ELECTRICAL ENGINEERING WEEK OF THE IFBA - CAMPUS PAULO AFONSO: EXPERIENCE REPORT ON THE EVENT AND ITS OUTCOMES

SEMANA DE ENGENHARIA ELÉTRICA DO IFBA CAMPUS PAULO AFONSO: RELATO DE EXPERIÊNCIA SOBRE O EVENTO E SEUS DESDOBRAMENTOS

SEMANA DE LA INGENIERÍA ELÉCTRICA EN EL CAMPUS PAULO AFONSO DEL IFBA: RELATO DE EXPERIENCIAS SOBRE EL EVENTO Y SUS DESARROLLOS

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ABSTRACT: This study aims to present an experience report of the activities carried out remotely during two editions of the Electrical Engineering Week at IFBA Campus Paulo Afonso, held in 2020 and 2021, due to the COVID-19 pandemic. The methodology involved conducting lectures, virtual technical visits, mini-courses, technical sessions, presentations of works, and reports of experiences from interns and alumni. The results highlighted the importance of organizing events that provide knowledge through the proposed activities and promote greater interest and commitment from students to the course, while also contributing to maintaining ties with the institution. Holding editions of the event remotely facilitated the participation of speakers from various regions of the country and abroad, adding value to the activities. For the students, this opportunity provided significant reflections for the construction of knowledge in multiple areas of Electrical Engineering.

KEYWORDS: Academic event. Electrical engineering. Pandemic. Remote activities.

RESUMO: *Esse estudo tem o objetivo de apresentar um relato de experiência das atividades desenvolvidas durante duas edições da Semana de Engenharia Elétrica do IFBA Campus Paulo Afonso, realizadas em 2020 e 2021, de forma remota, em virtude da pandemia da COVID-19. A metodologia utilizada foi a realização de palestras, visita técnica virtual, minicursos, sessão técnica, apresentações de trabalhos, relatos de experiências de estagiários e egressos. Os resultados obtidos destacaram a importância da realização de eventos que, além de oferecerem conhecimento por meio das atividades propostas, também promovem um maior interesse e comprometimento por parte dos discentes com o curso, ao mesmo tempo, em que contribuem para a manutenção dos vínculos com a instituição. A realização de edições do evento de forma remota facilitou a participação de palestrantes de diversas regiões do país e do exterior, agregando valor às atividades. Para os discentes, essa oportunidade proporcionou reflexões significativas para a construção do conhecimento em diversas áreas da Engenharia Elétrica.*

PALAVRAS-CHAVE: *Evento acadêmico. Engenharia Elétrica. Pandemia. Atividades remotas.*

RESUMEN: *Este estudio tiene como objetivo presentar un relato de experiencia sobre las actividades ejecutadas durante dos ediciones de la Semana de la Ingeniería Eléctrica en el Campus Paulo Afonso del IFBA, realizadas en 2020 y 2021, de forma remota, debido a la pandemia de COVID-19. La metodología utilizada fue conferencias magistrales, visitas técnicas virtuales, minicursos, sesiones técnicas, presentaciones de trabajos, informes de experiencias de pasantes y egresados. Como resultados obtenidos, se advirtió la importancia de la realización de eventos que, además de los conocimientos propuestos por las actividades, fomenten un mayor interés y compromiso de los estudiantes con el curso y preserven el mantenimiento de los vínculos con la institución. La realización de las ediciones del evento de forma remota facilitó la participación de ponentes de diferentes puntos del país y del extranjero, contribuyendo al perfeccionamiento de las actividades. Para los estudiantes se logró brindar espacios de reflexión para construir conocimientos sobre diversos temas del área de Ingeniería Eléctrica.*

PALABRAS CLAVE: *Evento académico. Ingeniería Eléctrica. Pandemia. Actividades remotas.*

Introduction

On March 11, 2020, the World Health Organization (WHO) declared a global pandemic of COVID-19 due to the community spread of the virus on all continents (PAHO/WHO). The social isolation imposed by the pandemic thereafter brought about profound changes in various areas of human life.

In this context, educational institutions also had to adapt to social distancing guidelines, often adopting remote teaching models to replace in-person classes. According to Hodges *et al.* (2020), the use of remote teaching represents an atypical and temporary shift in the delivery of curriculum components in alternative ways, due to the crisis circumstances caused by the pandemic.

On March 17, 2020, through Ordinance No. 343, the Ministry of Education authorized the substitution of in-person classes with classes delivered through digital means for the duration of the pandemic situation (Brasil, 2020). Educational activities were categorized as synchronous and asynchronous. Synchronous activities occur in real time, with students and teachers actively participating in a virtual classroom, while asynchronous activities do not require simultaneous interaction between teachers and students.

At the Federal Institute of Education, Science and Technology of Bahia (IFBA), the Superior Council (CONSUP), in its meeting on March 19 and 20, 2020, unanimously resolved to suspend in-person academic activities and events indefinitely. This decision was formalized through Resolution No. 07, dated March 22, 2020 (IFBA, 2020). The Institutional Contingency Plan of the Federal Institute of Bahia in response to the SARS-COV-2 (Coronavirus) Pandemic (2020) included examples of synchronous and asynchronous activities in the context of non-face-to-face educational activities required by the pandemic:

> […] non-face-to-face educational activities of an emergency nature are understood as a set of synchronous or asynchronous activities that can be offered through digital means, as well as other complementary technologies, for example, printed materials, considering the diversity and different demands of the public served by IFBA. Regarding synchronous activities, live-streamed classes via platforms or virtual learning environments that promote real-time interaction between teachers and students are mentioned. As for asynchronous activities, teaching-learning actions that do not require simultaneous interaction between teacher and student are included, which can occur at different times, such as the use of videos or educational programs on TV or digital platforms, or virtual forums (preferably of short duration and without the need for simultaneous connection), guided studies, research, surveys, models, projects, interviews, experiments, and simulations (IFBA, 2020, p. 16, our translation).

The adopted measure caused various difficulties for the managers, teachers, students, and families involved in IFBA's educational context. Some of the impacts included difficulty accessing to the Internet to participate in activities, a lack of training for teachers in handling technological supports, learning difficulties, and interference in family life organization.

In this perspective, the search for solutions to promote greater interest and commitment of the students to their courses and the maintenance of a connection with the institution became necessary, given the imposed reality. Thus, among the actions implemented to adapt institutional routines during the pandemic period, the organization of events in an online format constitutes a viable and valid tool for knowledge sharing and construction?

Amidst the changes faced, the organization of the Electrical Engineering Week at IFBA Campus Paulo Afonso took place. This event is intended to be held annually, with scheduling in the academic calendar, with its first two editions being executed online. The first edition of the event took place from November 23 to 27, 2020, while the second edition was held from November 22 to 26, 2021.

The chosen dates for the event coincide with the celebration of the National Day of the Electrical Engineer, which occurs on November 23. The commemorative date was established by Law No. 12,074, on October 29, 2009, with the aim of valorizing the importance of the Electrical Engineer professional, whose day selection carries the memory of the first Brazilian technological university, the *Instituto Eletrotécnico de Itajubá*, located in Itajubá (MG).

Methodology

This work adopts a descriptive approach, configuring itself as an experience report. The activities were conducted by the Coordination of the Electrical Engineering Course of the Federal Institute of Education, Science, and Technology of Bahia (IFBA), Campus Paulo Afonso, with the support of the Coordination Assistance. These activities took place during the first and second editions of the "Electrical Engineering Week at IFBA Campus Paulo Afonso" event, which were held remotely, using the Google Meet tool. The broadcasts were made via YouTube in the first edition, while in the second edition, the recordings were played on the same platform, on the IFBA Campus Paulo Afonso channel.

The Coordination of the Electrical Engineering Course of the Federal Institute of Education, Science, and Technology of Bahia (IFBA) had already considered the realization of

its event since the beginning of the course in 2012, scheduled in the academic calendar and honor of the Day of the Electrical Engineer. However, during the pandemic period, it was only in 2020 that the project was formally proposed by the coordination and approved by the General Directorate and the Teaching Directorate of the mentioned IFBA campus. The event aimed to encourage student participation in academic activities, promote a greater sense of belonging and appreciation for the course, and seek recognition of the course by the community.

The planning process for the Electrical Engineering Week at IFBA Campus Paulo Afonso took place in virtual format in meetings of the Electrical Engineering Coordination, also held remotely. This process began with the definition of dates and activities that would be carried out during the event. As mentioned earlier, the event period encompasses November 23, established as the Day of the Electrical Engineer.

The coordination of activities was organized by the course instructors and administrative staff of the campus, such as the Laboratory Technician, who was responsible for a virtual technical visit to *Paraibuna Embalagens* company, through the Brasil 3D Platform, in the first edition of the event, and for a workshop in the second edition. Speakers with expertise in specific topics of interest (Figure 01 and Figure 02) were also invited to deliver specific content. Student participation was included in the event schedule with activities such as experience sharing, presentation of works, and technical sessions. Registrations and certificate issuance were facilitated virtually and free of charge through the Even3 website.

The theme of the event's first edition was "Electrical Engineering and Pandemic: Challenges and Opportunities," with the following activities defined: lectures, virtual chats, virtual technical visits, intern experience sharing, and presentation of works. The event was streamed via YouTube (IFBA Campus Paulo Afonso channel).

Figure 01 – Promotion card of the 1st Electrical Engineering Week at IFBA Campus Paulo Afonso[4]

Source: Research data.

The second edition of the event did not have a specific theme and included the following activities in its program, as shown in Figure 02: lectures, workshops, technical sessions, alumni experience sharing, and mini-courses. The event was streamed via Google Meet, and the recordings were subsequently made available on YouTube (IFBA Campus Paulo Afonso channel).

[4] This card shows the days on which the event will take place. Each theme has a different day and time.

Figure 02 – Promotion card of the 2nd Electrical Engineering Week at IFBA Campus Paulo Afonso

Source: Research data.

Results and Discussion

The Electrical Engineering Week at IFBA Campus Paulo Afonso was conceived to foster student participation in academic activities during the social isolation imposed by the COVID-19 pandemic, aiming to integrate students with the professional world and disseminate scientific knowledge. In the first edition, there was participation from institutional stakeholders, students, and staff, as well as external participants. In the second edition, however, registration was only limited to students and staff.

Registrations for both editions of the event were conducted through the Even3 website. In the first edition, which offered categories for students, staff, and external participants, there were 127, 31, and 17 registrations, respectively, totaling 175 participants. In the second edition, the available categories for registration were student, faculty, and administrative staff, resulting in 86, 7, and 2 registered participants, respectively, totaling 95 participants. It is important to note that a minimum attendance of 75% in the scheduled activities was required to receive the event certificate.

The activities took place over the course of five days each year. It is worth noting that in the first edition, as it was streamed via YouTube, there was no limitation on the number of participants. However, in the second edition, conducted via Google Meet, there was a limit of 100 registrants for each activity. This limitation did not pose an obstacle to the event, as the total number of registrants in the second edition was 95 participants.

In the first edition of the event, themed "Electrical Engineering and Pandemic: Challenges and Opportunities," the four lectures delivered covered topics of interest in the field of Electrical Engineering linked to the pandemic: "Research and Development in Engineering (R&D): Post-pandemic Perspectives," "Job Market in Electrical Engineering - post-pandemic perspectives/scenarios," "Adaptations in the infrastructure of university hospitals to cope with COVID-19," and "Brazilian Electrical Sector: post-pandemic perspectives," all delivered by professionals with expertise in the field.

The virtual chat, led by a psychologist, had the theme "Happiness and academic life: strategies for preventing psychological distress," marking the event's interdisciplinary nature and concern for the mental health of students during the pandemic. The laboratory Technician of IFBA, Campus Paulo Afonso, also conducted a virtual technical visit, focusing on Electrical Engineering and Occupational Safety.

During the Electrical Engineering Week (IFBA), other activities included internship experience reports and paper presentations. In the internship experience reports, three student interns shared their experiences during their internships. As for paper presentations, participants submitted their papers through the event's webpage. Of the eight papers submitted, six were approved by a committee composed of faculty members from the Electrical Engineering Course (IFBA) and presented during the event, resulting in the issuance of specific certificates for paper presentation to the students.

In the second edition of the event, lectures were held covering the topics "Study Strategies: attention, memory, and productivity," delivered by an educational psychologist, and

"Model of Maturity of Smart and Sustainable Cities of Brazil - MMCISB." Additionally, a workshop and a mini-course were offered, aiming for a more technical approach. The workshop addressed the "Soldering for Electronics" theme, while the mini-course covered "Introduction to Programmable Logic Controllers."

During the II Electrical Engineering Week, a technical session was also held with students from the Introduction to Electrical Engineering and Sociology of Work courses, in which the students presented their research on specific topics and subsequently discussed them with experienced professionals. One of the topics discussed was the "Light for All" Program, which inspired the employee *Lídia Carvalho Sandes Tenório* to present a proposal for a Master's pre-project in Rural Extension at UNIVASF, which was approved. Another activity was the alumni experience report, in which three former students of the Electrical Engineering course shared their professional experiences after graduation, one in academia, one as a self-employed/entrepreneur, and one as an employee.

At the end of the event's first edition, 55 participation certificates were issued, while in the second edition, 57 certificates were issued. Considering that participation in at least 75% of the activities was necessary to obtain the event certificate, it can be inferred that, although the number of participants in the second edition was lower, participation was more effective.

It should also be noted that an evaluation questionnaire was administered for the I Electrical Engineering Week (IFBA), Paulo Afonso Campus, and one of the points raised for improvement was regarding students' participation in the event organization. Therefore, the second edition had the collaboration of two students in the organization and execution of the activities, providing the opportunity to add value to each one's formation.

Final Remarks

The I and II Electrical Engineering Weeks at IFBA, Paulo Afonso Campus, were initiatives of the Electrical Engineering Course Coordination of the aforementioned campus of IFBA, aiming to promote a space for discussions and contribute to the training of future Electrical Engineers, as well as to meet a need of the course regarding the realization of its own event.

The realization of two editions of the event in remote format, due to the pandemic period, represented the overcoming of organizational difficulties and made it possible to

perceive the importance of the initiative. This reflected a positive impact on the student's academic life and teaching practice, as it allowed the integration of knowledge and experiences.

With the aim of consolidating the event in the academic calendar, it is intended to enhance aspects such as dissemination, support, student participation in the organization, and speakers, as well as to encourage the insertion of extension activities by undergraduates within the community, in attention to the inseparability between teaching, research, and extension. Future sanitary conditions will determine whether the next editions of the event will be held remotely or in person.

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