

Digital technologies in the activity of Portuguese University Tunas

A case study at RaussTuna - Tuna Mista de Bragança

Bruno M. F. Gonçalves
Instituto Politécnico de Bragança
Bragança, Portugal
bruno.goncalves@ipb.pt

Vitor M. B. Gonçalves
Centro de Investigação em Educação Básica
Instituto Politécnico de Bragança
Bragança, Portugal
vg@ipb.pt

Abstract — The covid-19 pandemic triggered the widespread use of digital technologies in practically all countries not only because of the need for organizations, companies and institutions to continue to produce, but also as a way for individuals - beings of a social nature - to communicate and interact with each other during this whole troubled period. Higher education institutions were also no exception and were forced to implement online teaching across the country so that students would not be left without access to knowledge and, consequently, regress in learning. The University Tunas that constitute themselves as musical groups and are normally assigned to these institutions (of higher education) are also an example of organizations or associations that have had to adapt to new contingencies through the latest digital technologies. This study focuses precisely on this issue of the use of digital technologies by University Tunas. However, the specific case study is the “RaussTuna - Tuna Mista de Bragança (TMB)” of the Polytechnic Institute of Bragança (Portugal). In general, we intend to understand how this group of young people use digital technologies within the scope of their activity as an associative group: What are the digital technologies adopted by the University Tunas? What restrictions do members of a Tuna have in the use of digital technologies? What suggestions can be implemented to improve the digital quality of Tuna's activities? The results point to the use of a wide range of digital technologies for different purposes, especially office tools, electronic presentation software, audio, video, management of conferences or events and social networks. Members assume that they have a set of restrictions regarding the use of technologies and because of this they need training in the area to improve their skills. Finally, Tuna members present a set of improvements both at the software and at the hardware level that eventually can be implemented to increase digital quality.

Keywords – *associativism; digital technologies; higher education institutions; university tunas.*

I. INTRODUCTION

It is true that the social distance caused by confinement and isolation due to the covid-19 pandemic conditioned numerous activities of higher education institutions in the most varied areas. The University Tunas belonging to these institutions are an example of youth associations that were also clearly affected by the need to close teaching activities.

Since the musical concerts and the on-site activities of the University Tunas could not be carried out, “RaussTuna - Tuna Mista de Bragança (TMB)” understood that part of the

activities could be carried out at a distance and, through them, maintain cohesion and the “Tunae” spirit among the members of the association so that it was possible to safeguard the continuity of the association, regardless of the duration of confinements and the need for social distance, but also to ensure that its members were not forgotten during this complicated period. Thus, it was decided to adopt a set of digital technologies that allowed maintaining communication, interaction and collaboration between the members that make up the respective Tuna. It was supported by this technical-digital experience that we considered it important to study beyond the periods of confinement and the covid-19 pandemic. We then decided to investigate whether the University Tunas use digital technologies and, if so, then for what purposes: For merely administrative (office) purposes? For purposes related to the promotion of the Tunas brand and image? For purposes related to audio and video production? For rehearsals or concerts? After all, what areas do University Tunas use digital technologies? It is precisely this issue that caught our attention, since this type of youth groups seem to be increasingly using technologies to carry out their activities.

The study becomes important, on the one hand, due to the need to acquire knowledge and digital skills by these young people (individual dimension) and, on the other hand, because of the recognition that they have in the constant need to modernize and innovate in this type of groups and youth associations for the become more competitive, current and dynamic (collective dimension).

The results obtained challenge the reader to reflect on the importance of University Tunas using the latest technologies to support the development of their activities. They also point to the importance of reinvention and innovation both in normal times and in times of crisis, which are absolutely central aspects for the functioning and affirmation of associations in the universe of academic communities.

II. THEORETICAL CONTEXTUALIZATION

A. Associativism in higher education

Society in general often looks with some depreciation towards some of the extracurricular activities of Universities and Polytechnics, probably due to the fact that they consider that they somehow condition the success of the scientific path

of higher education students. However, what pedagogues and experts show us is that this perspective may not be as linear as it appears to be. For example, for Freire [1] the meaning of education was not made or is made only through the formal teaching method, commonly known as the classroom, but also through an entire cultural and social interaction. [2] also mentions that, now, we are facing a new educational culture, which is composed of new spaces, networks of communication, interaction, freedom of expression and social self-organization that come to transform the role of the current student and the way in which it looks at higher education and the acquisition of knowledge.

The students' extracurricular activities as well as associativism seem to work as a source of motivational energy, as they are activities outside the classroom context. In general, these activities seem to enable the student to develop other skills and competences that can serve as an escape from the "educational stress" typical of the higher education environment and, consequently, provide a better use and/or performance of the student in the component. academic. Obviously, it is up to the student to define their priorities according to the objectives they want to achieve; however, it does not seem correct to conjecture that being a member of an association or, in this case, of a Tuna necessarily implies the commitment of the academic component. or until the eventual withdrawal of the course. If the student commits himself, it is perfectly possible that he will succeed in both components – associative and academic. Prioritizing is undoubtedly the answer to the success of a student who is an integral member of an association and/or Tuna.

Associativism, in the context of University Tunas, is a form of social organization that is characterized by its character, normally, of voluntary work and by the union of a group of individuals used as an instrument for the satisfaction of individual human needs (in its most diverse manifestations). Thus, associativism is an important space, in principle open, where students have the opportunity to develop a wide range of skills, namely the stimulation, participation and deepening of interpersonal relationships, experiences and knowledge. In this sense, associativism can function as an important factor of participation and civic contribution. Like associativism, the University Tunas seem to enable learning and sharing of experiences among a group of individuals who thus form a heterogeneous group. In addition to this aspect, the Tunas make it possible to bridge the differences that are denoted in the group environment and encourage teamwork to achieve the common goal.

Collaboration, socialization, communication, conflict management, leadership, administrative and musical skills, autonomy, responsibility, mutual help, the courage to accept challenges and successfully implement them, solving individual or group problems, the importance of each person in the daily construction of an association, the management of institutional relationships, the ability to learn from the mistakes made, the importance of the values and principles of a rule of law, the appreciation of the human being and sensitivity to causes social skills also seem to be some of the

knowledge, values and skills that, in general, the Tunas can offer their members. These aspects seem to show that associativism, namely the University Tunas, positively influences the lives of higher education students in the most varied dimensions.

B. University Tunas

What is a Tuna? The concept of TVNAE MVNDI (International Academic Association, non-profit, which promotes research on the past and present of University Tunas) is adopted, as it is considered the most appropriate to the reality of Tunas. Thus, a Tuna can be considered a "permanent initiatory musical grouping of students with a joyful and bohemian life linked to an academic center whose musicality pivots on the plectrum instruments and their clothing, usually topped with a cape, fully identifies them"[3]. Tunas can be divided into three categories - Male, Female and Mixed - which are distributed across most higher education institutions from North to South of the country, including the Azores and Madeira Islands. On the one hand, each Tuna has its own characteristics that result from several factors such as, for example, its historical and socio-cultural background as well as the culture of the institutions and locations where they are based. On the other hand, there are aspects that seem to be transversal to all Tunas, such as the dissemination of local and regional culture, the promotion of Institutes and Universities, the use of academic attire, the presentation and posture on stage, the instruments used in the performances, the type of repertoire adopted, the *passe calles* (musical streets), the academic serenades, the bohemian tunas, the participation in Tunas meetings and festivals and, finally, the rituals/ceremonials.

With regard specifically to the Tunas of Mixed typology, it is believed that the appearance of this typology was driven by two aspects: "the willingness of boys and girls to get involved in projects of this nature... these projects could succeed" [3]. It should be noted that, in recent years, this type of Tunas have been growing significantly in Portugal, as a result of these desires (of the boys and girls) and of the evolution of both the academies and the sociocultural context. Although in the recent past it did not happen, nowadays the Mixed Tunas are as respectable as the masculine or feminine ones, both at the musical and artistic level and in terms of their traditions and values. All are important for the dissemination of culture, music and traditions of the institutions they represent and the cities where they are based.

C. RaussTuna – Tuna Mista de Bragança (TMB)

"RaussTuna - Tuna Mista de Bragança (TMB)" emerged from the "Grupo de Cantares do Instituto Politécnico de Bragança", whose foundation date dates back to October 29, 2009. RaussTuna/TMB aims to: (i) Cultivate and develop art musical tunas; (ii) Promoting and collaborating in charity or purely artistic shows (meetings and tuna festivals); (iii) Promote tours, at least one per year, that provide members with education and recreation and contribute to increasing the prestige of this association and the Polytechnic Institute of Bragança (PIB); (iv) Foster the academic spirit within the community of the PIB, as well as the community in general;

(v) Contribute and help, whenever possible, academic organizations with the aim of increasing the spirit of academic union; (vi) Contribute, whenever possible, to activities that raise the name of the city of Bragança; (vii) Promoting relationships between students, and with the students of this Institute, as well as with the general public; (viii) Publicize liturgical, academic and national music; (ix) Promote the image of the Institute and the city of Bragança at national and international level, participating in and organizing academic activities [4].

All students and former students, teachers and employees of the PIB can be members of the RaussTuna/TMB, as well as legal persons who identify with the scope of the association, and currently, the Tuna has 78 elements (active and inactive), of both genders and aged between 18 and 65 years. Each element is positioned in a hierarchical chain, naturally according to its progress: “Criadage” (elements that are in the initial stage of musical and “spiritual” preparation still do not participate in performances); Freshmen and Freshmen Rauss (elements who are moderately prepared at the musical level and, as such, actively participate in all TMB activities); Tunos (in addition to actively participating in TMB activities, they transmit the acquired knowledge to the newest members); Veterans (members who essentially distinguish themselves in the values of the TMB, seeking to transmit this knowledge and experience to all hierarchies).



Figure 1. Logo of RaussTuna - Tuna Mista de Bragança (TMB)

The official emblem of the TMB (Figure 1) highlights its motto Unio, Labor et Justitia, that is, Union, Work and Justice. Thus, the musical notes represent the work accomplished; the musical instrument (mandolin) portrays the union between all the elements of the RaussTuna/TMB; and, finally, the spikes, located on both sides, demonstrate justice. The letters mirrored on the “IG” mandolin are a tribute to the Management Informatics course in Polytechnic Institute of Bragança, the birthplace of RaussTuna/TMB, where most of its founders came from.

D. Digital technologies in the context of a pandemic

In a period of confinement, RaussTuna/TMB, through the design and implementation of an action plan, decided to continue its activity through the latest digital technologies - since musical concerts and activities had to be cancelled. Thus, through digital technologies it was possible to carry out activities and internal meetings with the other members of Tuna. There were very active, dynamic online meetings with a

lot of participation and dedication from everyone. Technologies also made it possible to engage and attract new members even with all the limitations and constraints of online environments and the social distancing experienced. In this line, the proximity that TMB managed to maintain and even create with various people and institutions in the city of Bragança through the promotion and dissemination of the association's brand and image through the most recent digital media adopted by the academic community and society is also noteworthy. civilian in general. Weekly rehearsals were also held, on Mondays and Wednesdays, in order to maintain the habit of rehearsing and socializing with peers, but also for playing and singing, acquiring musical skills both at the vocal and instrumental level and at the choreographic level. Investment was also made in social causes, both in terms of financial support granted in connection with the realization of Rauss&Tunas – Solidarity Festival of Mixed Tunas in Bragança, and in terms of campaigns carried out through digital networks and platforms.

It is also important to mention that RaussTuna/TMB was already using digital technologies as tools to carry out its activity long before the beginning of the pandemic, in fact since its foundation in 2009. Obviously, with the progress of the years and with the constant emergence of and updating of the technological market that the members and the association itself ended up modernizing, adopting the most appropriate technologies for each dimension of Tuna's activity.

It is also important to mention that RaussTuna/TMB was already using digital technologies as tools to carry out its activity long before the beginning of the pandemic, in fact since its foundation in 2009. Obviously, with the progress of the years and with the constant emergence of and updating of the technological market that the members and the association itself ended up modernizing, adopting the most appropriate technologies for each dimension of Tuna's activity. Some examples of types of technologies are related to the management and maintenance of social networks, the planning, development and maintenance of the association's website, videoconference meetings, the use of tools from the user's perspective (internet access, tools in the office suite, image, video and sound editing programs, software oriented to small musical compositions, instrument tuning, among many others). In fact, digital technologies are an absolutely central aspect in the development of a youth association, as they make it possible to reach audiences that were not very difficult to reach before and allow us to maintain much closer contact with everyone.

III. METHODOLOGY

For the development of the present research, the methodology of case study is adopted - the “RaussTuna - Tuna Mista de Bragança (TMB)”, from the Polytechnic Institute of Bragança (Portugal). Through this methodology we intend to answer the following research question: How do University Tunas use digital technologies in the exercise of their activity?

- 1) *What are the digital technologies adopted by the University Tunas?*

- 2) *What restrictions do members of a Tuna have in the use of digital technologies?*
- 3) *What suggestions can be implemented to improve the digital quality of Tuna's activities?*

To carry out the study, quantitative and qualitative research techniques were adopted. In the former, a survey was chosen using a questionnaire carried out on Google Forms and sent to all members of RaussTuna/TMB. This survey made it possible to know the individuals based on socioeconomic variables (gender, age group and academic degree) and made it possible to understand how this group of young people uses digital technologies within the scope of Tuna's activity.

The survey was submitted to all members and 63 surveys were completed, setting the response rate at 80.76%. Table 1 shows the response rate by gender, noting that the female gender was the one that most contributed to the present study (50.80%), although without any statistical significance, since the two values related to gender are very close.

TABLE I. SURVEYS BY QUESTIONNAIRES (TOTAL RESPONSES)

Genre	Frequency	Percentage
Male	32	50,80%
Female	31	49,20%
Total	63	100,00%

It should be noted that the survey was carried out based on the literature in the area from research carried out on the web.

In the qualitative analysis, participant observation was used since the authors of the study are also members of RaussTuna/TMB. After data collection, a quantitative analysis of the data from the questionnaire surveys was carried out, as well as a content analysis from the data resulting from participant observation. These two analyzes allowed for greater clarity, robustness and understanding of the results.

IV. DISCUSSION OF RESULTS

In this point, the main results are discussed as a way of answering the research questions initially formulated. First, we seek to identify the typology of technologies adopted by RaussTuna/TMB, specifying the tools used by its members and the context of use. Then we point out the different restrictions and limitations that Tuna members have in the use of different technologies in the context of their activities. Finally, we present a set of suggestions for the digital improvement of Tuna in its three fields of activity - administrative, music and values.

A. Digital technologies adopted by University Tunas

During the study, we were able to identify a range of digital technologies used by RaussTuna/TMB that essentially serve three purposes: (i) Facilitate the process of planning, design, development, organization and evaluation of Tuna's activities; (ii) Facilitate access to the association's various types of information and, through this, make internal processes faster, more effective, current and closer to reality; (iii) Promote the brand and image of Tuna on other online platforms and attract new young people to the project through

modernization and digital innovation. The more innovative Tuna is, the more attractive it becomes to the target audience - the students of the Polytechnic Institute of Bragança.

There are several fields at Tuna where digital technologies are integrated, from the outset, in the administrative field, the tools from the user's perspective that involve the management and organization of files on the computer, internet access taking into account good practices, access to home banking, the use of Microsoft Word for word processing, Microsoft Power Point for making presentations, Microsoft Excel for organizing contacts, budgets and many others.

In the field of marketing and dissemination, online platforms are used, such as the official website of RaussTuna/TMB made in WordPress which is available at www.rausstuna.pt or the Jornadas website available at www.jornadastmb.ipb. en (This event aims at the internal training of the elements that make up Tuna, but also the construction of knowledge through the presentation of communications from its members and personalities outside the association who are invited to make their contribution to improving the quality of Tuna). In addition to both sites, there is the use of social networks (Facebook, Instagram and LinkedIn), but also other platforms such as Google tools such as Google Forms, Gmail or Youtube.

In the field of financial management, Microsoft Excel is used to create weekly and monthly maps and prepare budgets and account reports. It also allows you to make financial projections, calculations and create presentations through graphs and tables of financial data. It is one of the most important and serious tools that Tuna uses for the association's accounting management. This tool is equally applicable to the management of Tuna's bar. It should be noted that with regard to the bar, an application was created from scratch to record the consumption (drinks and food) of each member of Tuna, and then a message is sent by email to each of the users to proceed with the respective payment. This seems to be another innovative initiative that helps to manage stock, consumption and payments allocated to the bar.

In addition to those mentioned, there are other areas in which digital technologies are quite useful and beneficial, namely in social solidarity. An example of the use of technologies in this field was, for example, the realization of the Solidarity Festival of Mixed Tunas in live transmission on the internet (streaming): concerts were held and several hundred euros were raised for donation to a solidarity cause. Without technologies, in the period of confinement it would be totally impossible to help these social causes. Another field seems to be the management of human resources through the online membership files and the management of their contacts. The transport management and logistics inherent in Tuna is another field that is managed through technologies, namely through Google Calendar - where an invitation is sent to all Tuna members and these, depending on their availability, confirm their participation in certain activity. Technologies are also used in the field of values, such as the Information and Administrative Management System (IAMS) available on Google Sites and where Tuna's structuring documents are

deposited and archived, that is, the values, rules and the association's traditions. Finally, in the musical field, there are also some technologies such as digital tuners, software for music composition, the creation of an online course - digital space for tutorials - conceived on the UdeMy platform in Massive Open Online Courses (MOOC) format. It should be noted that all members of Tuna can learn the original themes (vocals, instrumental and choreography) through this MOOC. It's actually quite a big leap that promises to help contribute to improving Tuna's musical quality.

B. Constraints on the use of digital technologies

A set of restrictions and limitations in the use of digital technologies were also detected, which have to do with the lack of digital skills in the technologies adopted by Tuna. Effectively, not all the members, but some, especially the younger ones - those who joined Tuna a very short time ago. Another limitation seems to be the very limited contact with technologies that prevent these members from experimenting and working with these tools. This situation often has to do with the type of functions that elements occupy in Tuna. If they have functions more in the administrative field, it is natural that they use technologies more, if not, then they use these technologies less. The limitations related to time management and the difficulty in reconciling with other activities also seem to be pointed out as a difficulty in dealing with digital technologies. Finally, the resilience of the members themselves in the use of the tools is also pointed out and they recognize that they need more specific training in the area to use these technologies even more effectively in Tuna's other activities. The members who most use these technologies come from courses related to technologies, management, engineering, although there are other members from other courses that make good use of them.

C. Suggestions for improving the digital quality of Tuna's activities

Several suggestions for improvement at the digital level were identified by the members that can contribute to the simplification of the internal processes of their Tuna. They are: Acquiring a computer for Tuna's room; Improve the application of bar management; Improve the way in which the confirmation of attendance for activities is managed; Acquire software for the production of multimedia content; Improve Tuna's website; Better manage social networks; Improve internet access in Tuna's room; Find innovative digital solutions in the area of music; Create a suitable digital space for learning Tuna songs; Create a suitable digital space to obtain recommendations and formative assessment on values and other aspects of Tuna.

In the administrative field, the following set of suggestions for improvement is indicated: Acquiring a computer for Tuna's room; Acquire accounting management software; Acquire software for word processing; Acquire software for the production of multimedia content; Renewal of document management; Modernization of online platforms; Acquire institutional e-mails for Tuna members; Improve the

application of the bar; Create an online course for acquiring administrative skills.

In the musical field, the following suggestions for improvement are identified: Acquire music production and editing software; Find innovative digital solutions in the area of music; Create a suitable digital space for learning Tuna songs; Create videos demonstrating the interpretation of the original themes; Direct the rehearsals to social media; Directing concerts and other musical activities to social networks; Create an online course for acquiring musical skills

In the field of values, the following set of suggestions for improvement are highlighted: Create an adequate digital space for learning Tuna's values; Create an online course for acquiring values; Use software, applications and educational games to transmit Tuna's values; Simplify access to Tuna's structuring documents; Create a short film about Tuna's values; Create a suitable digital space to obtain recommendations and formative assessment on values and other aspects of Tuna.

The following suggestions also stand out: Monitoring and managing the "career" of each element of Tuna; Electronic card system for access to the refrigerator; Automation of processes, such as a better application of the Bar, Budget Management software and software that supports voting and elections in the General Assembly; Strengthening the presence and use of software on social networks; Create an application to facilitate administrative processes; Opening of the Tuna room using a card that all members would have access to and which would be registered in a computer system; All performances must be recorded.

CONCLUSIONS

The results point to the use of a wide range of digital technologies for different purposes, especially office tools, electronic presentation software, audio, video, management of conferences or events and social networks. Members assume that they have a set of restrictions regarding the use of technologies and because of this they need training in the area to improve their skills. Finally, Tuna members present a set of improvements both at the software and at the hardware level that eventually can be implemented to increase digital quality.

If we talk about digital technologies used by University Tunas, I can say there are several technologies used by RaussTuna/TMB in the exercise of its activity. In general, this association uses tools from the user's perspective to facilitate the process of production, organization, management and archiving of information, but also tools for disseminating this information, such as social networks, website and other modes of dissemination. It is also noted the use of tools for the production of other multimedia content, such as image, sound and video, but also tools related to musical composition and instrument tuning and tools related to bar management, namely, a mobile application. All these tools are now essential for the full and effective implementation of Tuna's activity.

In this study, we also understand that, although different digital technologies are used as a way to help, mediate or even support the activity of RaussTuna/TMB, there are some

restrictions or constraints on their effective use. These limitations have to do with the lack of digital skills in the technologies adopted and the limited contact with the technologies that prevent Tuna members from experiencing the tools. There are also limitations related to time management and the conciliation of activities other than Tuna, the lack of training for the effective use of the technologies adopted and the resilience of some members in the use of technologies in the exercise of activities.

In short, we can register here some main suggestions for improving the digital quality of Tuna's activities: (i) Administrative field: Having concluded the study, it remains to leave some suggestions, starting with the administrative area, in general, it is suggested the need for this Tuna to acquire a computer to carry out the work, the improvement of the application of the bar, the management of attendance at activities, the Tuna website and internet access. The modernization of online platforms, adoption of institutional e-mails and the acquisition of software (production of multimedia content, word processing, management, and accounting) are other suggestions to take into account for Tuna's digital innovation. (ii) Music field: In the area of music, there also seem to be some suggestions related to the importance of acquiring music production and editing software, as well as the creation of a digital space for learning Tuna's songs. It should be noted that this space with demonstration videos is being designed on the Udemmy platform, in Massive Open Online Courses (MOOC) format and will be launched next month for all those who wish to learn Tuna's songs (different voices and different instruments). Other suggestions are related to the production of live videos for online platforms for rehearsals and live concerts with the aim of promoting Tuna's brand and image and attracting new young people to this project, which is a place for learning and positive and diversified experiences. Also in this area, the continued importance of looking for innovative digital solutions that allow better individual and group musical quality stands out. (iii) Values field: In the area of music, there are also some suggestions to be identified, such as the creation of a suitable digital space for learning Tuna's values, such as the creation of an online course for the acquisition of values. This course, as in the field of music, can be created on the Udemmy platform (or another similar one) in MOOC format or other online teaching technology. The use of software, applications, tools and didactic games for the transmission of Tuna's values seems to be another important suggestion for the promotion and learning of values. Other ideas are also the simplification of access to the association's structuring documents, the creation of a short film about Tuna's values and the design of a suitable digital space to obtain recommendations and formative assessment on values and other aspects of Tuna.

The results obtained challenge the reader to reflect on the importance of University Tunas using the latest technologies to support the development of their activities. They also point to the importance of reinvention and innovation both in normal times and in times of crisis, which are absolutely central aspects for the functioning and affirmation of associations in the universe of academic communities.

Technologies are indeed very important to improve the activities of University Tunas at the most varied levels of performance!

REFERENCES

- [1] P. Freire, *Educação e mudança*. Editora Paz e terra, 2014.
- [2] M. Castells, "A Sociedade em Rede, 9ª," *São Paulo Paz e Terra*, 2006.
- [3] R. T. Eduardo Coelho, Jean Pierre Silva, João Paulo Sousa, *QVID TVNAE? A Tuna Estudantil em Portugal*. Editio Vrbi et Orbi Lvsitana Prima, 2012.
- [4] TMB, "Estatutos da RaussTuna - Tuna Mista de Bragança," 2012.