Podcast as a potential didactic resource for practice and teacher formation[1]

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ABSTRACT

The article brings three researches that complement each other. One marked by an analysis of state of the art situation around educational podcasts, a second research characterized by an experiment carried out in a class of pedagogy course of the Federal University of Alagoas (UFAL) and, finally, an evaluation of the perspectives of future teachers regarding the advantages and disadvantages of using this technological tool in their learning, as well as the willingness to use podcasts in their future teaching performances. The research shows that the volume of theses and dissertations aimed at the use of educational podcasts is still reduced, although the potentialities highlighted by these works are numerous, evidencing the importance of greater investments in the theme and dissemination of successful practices. From the experiment it was noticed that the podcasts enhanced the learning of future teachers, as well as awakened them to the possibilities of their use in their future teaching practices.

KEYWORDS: Teacher training. Podcast. Didactic Resource.

Podcast como un recurso didáctico potencial para la práctica y la formación del professorado.

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RESUMEN

El artículo trae tres estudios que se complementan entre sí. Uno marcado por un análisis de última generación en torno a podcasts educativos; una segunda investigación caracterizada por un experimento realizado en una clase de curso pedagógico de la Universidad Federal de Alagoas (UFAL) y, por último, una evaluación de las perspectivas de los futuros profesores sobre las ventajas y desventajas de utilizar esta herramienta tecnológica en su aprendizaje, así como la disposición a utilizar podcasts en sus futuras actuaciones docentes. La investigación muestra que el volumen de tesis y disertaciones dirigidas al uso de podcasts educativos todavía se reduce, aunque hay numerosas potencialidades destacadas por estos trabajos, lo que evidencia la importancia de mayores inversiones en el tema y la publicidad de prácticas exitosas. A partir del experimento, se notó que los podcasts mejoraron el aprendizaje de los futuros maestros, así como los despertaron a las posibilidades de su uso en sus futuras prácticas de enseñanza.

PALABRAS CLAVE: Formación docente. Podcast. Recurso didáctico.

Podcast como potencial recurso didático para prática e a formação docente.

RESUMO

O artigo traz três pesquisas que se complementam. Uma marcada por uma análise do estado da arte em torno dos *podcasts* educativos; uma segunda pesquisa caracterizada por um experimento realizado em uma turma do curso de Pedagogia da Universidade Federal de Alagoas (UFAL) e, por fim, uma avaliação das perspectivas de futuros professores quanto às vantagens e desvantagens de utilização dessa ferramenta tecnológica nas suas aprendizagens, assim como da disposição em utilizar *podcasts* em suas futuras atuações docentes. A pesquisa evidencia que o volume de teses e dissertações voltadas para o uso de *podcasts* educativos é ainda reduzido, embora sejam numerosas as potencialidades destacadas por esses trabalhos, evidenciando a importância de maiores investimentos no tema e divulgação de práticas bem-sucedidas. A partir do experimento, notou-se que os *podcasts* potencializaram a aprendizagem dos futuros professores, bem como os despertaram para as possibilidades de seu uso em suas futuras práticas docentes.

PALAVRAS-CHAVE: Formação de Professores. *Podcast*. Recurso Didático.

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Introduction

The new Information and Communication Technologies (ICTs) have been appropriated by educators from all areas and levels of education in order to make their classes more dynamic, pleasurable and meaningful. During the quarantine, imposed by the Covid-19 pandemic in 2020, the search for technological resources expanded substantially and research that discusses its potentialities and limitations is urgent.

In a context of "normal life", audiovisual resources are already well present and popular in everyday school practices, especially the use of videos and music. However, there are other features that arise made possible by Web 2.0 that have not yet gained the same popularity, such as the educational podcast (podcast-edu). Assuming that teacher education can involve not only content learning, but also knowledge of the potentialities of the uses of ICTs in education, we consider it important to analyze part of the scientific production on the subject, as well as explore the potentialities of the use of this resource.

In general terms, the podcast consists of audio contents that can be accessed anytime and anywhere, allowing it to be stored on devices capable of playing the files. This is about publications in multimedia files available on the internet, which was called Podcasting. Although the name podcasting refers directly to Apple's iPod, it can be produced, uploaded, downloaded and heard by other technological equipments, mostly mobile phones and computers. As smartphones are a hand-held technology for most students, access to this resource becomes easier, as well as the possibility of producing and disseminating through the Internet. As Sampaio-Silva (2019) pointed out, sound, although not as attractive as images, has the ability to collaborate with the development of the imaginative capacity of listeners. The uses of more elaborate and

planned sounds, as occurs in podcasts, can arouse the interest of students and stimulate concentration.

In this article we did, at first, a research called state of the art around podcast-edu. By podcast-edu we understand the podcasts produced in order to be used in formal education. After this mapping, we discuss the potentialities of the uses of this tool at the various levels of teaching. In a third moment, the focus turns to a practice performed in higher education, in the Pedagogy course, more specifically in the discipline Sociological Fundamentals of Education. It analyzes the perception of future teachers/pedagogues regarding the potentialities and limitations of this tool. Thereby, we structured our effort in four stages, they are: i) observation of part of the scientific production on podcast-edu; ii) notes of the various didactic-pedagogical possibilities of uses of this resource in formal education, whether in the classroom or in the out-of-school environment; iii) report of teaching experience and; iv) student evaluation regarding the experimentation of the tool, as well as observation of their perceptions of uses podcasts in teaching-learning practice. The report of the pedagogical experience and the perception of the students about the uses of this technological resource in education was based on two methodologies: i) action-research, which occurred in the second semester of 2019, during the discipline Sociological Fundamentals of Education, in the Pedagogy course of the Federal University of Alagoas and; ii) questionnaires, applied to the student that experienced the production of podcasts in the context of the discipline.

Approach the uses of podcasts as didactic-pedagogical resources matters because, at least, contribute to its popularization and problematize its educational uses, which corroborates the qualification of educational practice. Thereby, this text validate to highlight the podcast as a didactic tool that enhances the teaching-learning process, whether in basic or higher education, enabling the help of future teachers interested in expanding their knowledge about teaching

resources and teaching strategies. It also aims to understand the perception of future teachers regarding the potentialities and limitations of the use of podcasts as a pedagogical resource after experiencing their use as a student in formation.

Educational podcasts: mapping part of academic production

It is certain that there is researches on the use of podcast-edu published in many locations and formats. We chose to prioritize – by the objective limits imposed – at first, the observation of the presence of these researches in the spaces of greater social prestige (theses, dissertations and articles indexed in SciELO) and, in a second moment, in a relatively known space, the Journal Portal (In Portuguese: Portal de Periódicos), maintained by the Coordination for the Improvement of Higher Education Personnel (Capes). Although the surveys conducted do not account for the entire academic field, which is also not our goal, it allows us to observe the state of the art and some aspects that involve researches focused on the educational resource in question. In that regard, seeking to observe the many forms of podcast appropriation by teachers, we conducted the survey of dissertations and theses available in the Brazilian Digital Library of Theses and Dissertations (BDTD) and in the repository Thesis catalogs and Dissertations also maintained by Capes. For this, the descriptor "podcast" was used. After this procedure in the BDTD, we identified 25 results, of which 12 approaches the podcast-edu. In the Thesis and Dissertation Catalogues we find 54 occurrences, of which 28 turn to this pedagogical resource. Disregarding the dissertations and theses that were repeated in the two repositories, 29 papers remained, as observed in Chart 1.

CHART 1: Theses and dissertations on educational podcasts presents in BDTD and the Catalogues of Thesis and Dissertations (CNPq), 2019.

Year	Title	Author	Program	Course	Institution
2008	The possibilities of the podcast as a media tool in education.	FRANCO, Carolina Machado dos Santos de Sousa.	Education, Art and History of Culture.	Academic Master's degree.	Univ. Mackenzie, São Paulo
2008	Podcasting in the Moodle virtual learning environment: an exploratory research in online education.	BAHIA, Mayrton Villa.	Education.	Academic Master's degree.	Univ. Estácio de Sá, Rio de Janeiro
2010	The educational podcast genre: description of thematic content, style and compositional construction.	UCHÔA, José Mauro Souza.	Modern Languages - Language and Identity.	Academic Master's degree.	UFAC, Rio Branco
2010	Educational podcasts: possibilities, limitations and the vision of the higher education teacher.	PAULA, João Basílio Costa.	Education.	Professional Master's degree.	Ceft-MG, Belo Horizonte
2011	Podcasts in teaching German as a Foreign Language: a study of the impact of a new technology.	CARVALHO JUNIOR, Paulo de.	Modern Languages.	Academic Master's degree.	PUC-Rio, Rio de Janeiro
2012	The use of educational computing tools as a pedagogical tool in the study of electricity from a significant learning perspective.	SILVA, Antônio Mozane Teixeira da.	Science and Mathematics Teaching.	Professional Master's degree.	UFC, Fortaleza
2013	Podcast in Brazilian education: nature, potentialities and implications of a communication technology.	FREIRE, Eugênio Paccelli Aguiar.	Education.	Doutorado	UFRN, Natal.
2014	Construction of SNpleno-tópicoi + SNproi + verb in Brazilian Portuguese: a functional analysis based on use.	VIEIRA, André Felipe Cunha.	Linguistics.	Academic Master's degree.	UFRJ, Rio de Janeiro.
2014	Development and evaluation of scientific dissemination podcasts for High School.	MORAES, Luciane Matos de.	Biological Chemistry.	Professional Master's degree.	UFRJ, Rio de Janeiro.
2014	Podcast and Education: a case study.	JESUS, Wagner Brito de.	Education.	Mestrado	Unesp, Rio Claro.
2014	Radioblog at School: a proposal for multiliteracies.	GRIBL, Heitor.	Applied Linguistics.	Doutorado	Unicamp, Campinas.
2015	Science fiction tales as a pedagogical resource for Physics and Astronomy teaching.	FERNANDES, Luis Fernando Gomes.	Physics Teaching.	Professional Master's degree.	UFERSA, Mossoró.
2016	Ecological Citizenship:	COSTA, Maria	Modern	Professional	UFPB, João

	media language and sustainability.	Wilma Albuquerque.	Languages.	Master's degree.	Pessoa.
2016	Public spaces, public knowledge: a podcast as a History teaching space.	PEREIRA, Daniel Carvalho.	History Teaching.	Mestrado profissional	UFRJ, Rio De Janeiro.
2016	Active methodologies in teaching morphofunctional content: use of the podcast as a tool.	COUTO, Alexis Aragão.	Teaching in Health and Environmental Sciences.	Professional Master's degree.	UniFOA, Volta Redonda.
2016	New Literacies in Portuguese Language teaching: reflections on the identity construction of ninth-year students, teacher and school.	SILVA, Claudemira Maria Rocha.	Modern Languages.	Professional Master's degree.	UFAL, Maceió.
2016	Podcast: media tool as an instrument of orality and promotion of citizenship.	ROSA, Vania Virginia dos Santos Freire.	Modern Languages.	Professional Master's degree.	UFBA, Salvador.
2016	Uses and possibilities of the podcast in History teaching.	SOUZA, Raone Ferreira de.	History Teaching.	Professional Master's degree.	UFRJ, Rio de Janeiro.
2017	Construction and validation of podcast with educational content in health with active participation of nursing students.	MUNIZ, Ricardo Alexandre Amaral.	Nursing and Health Education.	Academic Master's degree.	UFPB, Recife.
2017	The pedagogical use of the podcast and initial teacher formation: changes in the educational paradigm	SILVA, Weslley Kozlik.	Education.	Academic Master's degree.	Unicentro, Guarapuava.
2017	Pedagogical use of podcast for professional and technological education.	SOARES, Aline Bairros.	Education.	Professional Master's degree.	UFSM, Santa Maria.
2018	The podcast and oral reading as a resource for the involvement of High School students in literature classes.	VIEIRA, Michele Lago Machado.	Languages Teaching.	Professional Master's degree.	UNIPAMPA, Bagé.
2018	Podcast and the relationship teaching and learning in dentistry.	ALMEIDA, Rodrigo Cavalcante de.	Dentistry.	Professional Master's degree.	Faculdade Ilapeo, Curitiba.
2018	Podcasts in the process of teaching and learning the Portuguese Language: working with linguistic variation in the digital age.	LEITE, Quesia Dos Santos Souza.	Teachers Formation.	Professional Master's degree.	UEPB, Campina Grande.
2018	Proposal for a digital repository for the storage of educational podcasts.	BOTTON, Luciane de Ávila.	Education.	Professional Master's degree.	UFSM, Santa Maria.
2019	Educational intervention using an educational podcast about leprosy.	FERREIRA, Mirthis Cordeiro.	Nursing.	Academic Master's degree.	UFPB, Recife.
2019	Digital narratives in	SILVA, Raphael	Mathematics	Professional	UFPB,

	podcast: evaluative dynamic in the History discipline.	de França e.	and Technological Education.	Master's degree.	Recife.
2019	The use of the podcast as a learning resource in higher education.	SILVA, Mauricio Severo da.	Teaching.	Academic Master's degree.	Fuvates, Lajeado.
2019	Production and use of podcasts to approach the topic of bullying in a school of professional and technological education.	AKITA, Tieko.	Education.	Professional Master's degree.	IFSP, São Paulo.

Source: BDTD and in Catalogues of Thesis and Dissertations (CNPq), 2019.

Of the 29 stricto sensu graduate studies, 62% (18) were produced by male researchers and 37.9% (11) by female. From the survey summarized and demonstrated through Chart 1, we noticed that the academic production in the stricto sensu graduate program that deals with the use of podcast-edu is still reduced, when compared with more traditional resources, such as the didactic-pedagogical use of music or movies. Using the same procedure, as a parametric strategy, taking the descriptor "movie", we found 2,496 results, and for "music", we found 4,414 occurrences.

The productions of researches on podcasts occurred predominantly in professional master's courses, which may be related to the fact that these courses turn to more practical questions, whose "final work of the course should always be linked to real problems in the professional-student's area of activity" (CAPES, 2014). Of the 28 papers, only two (2) are doctoral theses, one (1) defended in the Education course and another (1) in the Applied Linguistics course. With the exception of the dissertations defended in the dentistry (2018) and nursing (2019) courses, all other studies were based on programs aimed at teaching.

We also noticed that, in the work of completion of stricto sensu graduate studies there are a variety of approaches around podcast-edu, although more general discussions of the use of this tool in education predominate (7 papers). We found research focused on the use of podcasts in the teaching of Portuguese Language (5), Physics (2),

History (2), Foreign Language (1) and Biology (1), as well as approaches that involved Distance Learning (EaD) (1), extension project (1), pedagogical intervention (1), teacher training (2) and higher education (4), these more specified in medical courses, Nursing, Dentistry and computing. The two works focused on the use of podcast-edu in teacher formation focused on initial and continuing education formation.

Aware that much of the production of research is published through academic journals, we also seek to map the articles available in the Indexer Scientific Electronic Library Online (SciELO), adopting the descriptors "Podcast" and "Podcasts" and the filter " Brazil Collection ". Looking for the first descriptor, we found 4 results. In the search, using the second descriptor, we identified 3 papers. Disregarding the duplicate results and articles that do not deal with the podcast in the context of Brazilian formal education, we find two works: "Podcast, social participation and development", by Rayane Isadora Lenharo (UNESPAR) and Vera Lúcia Lopes Cristovão (UEL) and; "Cooperative potentials of the school podcast from a Freinetian perspective" (2015), by Eugênio Paccelli Aguiar Freire (UFRN). Using as a parameter, the search in the SciELO indexer for the descriptors "Movie" and "Music", associated with the filter "WoS Thematic Area: Education and Educational Research", presented us, respectively, 48 and 70 results. The almost absence of articles published in journals classified in the upper strata indexed in SciELO is most likely related to the fact that the podcast is a relatively new tool and that its use in education is still recent.

We also conducted four searches for articles on the Capes Journal Portal. In all searches, three filters were used, being "Portuguese Language", "journals reviewed by parts" and "articles". The quantitative outcome of the occurrences is presented in Chart 2.

CHART 2: Occurrences of articles in Portuguese Language about educational podcasts available on the Journal Portal (Jan., 2020).

Search	Descriptors	Number of occurrences
1	"Podcast" and "teaching"	15
2	"Podcast" and "education"	15
3	"Podcasts" and "teaching"	18
4	"Podcasts" and "education"	16
Number of articles*		**13**

Note: Duplicates and articles that are not focused on formal Brazilian education were disregarded.

Source: Capes Journal Portal, 2020.

As a parameter of comparison, searching, from the same filters, by the descriptors "music + teaching" we found 2,973 results. The same search with the descriptors "movie" + teaching" brought us 1,276 results. These figures allow us to infer that the presence of podcast-edu articles available on the Capes Journal Portal is still comparatively low.

The Chart 3 presents the 13 articles found in the Journal Portal (Jan., 2020).

CHART 3: Articles in Portuguese Language about educational podcasts available on the Journal Portal (Jan., 2020).

Year	Title	Author
2008	Podcast, Audacity, Youtube, Skypecast, Chat e Webquest: didactic-pedagogical possibilities on the Internet for English speaking teachers.	MARSON, Isabel Cristina V.; SANTOS, Ademir Valdir dos.
2010	How can Podcasts help Listening Competence in Teaching-Learning Spanish as a Second Language?	FERNANDES, Juliana Da Silva; ALVES, Maraísa Damiana Soares.
2014	Technological concepts aimed at education: the new ways of learning.	LEZME, Jean Roque Santos; QUAGLIA, Isabela Isabela.
2014	Podcasts for the teaching of English Language: analysis and practice of Digital Literacy.	REIS, Susana Cristina; GOMES, Adilson Fernandes.
2014	Educational relations of the Brazilian podcast with the expressive "online" hierarchies.	FREIRE, Eugênio Paccelli Aguiar.
2015	EaD resource management: how to adapt technologies to assimilation profiles.	SANCHEZ, Lucia Helena Aponi; SANCHEZ, Otavio Prospero ; ALBERTIN, Alberto Luiz.
2015	The 2010 Demographic Census: mobile phones in the construction of geographic podcasts.	FRANCO, Aléxia Pádua; SABINO, André Luiz; FARIA, Elizabet Rezende de.
2016	Podcast, social participation and development.	LENHARO, Rayane Isadora; CRISTOVÃO, Vera Lúcia Lopes.

2017	Teaching oral production in English Language through podcast: reporting an experience with Elementary School students.	REIS, Susana Cristina dos.
2018	Planning of classes for many translanguage contexts, multiliteracies and critical literacies.	OKAIGUSIKU, Alberto Eikiti; GRANDE, Gabriela Claudino; VILAÇO, Fabiana Lacerda.
2018	Use of podcast and webquest resources in the study of the evaluation theme in early childhood education.	CARVALHO, Fernanda Beatriz da Costa Miranda de; LIMA, Cristhiane Pereira de; DUTRA, Alessandra; ROSA, Vanderley Flor da; OLIVEIRA, Jair de.
2019	Audionovels between fiction and reality: podcast narratives in the History discipline.	SILVA, Raphael de França e; ALVES, Thelma Panerai.
2019	Use of podcasts as a potentiator of the development of oral genres in Portuguese Language classes in High School.	CAMPOS, Valéria Hernandorena Monteagudo de Campos de; MATUDA, Fernanda Guinoza.

Source: Capes Journal Portal, 2020.

We observed, through Chart 3, that most of the articles found in the Journal Portal (Jan., 2020) are directly related to the use of podcasts in foreign language teaching (6 papers). We found 2 papers that discuss the uses of this tool in EaD, 1 in Geography teaching, 1 in History, 1 in Portuguese Language, 1 in early childhood education and 1 article with an approach focused on formal education in general. Although there is a more specific approach to disciplines, the number of approaches is reduced and the uses of podcasts in some curricular components are not addressed.

The 13 articles involved 29 authors, 64.2% (18) female and 35.7% (11) male. Only one (1) author has published more than one (1) article on podcast-edu uses. It is noteworthy that this result is practically the opposite in relation to the conclusion of stricto senso graduate studies, an aspect that, to some extent, reflects the existing gender inequalities in Brazil.

We were drawn to the fact that only two authors of stricto sensu graduate studies published an article on podcast-edu, being Eugênio Paccelli Aguiar Freire and Raphael de França e Silva. Eugênio Paccelli Aguiar Freire defended his doctoral thesis on the subject in 2013, in 2014 and 2015 he published two (2) articles, one (1) available at SciELO and another in the Indexer Periódicos Capes. Raphael de

França e Silva defended his master's thesis in 2019, a year that also published an (1) article on podcast-edu available in the Indexer Periódicos Capes. With this, we can infer that the "podcast-edu" is not part of the research agenda of researchers who at some point have been researching them. The fact that most researchers have attended a professional master's degree may, to some extent, explain this situation, since many who choose this type of master's degree do not necessarily seek the career of researcher.

Among the studies found, many ways of using podcasts as didactic-pedagogical resources are identified. Although not especially focused on teacher training, these help us to reflect on possible adaptations, exercise of the next section.

The uses of Podcast as didactic-pedagogical resources in teacher education and performance: brief assessment of possibilities.

Two questions need to be clarified before we move forward in the proposed discussion: i) the use of podcast in teaching practice cannot be confused, stricto sensu, as mere disassociated entertainment of teaching-learning and; ii) didactic-pedagogical resource is not confused with teaching-learning strategies.

Etymologically, the word "entertainment" is of Latin origin and comes from "enter" (between) and "tenere" (maintain), being tangentially of the idea of "keep attention or distract through a fun". Therefore, we do not adopt this word because it is not our proposal to limit the idea of fun. We do not exactly propose to entertain the students, in terms used in the teacher's room. We infer that it's not about "stalling" or "pretending you're teaching." We defend the use of this technology as a didactic-pedagogical resource that enhances the teaching-learning process and not as mere spectacularization; although classes do not need to be boring and not dynamic.

The relative cheapness of computer equipment and the expansion of internet access allowed substantive changes in the uses of TICs. At first, there was an increase in access to media discourses and later, changes in producer/consumer relations. The "release of the emission pole" of the discourses (KISCHINHEVSKY, 2006) allowed the recipients-consumers the possibility of being also producers and diffusers of messages/discourses; although with varying repercussions. These changes make room for innovations in the appropriation of TICs by the educational field, including the use of podcasts.

The feasibility of the production of podcasts is not a difficult task, because, as Primo (2005, p. 17) already highlighted "[...] it can be produced by a single person using only a microphone or digital recorder, a computer connected to the Internet and some server on the network for storage of their programs and the RSS resource." Currently it is possible to produce good podcasts using only one smartphone, there are several free applications for this purpose. Another advantage, highlighted by Primo (2005), regarding the podcast is the fact that the listener can stock several programs on his computer, MP3 player or mobile phone and can listen at the moment that suits him and as many times as he wishes. This advantage allows its reuse by the teacher at other times and classes, as well as being accumulated and/or saved by students for content review studies or made available on the Internet for free access (SAMPAIO-SILVA; BODART, 2015).

We should also observe the differences between didactic-pedagogical resource and didactic strategies. While the first refers to the "medium", the material, the "instrument" applied to the educational activity; the second refers to forms of educational uses, being part of the teaching methodology (SILVA, 2020). So, a resource (in this case, the podcast) can be used in several ways, multiplying ways to achieve the desired educational goals. Podcasts when produced by the teacher, for example, will have results different from those achieved in practices

where students are producers. Similarly, its potentialities and limitations vary according to its forms.

The podcast was used by Sampaio-Silva and Bodart (2018) as a strategy to seek for bring the contents of Sociology closer to the students experience and daily language. The teachers produced, in audio format, exhibition podcasts that merged the formality and informality in order to explain contents that are part of the discipline plan. The experience showed that the use of podcast-edu can make the contents more attractive and, consequently, arouse the student interest for discipline. The good result achieved by Sampaio-Silva and Bodart (2018) can be explained, to some extent, to the fact that they produced the episodes knowing the tastes of the students and meeting the objectives of their classes.

Souza (2016) proposed, from a workshop of podcast production aimed at teachers, to discuss the potential ities of the use of the podcast for the teaching of History in basic education. He emphasized that this resource can bring school, public and academic spaces closer together, enabling the teacher "to play a true convergence between these spaces" (SOUZA, 2016, p. 82). Moreover, the podcast can establish the dialogue between the knowledge taught in school and cyberspace (SOUZA, 2016), making such knowledge more accessible to others audiences (BARROS; MENTA, 2007).

Exploring the use of podcast for the teaching of Geography, Paixão (2016) identified, through an experiment, that in addition to this tool assisting in learning the contents of Geography and developing skills of using the TICs, the resource collaborated to reduce the shyness of students and learn to work collaboratively. In addition, it made skills and knowledge that the students previously had to be valued, mobilized and improved, which is of great importance in contemporary society. They highlighted Barros, Menta (2007) and Paixão (2016) that learning was not limited to students who are producers of podcasts, extending to

other students who had access to them. For Barros and Menta (2007) teacher and student, in the production of podcasts, can participate together in the elaboration of knowledge, enhancing the teaching-learning of those involved.

For Souza (2017) "the podcast departs from the idea of standardization of the process of knowledge construction, placing different ways to build thought" (SOUZA, 2017, p. 56-57), giving voice to students, allowing the visibility of their audio productions and enabling the sharing of experiences between students and teachers (BARROS; MENTA, 2007). Giving voice to historically silenced subjects in the teaching-learning process is fundamental to make school practices democratic. The podcast allows them to explore the students "place of speech", giving them conditions to express their interpretations of the social world from the place they occupy in society. As Souza (2017, p. 56) pointed out, "[...] the podcast can be a media vehicle for problematization of social and historical issues produced by the students themselves who permeate the school environment, bringing citizenship and giving voice to students in expressing their longings and ideas." The student production of podcasts awakens them to the social construction of discourse and its relationship with the ways of interpreting the social world. In the process of teacher training, experiencing these emotions as students is important for them to measure the importance of using this strategy in their future teaching practices.

Silva (2017), author of the only work to complete stricto sensu graduate courses aimed at the use of podcasts in teacher training, identified, from his experiment, that of the 15 teachers in training who participated in the "podcast course" taught by the author, 12 stated that they intend to use this tool in their future teaching practice. Contact with this tool awakened future teachers to the importance of appropriating the TICs.

Loures (2018) try to discuss the possibilities, advantages and disadvantages of the use of podcasts for the teaching of History in Elementary School. He pointed out that the production of this resource aroused the artistic creativity of the students and expanded their participation in classes and knowledge production, feeling more secure about the knowledge acquired and proud of their works. In the experience of Loures (2018), we also noticed that the podcast can stimulate the production of knowledge, making the student agent in this process, arousing his interest in the research.

The experimentation of the Podcast use: a report of experience in teacher education.

In this section we present an experiment carried out, in the second semester of 2019, in the discipline of Sociological Fundamentals of Education, in a class of Pedagogy course of the Federal University of Alagoas, composed of about eighteen (18) students, all female and predominantly aged between 19 and 25 years. We highlight that this research follows the ethical procedures established for scientific research in Human Sciences in Resolution Number 510, April 7th, 2016.

It is worth mentioning that the pedagogical use of a technology and its potentialities vary according to the profile of students, teacher, school culture, curriculum and others. This means that one experience can be successful in one reality and in another not, just as the experiences narrated here should not be taken as a replicable example without necessary adaptations to each reality. It is important to say that the arbitrary use of media in the classroom does not contribute to the analysis and investigation of content, arbitrariness prevents the student also from becoming a knowledge builder (BARRO; MENTA, 2007).

Experiment in a pedagogy class.

In the discipline Sociological Fundamentals of Education, taught in the Pedagogy course of the Federal University of Alagoas, in the second semester of 2019, we proposed to use the podcast as a didactic-pedagogical resource. As a didactic strategy we chose to work with the production of this sound resource, seeking to explore the educational potential existing in the production of podcasts instead of and only to turn to the presentation of episodes / programs produced by third parties.

The experience of using podcasts in the teaching-learning process with the students of the Pedagogy course occurred at two different moments, but in the same bimester. A first experiment in which all produced the sound resource on the same theme and a second experience, at the end of the semester, in each pair of students produced podcasts with diverse themes approaches in the discipline.

The first experience began with the presentation of the students about the characteristics of a podcast. They were asked to search at home to listen to some episodes available in online apps. In the following class, after a week, the students were organized in pairs to produce their podcasts, whose objective was to approach the theoretical contributions of Louis Althusser (1918-1990) to education studies. From this proposal, we believe that we have achieved what Primo (2005) indicated by highlighting the potential of the podcast: the passage of the interaction merely reactive to mutual interactions between students/producers.

The students received a script template for the production of audio content, which should have about 8 minutes. The roadmap indicated elements of mandatory approach. The production took place outside the class hour because it takes time and quiet environment. Students should send their productions to the teacher by e-mail to be heard by the class, in the next class.

The second experience took place in the same format, but the themes varied according to the authors studied throughout the course and the students organized themselves into groups of three or four people. The objective was to use the activity as a way to review the contents studied in the two bimesters before the evaluation of the discipline, and students can share their productions.

From these two experiences we observe many of the potentialities highlighted by the specialized literature. We noticed that the use of TICs corroborates with learning, because all groups presented a podcast with good content and performed well in the written evaluation. We noticed that even the shyest students were able to produce their audio program, because their production can take place in places where they felt more security or privacy, as reported by one of the producers. Another aspect observed refers to the conditions that the podcast creates for collaborative work, even though the class was marked by groups of students who did not interact in classes with other groups. We observed in the podcast content the presence of creativity and knowledge that the students already had, realizing that these were useful and were being valued in the academic activity. We also highlight that the student production caused the students/producers to value the results of their work. Part of the specialized literature (LOURES, 2018) indicates that podcasts can stimulate students to be interested in the production of knowledge; however, this potentiality could not be observed because it demands more lasting follow-up of the intellectual development of students, as well as it would be difficult to isolate a variable and test it as responsible for the stimulus. Having provided future teachers with the experimentation of this didactic resource made it possible to experience the potentialities and limitations of podcast-edu uses.

Students perception of the potentialities of the podcast as a didactic-pedagogical resource.

Students are important agents of the teaching-learning process. Therefore, we seek not to limit the evaluation of the use of podcasts as a didactic-pedagogical resource based only on our (teacher and monitor) experience and perceptions, but also to understand how students evaluate one of the types (authorial podcast) and use of such resource, either as students, or as future teachers.

Therefore, in our experiment, we sought to identify the perception of students regarding the positive and negative points of their use in teaching. To obtain data regarding this perception, an online questionnaire was made available through Google Forms for students to access from their mobile phones and answer it. The questionnaire consisted of nine (9) questions, which involved the existing previous knowledge about the media presented and the experience of producing a podcast. We also questioned about the positive or negative influence of the tool on learning the proposed content, about the possibility of using this tool in teaching-learning of other contents and at other levels of teaching. In other words, we explore the perception of students in relation to teacher education.

The class in which the experiment was developed consisted of eighteen (18) students. The request to answer the questionnaire was made available in the WhatsApp group of the discipline, in which almost all participated. Ten (10) students voluntarily agreed to answer the questionnaire. The answers provided us with collaborative elements to understand the student perception of the use of podcasts as a didactic-pedagogical resource. Data that we started to demonstrate and discuss.

As for previous knowledge of the podcast media, 80% had already heard of it. However, only 10% knew him as a didactic resource. Therefore, working the podcast in the classroom was, to a large extent, a novelty for

the class, which expanded the repertoire of resources that in the future can use in their teaching practices; since they were students of the Pedagogy course, thus teachers in training.

The experience of producing podcast was evaluated positively, with 60% of the respondents being evaluated as good and 40% as excellent. Among the respondents, 100% pointed out that producing a podcast enhanced learning about the subject dealt with in the classroom. Fact confirmed with the bimonthly evaluation applied in the discipline, and the contents addressed in the podcasts were the ones that had the best use, what dialogues with what Barros and Menta (2007) pondered in relation to the pedagogical potential of podcast-edu production.

We noticed that 100% of the respondents considered the podcast as a tool to be used in teaching-learning of other content and levels of teaching, which corroborates what Silva (2017) identified after a course taught to future teachers. In addition, 70% would use the podcast in their teaching practice and 30% answered that they might use it. These data reveal that this tool began to be considered by future teachers as a possibility to their professional practices, increasing the potential of teacher education.

About the answers to open questions, some reports stand out regarding the possible advantages of the use of podcasts as teaching resources. The advantages pointed out by the students are presented in Chart 4:

CHART 4: Students perspectives on the possible positive aspects of the using podcasts in Education.

Highlighted aspect	Summaries of the reports
Focus on content	"It allows us to devote more attention to the content, leading to further research on the subject."
Facilitated learning	"It facilitates the assimilation of content, because it is a media that can be consumed at any time, for free and with quality content, it can also pass your information more directly and with a clearer language, through chat, interviews and curiosities, facilitating understanding."
Contact with the content	"It leads the student to direct interaction with the subject."
Interactivity with the content	"Promotes the study of certain content interactively, through the use of technology."
Creativity and disinhibition	"The creative process involved in the production of the podcast is relevant, because in practice, with the preparation you get loose and still learn the subject."
Facilitated learning	"Is easier to understand the subject when you listen it, because it is like a teacher explaining."
Accessibility	"It can be used with blind students."
Deepening	"It develops creativity, the ability to speak to the public, assists in deepening studies to select the content of the podcast, among others."

Source: Authors (2020).

We noticed that the possible advantages of using podcast-edu were significantly recognized and highlighted by the students respondents. These aspects dialogue with several notes found in the literature on the subject. It is worth mentioning that, in addition to the notes of the advantages highlighted by the students, other advantages to be explored with practice were identified, such as the improvement of orality and writing, the sharing of content among students and the construction of self-esteem of the students. If we consider that the teacher's main instrument is his voice, producing podcasts during the teacher training process is an activity that can improve orality, including here the intonation of the voice, diction and dynamics of the uses of words and phrases, as presented by Sampaio-Silva (2019).

We noticed that there was recognition that the podcast enhances student autonomy, leading them to discover sources of research and make

decisions about the selection of information found. Silva (2017) also noted that the teachers in training, who participated in the podcast course, also highlighted the potentiating character of students autonomy.

We also seek to identify the perception of students regarding the disadvantages of using the podcast in the classroom. The answers obtained are synthesized and presented in Chart 5:

CHART 5: Students perspectives on the possible negative aspects of podcasts use in Education.

Highlighted aspect	Synthesis of reports
Technological limits	Absence of visual appeal.
Drab	Depending on the subject and how it is done it can become tiring to listen and monotonous.
Difficulty in production	Some students would not know how to produce.
Lack of interactivity	When listening to podcasts, it is not possible to ask questions.
Non-identification with the resource	The student may not identify with the didactics.
Difficulty in production	The student may feel tension and shame at having to produce a podcast.

Source: Authors (2020).

The notes of the students brought as disadvantages existing in the use of podcasts in education are pertinent and allow us to clarify two points: i) as a tool that can favor the teaching and learning of the contents, the podcast should not be the only instrument used in the classroom, but should be added to other alternatives, offering balance of activities, since some can identify with the didactic resource and others not; ii) another clarification refers to the tension and/or shame that may eventually be due to some of the students when having to produce audio, and for these cases it may be recommended that they be directed to participate in the production of scripts, the research of the contents and

subjects to be discussed in the episode, the editing of the recordings and the format of the program. It is important to create means that develop conditions of various skills and competences and the production of podcasts is promising for this. According to Souza (2006, p. 71-72):

> [The] teacher can involve students in different areas of the podcast recording process. Some students may manage recording equipment, others may edit while some take care, for example, of podcast feed dissemination.

In summary, by means of a brief state of the art, experiences reported in scientific journals and our experiment with future teachers, we can infer that there are many possibilities to work with the podcast in the classroom in order to favor the learning of the contents and collaborate with the training of future teachers. Our experiment, despite the limitation of the public involved, revealed that the students had the learning enhanced and are favorable to the use of this technology for the study and socialization of academic contents, evidencing that this tool should have its use considered by teachers in the set of viable and collaborative teaching resources to teaching-learning, as well as presenting itself as a collaborative practice to teacher formation.

Conclusion

In this article we discuss the potentialities of podcast uses as a teaching-learning strategy, focusing on teacher education. When we observe the scientific production on podcast-edu focused on these disciplines, we identified the scarcity of publications and the discontinuity of research by those who defended dissertations and theses on the subject, which does not mean that they do not use the resource in their practices. Although the volume of research is reduced, the notes of its didactic-pedagogical possibilities in formal education are significantly numerous, which shows to be a resource that deserves

attention from teachers at the time of their didactic choices. Our perception, from the action research experiment carried out in a pedagogy course class, made us optimistic about the uses of podcasts in the classroom, especially because it enhanced the learning of the content under study. The perception of teachers in training regarding the benefits of using podcasts was also positive.

Among the potentialities of the podcast-edu we highlight: the possibility of promoting a significant and satisfactory teaching-learning process, allow public spaces to be teaching spaces; enable the interconnection between school space and cyberspace, which expands the dissemination of knowledge; promote the development of several other skills and competencies beyond those directly related to the content studied, may become a strategy to reduce the shyness of the students, be an opportunity for them to learn to work collaboratively, to be a means of valuing the knowledge that the students already had, make room for different ways of building thought, provide students satisfaction and pride in their productions and make students as knowledge-producing agents. It is certain that the limitations of the use of podcasts also need to be considered by teachers when taking them as teaching resources.

The experiment, associated with the analysis of the perception of the participating teachers in training, allowed us to observe, at least in the case in question, that the use of educational podcasts in Pedagogy classes not only enhances the learning of students, but also presents them with possibilities of uses of this didactic resource that will make up their repertoire, which they can mobilize when they are teaching. We can infer that the multiple possibilities of the use of podcasts already indicated by the reduced literature reveal to be an object of research that needs to be privileged, as well as the need for other teaching experiences to be published and analyzed so that we can better understand the potentialities and limitations that by the limits of this

research were not unveiled. It seems to us that the use of technology in education has made even more evident the need to problematize the uses of educational tools such as podcast-edu so that its aspects, as a didactic resource, are exploited to the maximum in favor of the qualification of the teaching-learning process, whether in contexts of EaD or in face-to-face teaching.

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