNER; MEINEL; LEIFER., 2011).

In problem- and project-based learning, the student is invited to carry out collaborative actions with other students which, based on curiosities, doubts and problematizations, give rise to processes that will be researched in order to seek possible solutions (TREIN; SCHLEMMER, 2009).

As mentioned by Fagundes, Sato and Maçada (1999, p. 16):

> A project to learn will be generated by conflicts, by disturbances in this system of meanings, which constitute the learner's particular knowledge. How can we access these systems? The student himself is not aware of it! Therefore, the choice of variables that will be tested in the search for a solution to any problem needs to be supported by a survey of questions made by the student himself.

The focus on the subject's learning, which arises from the curiosities, doubts, individual and collective problematizations, gives rise to themes that will be investigated by students in order to seek elements that help to respond to the problem that generated it.

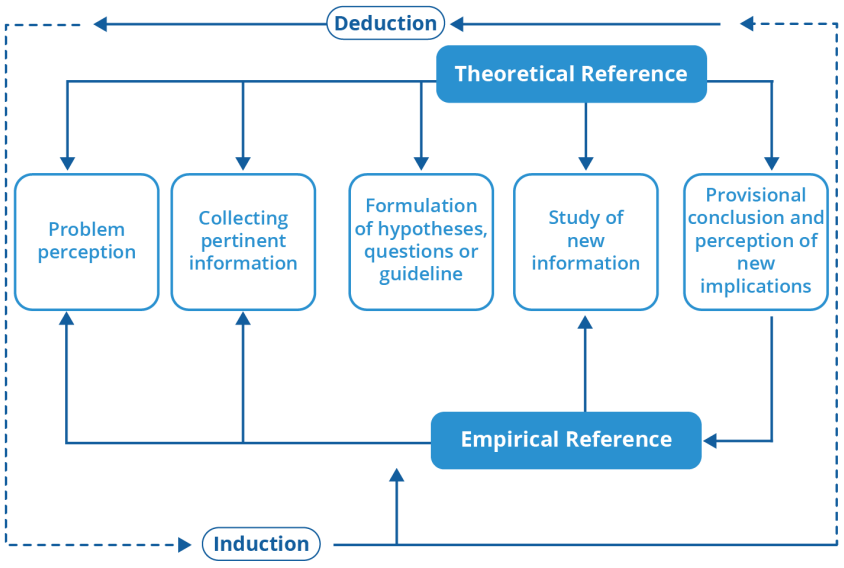
The principles of HCD (BROWN, 2010; PLATTNER; MEINEL; LEIFER, 2011) integrate multidisciplinary and interactive collaboration to the creation of innovative solutions, with an emphasis on the end user. One of the foundations of this model is the construction of prototypes to solve the problem, which are continuously tested during its development with users, until a model capable of being implemented is reached.

Thus, students define an institution and, over the course of a semester, immerse themselves in a certain problem related to the course they are enrolled in and the educational context. At the end, they apply the result under the supervision of a professor in the area.

This methodology is based on three phases for the development of these prototypes or solutions: listening, creating and implementing (BROWN, 2010; PLATTNER; MEINEL; LEIFER, 2011), which are carried out continuously, until the final solution.

In the "listen" step, dialogue between the project team and the educational community for which the solution is being developed is required. Thus, it is from the data collected in the initial phase of "listening" that the creation of solutions takes place. During the "creation", it is foreseen the use of tools for collective work and that help in the search for solutions that really impact the solution. The last step refers to the "implementation" of the solution, whose purpose is to verify whether the needs identified during the other processes with the community were met. During the development of the project and at the end of it, it is suggested that students try to answer the following questions: Was the final solution carried out based on the needs of the community? It's viable?

Image 1 - *Outline of problem solving process*



Source: OTT (1989, p. 69).

As you can see, IP na X is supported by active methodologies, in which teams develop their professionality based on negotiations, drawing a relationship between theory and practice to propose solutions to the problems of their future professional reality.

3. Method

With the intention of producing a mapping of the context presented, this work produces a review of the context, aiming to present institutional solutions for the realization of integrative projects, based on active learning methodologies in the context of a pandemic, as well as mapping the difficulties of students and advisors in the development process, from the advisor's perception. Therefore, this research carried out a study of a qualitative nature, emphasizing the search for non-quantifiable data, but in-depth and understanding their interconnections (CHIZZOTTI, 2010).

The focus of the research is analytical (COLÁS; BUENDÍA, 1998; FLICK, 2004), based on the principle that the world is experienced by subjects in their interactions with places and actions experienced in the social, economic and cultural spheres, in a given time. Thus, the world is socially constructed and interpreted by people. The contexts in which individuals carry out their personal and professional experiences are different and, consequently, their representations (LEFEBVRE, 1961 apud PENIN, 2011) are also unique when faced with the same object. From the point of view of Penin (2011, p. 17-18), the daily life of educational institutions can only be understood if their participants become active subjects aware of their situation as agents of history; if, finally, they want to know the daily life and the daily experiences. Therefore, it is important to note that the field study is considered from the aspect of manifest representations to the subjects' speeches.

A cross-sectional study was chosen, in which data was collected at a specific moment in time (LATORRE; ARNAL, 2005), of the phenomenological type, as it emphasizes the particular and the individual in the study of the context (COHEN; MANION, 1990; LATORRE; ARNAL, 2005). Thus, a study was developed based on theoretical

inquiry, through a varied source of consultation and research, as well as empirical data collected through an ad hoc questionnaire available to Integrator Project advisors during the month of November 2020, referring, therefore, to the second semester of the pandemic.

The questionnaire went through a peer validation process before being applied, thus ensuring its reliability. In all, there were 209 respondents, among the approximately 330 advisors in total. This questionnaire was applied using the Google Forms platform and contained 16 questions, among which 8 (eight) were of the discursive type and 8 (eight) were objective. For objective questions, a scale of 4 (four) points was adopted, considering 1 (one) for the lowest qualification and 4 (four) for the highest. The objective of the questionnaire was to have a vision from the teaching of the PI to the orientation given at a special moment, to understand how improvements could be made for the coming semesters.

Among the 208 respondents, only 17 acted as advisors in 2019, the period before the pandemic, and the rest, 191 respondents, started their work in 2020, when we were already witnessing the pandemic. However, all respondents had experience working as a facilitator at the university. In all, 16 Integrator Project courses were offered in the second half of 2020, in the Production Engineering, Computer Engineering and Licentiate Degrees in Mathematics, Pedagogy and Letters courses.

The analysis of the results was carried out from two perspectives: quantitative, from the descriptive statistics of the objective questions, and qualitative, as it allowed a glimpse of the representation of the advisors regarding the monitoring of student learning. The analysis of these data was performed through categorization and Content Analysis, as guided by Bardin (2011), which implied the organization by specific categories:

Chart 1- *Analysis categories of essay questions*

Categories	Description
Changing the student's routine	It refers to the different dynamics in the student's daily life to carry out activities in IP.
The on-site research	It refers to the group's difficulties in carrying out the research in educational institutions and companies for data collection.
Access to technologies	It refers to the student's access to information technologies for the actual realization and completion of the IP, taking into account the collaborative work.
Role of PI advisor	It refers to the indications given by the PI supervisors for its better development.

Source: Prepared by the authors.

Thus, we analyzed the research results, focusing on the perception built by the facilitators during the analyzed period.

4. Results and discussion

Initially, respondents were asked to assess the impact of the pandemic on their routine as an IP advisor with students: Meetings with student groups; Communication with students; Assessment of student work; Guidance on the stages of development of the IP, with 1 being of little impact and 4 of great impact.

Table 1- *Total responses on the impact of the pandemic on the routine of IP advisors with students*

Answer Options	Meetings with student groups	Communication with students	Assessment of student work	Guidance on IP development stages
1	84	80	92	70
2	37	44	31	37
3	40	43	39	52
4	47	41	46	49

Source: Prepared by the authors.

When analyzing the data shown in Table 1, the advisors show that there are no major changes in the PI's routines, especially in the communication with students, which had been taking place virtually since the beginning of the pandemic. However, although there is still a balance between the respondents' opinions, there is a greater impact in the meetings with groups of students and in guiding the stages of development of the IP.

At this point, it is important to recall that X is a university that offers EaD courses and, although it is important to emphasize that this model is different from ERE, those who work in EaD modality were already organized for remote and virtual work.

Also, advisors are asked about the students' understanding of the IP objectives for the professional training of students. This question was asked to obtain the advisor's representation regarding the understanding of the importance of the IP in their insertion in the labor market. According to the data shown in the table below, it is noted that part of the advisors (78 respondents) indicate the understanding, by the students, of the IP for their future professional life. However, 102 respondents, the majority, indicate answer option 3, that is, they do not believe that students fully understand the objectives of the PI in their education.

This data can lead to understand that the students, even being guided about the objectives of this curricular axis, little manage to understand it in its entirety. The foregoing could be explained by the possible few discussions in the groups with the advisors regarding the reason for the integrative project, pointing these discussions to the development of the IP, something pragmatic.

Table 2 - *Students' understanding of the objectives of the Integrator Project for their professional training*

Answer Options	Total answers
1	0
2	28
3	102
4	78

Source: Prepared by the authors.

Regarding the practical aspects of the development of the IP, again, there is a tendency to assess the development of the pedagogical routine of the IP, at level 3.

In the aspects listed in Table 3, we highlight: Incorporation of the contents of the disciplines into the project developed by the students, a crucial point for the development of an interdisciplinary work and Community participation in the development of the solution, an important point in the development of the methodology adopted by X. About the first highlighted aspect, it is noted that the advisors, mostly, point to items 1, 2 and 3, totaling 154 respondents. Only 54 advisors indicate item 4, that is, in a positive way. With regard to the second aspect, 175 respondents chose items 1, 2 and 3, of which 99 selected items 1 and 2. current views by students with the Project carried out.

It is worth mentioning that active learning methodologies presuppose the union between theory and practice, giving rise to significant and lasting knowledge. However, there is a certain difficulty at this point, although there are clear instructions throughout the semesters and advisors are instructed to promote these relationships. Another point we could think about, most likely referring to the time of the pandemic, is the participation of the community in the development of the IP, since, in the transition to remote learning, many institutions, both educational and business, closed their doors to students, making It is difficult to carry out the Integrator Project and draw the relationship between theory and practice with the support of specialized professionals. In

this sense, the current undergraduate student has little insight into their future professional life, as they are not in constant conversation with the research place, as are the professionals in the field. This restriction had an impact on the way the student observes the object of study applied in practice.

Table 3 - *Assessment by the PI advisor on the development of the steps performed by the groups he supervised, in relation to specific items*

Answer Options	Total of answers - 1	Total of answers - 2	Total of answers - 3	Total of answers - 4
Group collaboration	2	42	119	45
Appropriation of the generating theme available in the discipline	5	41	100	62
Identification of the professional context to carry out the project	6	39	86	77
Problem identification from the generating theme	11	51	100	46
Incorporation of subject content into the project developed by students	14	43	97	54

Source: Prepared by the authors.

In relation to Table 4, it is worth mentioning that the development of the final solution and its implementation were made difficult, as a large percentage of facilitators were identified who marked the number 3 as an answer. Collaboration with the group also draws attention, as it is an element of major changes in family, work and social dynamics. As can be seen, restrictions and changes in teaching can bring other regularities in learning dynamics, causing noise in learning.

Table 4 - *Evaluation of the evaluation process in relation to specific items*

Answer Options	Total of answers - 1	Total of answers - 2	Total of answers - 3	Total of answers - 4
Preparation of the action plan	7	34	89	78
Community participation in solution development	30	69	76	33
Initial solution development	4	45	105	54
Preparation of the partial report	2	39	105	62
Development of the final solution	3	31	111	63
Solution implementation	24	56	89	39
Preparation of the final report	1	22	103	82
Preparation of the video	0	31	105	72
Teaching material available in the AVA	12	46	72	78

Source: Prepared by the authors.

As for the material available in the Virtual Learning Environment (AVA), as can be seen in Table 4, it is understood that the guidance given to students during a pandemic period is sufficient, however different advisors claim that the students did not understand the purpose of the IP and they were not able to apply the final solution, which causes incoherence in the data reading.

Up to this point, it is possible to observe that the major challenges of the semester, from the representations of the subjects, have to do with the student to understand the objectives of the IP and the implementation of the project solution in the institution, in addition to understanding how insufficient the guidelines offered are in the Virtual Learning Environment.

In the same questionnaire, the facilitators were also invited to carry out a self-assessment of the work developed during the semester. In this sense, they were asked about the orientations given to students,

especially in the mediation of conflicts, in communication with students, in the use of digital tools, among others.

Table 5 - *Evaluate the mediation actions performed by you*

Answer Options	1	2	3	4
Conflict Mediation	0	14	75	119
Communication with students	0	6	57	145
Students' understanding of the IP theme	0	12	92	104
Use of AVA	3	18	54	133
Use of communication tools to hold meetings	1	7	34	166
Maintenance of the routine of meetings with students	0	4	44	160
Time management and organization	3	15	73	117
Group follow-up	0	0	32	176

Source: Prepared by the authors.

As can be seen in the table above, time management, mediation of the incorporation of the contents of the disciplines into the IP and the use of communication tools for holding the meetings can be evidenced as very positive. These are considered more delicate points. In general, facilitators see their work as positive, using all means so that students can complete their process in the integrative project.

Therefore, from the exposed data, it can be observed, from the perspective of the IP advisor, a work made difficult by the pandemic for students, on the one hand, and a work quite consistent with the needs of remote learning carried out by the IP advisors , for another. However, from the perspective of this same subject, the students were not successful in achieving the goals for the IP, showing that, despite their efforts, they did not reach them in their entirety.

With regard to quantitative data, we can assume some other logic. In the student's routine category, it can be seen, among the participants, the indication of the students' difficulties in staying at home

and reconciling PI activities with other activities related to the course, with family and professional tasks, that is, they had to share times in the same period with the concomitant activities that needed to be attended simultaneously.

To that extent, many students reported difficulties because they had to stay at home and reconcile activities in projects and courses with family and professional functions, that is, they had to split up to simultaneously attend to competing activities.

> Most students had their routines changed by the pandemic, many mother students could not participate in all the lives, as they had to follow their children's online classes and comprehensive care. In general, all students were overloaded and this has a direct impact on the monitoring and evaluation of students (Project Integrator Advisor for Degree, 2020).

In addition to aspects related to routine reorganization, through the advisors' reports, many students were affected by the experience of contamination by Covid-19, whether they were themselves or family members who became ill or who lost their lives. This situation impacted the way in which students were able to dedicate themselves to the IPs and to the course itself, implying, in some cases, giving up:

> I had several cases of students who lost family members throughout the semester, or of this person or himself becoming ill. That's why it's important to reassess the scenarios, the pandemic moved people a lot; and depending on their socioeconomic conditions, this varies a lot (Project Integrator for Pedagogy, 2020).

There are reports that point out that other students lost their jobs, were professionally required to act in the front line of the fight against the pandemic, which also contributed to their decision to interrupt their training at the university.

It is possible to notice reports from advisors who describe students

who are less patient or empathetic. What seems to justify this condition, according to the supervisors' perspective, is the excessive worry or mental exhaustion caused by the pandemic situation, especially by social isolation and other restrictions that were necessary.

However, the pandemic situation, according to the reports, also produced "advantageous" effects, from the perspective of some of the interviewees. Among the advantages mentioned, we highlight: for those who worked or would work in person at the centers, there would be no need for physical displacement and, with this, greater flexibility in the organization of time is created, in addition to the financial impact. This can be seen in the speech of the PI advisor for Pedagogy: "It was quite convenient, although more laborious. I didn't have to travel the 40 km one way and another back to Ribeirão Bonito, every night. I live in São Carlos" (Project Integrator for Pedagogy, 2020).

Furthermore, even considering the answers provided by those who report a first performance in the IP, there are those who deny the impacts of the pandemic both on the practice of guiding the projects and on their development and/or evaluation process, implying that it does not there has been no change since X courses are virtual.

Another impact of the pandemic on the development of the IP, according to the advisors' report, was in relation to the on-site implementation of projects, which provided that students could investigate and experience, in person, aspects of their future professional performance, interviewing professionals and getting to know the routines proper to the profession.

> A big impact I felt was from the students regarding the school or contact with teachers and students. This they felt a lot, as they were used to attending schools and "testing" the integrative project in (physical) classrooms (Project Integrator Advisor for Pedagogy, 2020).

The above representation can be considered the minority, as the quantitative data show that the implementation could be carried out in some way. Likewise, the later fragment reports the impact of the

pandemic on visits to schools and companies, plus the flexibility of students and advisors in seeking plausible solutions:

> The pandemic impacted the IP in relation to field visits because the project's objective is to study a problem within a classroom, company, society and even the development of the IP among students, as they cannot meet, but I also believe that this challenge made us search for new solutions. In relation to mediation, I believe this collaborated, as the online meetings made it easier for the students to travel to the center (Project Integrator for Engineering Advisor, 2020).

This is not the same representation as in the following supervisor's report, who considers the consequences of the pandemic demotivating for the realization of the IP:

> The pandemic impacted mainly in a negative way, according to the reports of the students, the practical issue was greatly harmed. In the field of engineering, students reported the difficulty of opening companies and, in the field of degrees and pedagogies, the lack of contact with schools, teachers and students was reported to me by a student (PI I) as a demotivator. In the written part of the report, even though there is an effort on my part to guide and the students to prepare, the methodology was compromised and the results part fell short in terms of quality (Integrator Project Advisor for Engineering, 2020).

As noted, the advisor expresses his effort to maintain the quality of writing in the Integrator Project, however, he cannot possibly do so, due to the same arguments shown above.

The role of IP advisors can be considered essential in its development and decision-making, as one of the advisors reports:

> As much as students have a vast amount of information in the VLE, many of them still depend on us to show the way, explain some concepts, guide their decisions, etc (Project Integrator Pedagogy Advisor, 2020).

In this sense, some strategies were guided from the IP coordination, especially in relation to the use of technologies, as another advisor mentions:

> At the beginning of hiring (In-person mediator), I imagined that all my contact with students would be in person. On the one hand, this interaction is important and helps a lot, especially in mediating conflicts, but the fact of working with online tools provides students with more flexibility to participate, since a meeting can be rescheduled without the work of moving (Project Advisor Pedagogy Integrator, 2020).

However, some supervisors mentioned difficulties in accessing certain technological tools for students, as many of them used the computers at the Hubs. From this perspective, the option for the use of mobile apps is seen as a solution by the majority, according to the reports, although not always considered by them to be the most effective in achieving the projects.

> They complained that, with the centers closed, they could not use the structure of the University to develop their projects, hold meetings; especially students with few financial resources and with electronic equipment incompatible with the high demand with which they were being requested throughout the pandemic months (Project Integrator for Pedagogy, 2020).

However, there were also cases of supervisors who saw improvements in the process, due to the incorporation of digital technologies.

> On the other hand, students had to look for solutions based on the use of technologies and this had a very

> positive impact on the results of some of the work developed. I believe that in the end, this semester's integrative project brought some fundamentals and concepts that X has in its structure with regard to remote learning (Integrator Project Advisor for Pedagogy, 2020).

From the foregoing, despite the difficulties, especially with being far away, students make flexible paths to complete the IP in order to reach the end of the semester, even though it is not the way they had thought at the beginning.

In this sense, advisors have a fundamental role, as they provide the group with specific instructions on the path to be followed throughout the semester. Thus, this category conforms to the changes developed in the guidelines and how they were applied and felt by students. It is worth mentioning the advisor's report:

> I was a mediator in 2017. The face-to-face service really flows better. But I believe that when we organize ourselves and worry about details to pass information to students through meetings, it works. It is very important that we mediators are organized. I organize a script before every fortnight, so as not to forget the main information, I ask the students if they really know how to develop each item of the work, I share a screen to show inside the AVA where the documents they need are, in order to finish having empathy to understand the situation of students at this difficult time and guide in a way that supports and encourages the student to continue. So I believe that a good organization and attention to detail, the work of the online mediator is right (Project Integrator Advisor for Engineering, 2020).

The advisor mentions an essential element: empathy in the face of students' difficulties. This implies organizing the meetings and predicting what they are going to ask, as well as understanding the difficulties in a pandemic period. Some other strategies were also used: class preparation with the main explanations of the period, such as objectives,

evaluation criteria and most common errors; general meeting on ABNT standards; basic writing guidelines; flexibility in the evaluation of the solution by public school teachers; Google Forms etc. As can be seen, constant negotiations were carried out with the groups so that they could finish the semester using the IP method.

5. Final considerations

This work aimed to present institutional solutions for carrying out interdisciplinary projects, based on active learning methodologies, in the context of a pandemic, as well as to map the difficulties of students and supervisors in the development process. As a result, the students and the supervisor, from the representation of the IP advisor, were able to develop adaptive processes in the IP axis, taking into account that they were already working in a virtual way most of the time.

The face-to-face moments at the poles were replaced by virtual moments of orientation, a result of the social distance imposed by the new coronavirus. The difficulty of organizing the students themselves, who had to divide their time between work, family and studies, was something challenging for them. However, with the measures adopted by the supervisors, the project can be carried out in the best possible way. Because we work in EaD and we are already used to the virtual routine, the adaptations were minimal and little conflicting. Perhaps, the biggest conflicts were related to the students' routine and the use of active methodologies, in particular, the development of research in loco, since the institutions chosen by the students were in their remote moments.

It is worth mentioning that face-to-face meetings are fundamental for the configuration of work groups and for empathy between students and advisors, however, at this specific moment, there is a certain solidarity between the subjects, especially the advisor, who tried to organize the routines of way to meet the objectives.

Behar (2013) mentions that EaD students develop twelve skills: time management, reflection, digital fluency, organization, autonomy, planning, communication, virtual presence, self-assessment, flexibility,

self-motivation and teamwork. These competences, implicitly, are mentioned by most facilitators as transversal elements in the IP, also in moments of remote education. However, some facilitators mention the constant lack of some competences, which is justified by the objective questions, as the students, for this moment, experienced important social and work issues as well as family issues.

This conjunctural research is certainly just the beginning for new investigations in the field of EaD studies and others should be carried out, especially at the time of the post-pandemic, which will certainly come in the coming months. We hope to have contributed to the understanding of a specific and unique moment in history, not only for our higher education institution, but for all educational institutions that, to a greater or lesser degree, have suffered the consequences of emergency remote education.

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