Tell me about innovation… with innovation.

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Abstract. In the Innovation Management course at the Universidad Autónoma de Occidente (Cali, Colombia), the podcast is used as an educational resource to learn about and promote successful entrepreneurship cases in Latin America. The novelty lies in the fact that it is designed and produced by students from different engineering programs, a discipline that works on the innovation of projects but that is mainly studied with traditional methodologies. The learning activity is applied to a population of 44 students distributed in 2 class groups, with a working guide that invites students to develop the topic with the rigor of engineering to document the information (content), and at the same time, encourages students to exploit their originality with the audio setting (form). The results of the experience in the classroom are outstanding in the ratings of the grading rubric and positive in the expressions of the narrator students and students who listen to the digital medium.

Keywords: Educational innovation, grading rubrics, podcasting.

1. Introduction

Students enjoy listening to stories about the evolution of products or the birth of companies told by their professors, just as parents do with bedtime stories or journalists do with the news on the radio. What if we redefine the narrators in the classroom as students using the podcast as an educational resource?

The learning activity called "Tell Me About Innovation" explores the advantage that audio has, paradoxically, in what it does not possess: the image. That is replaced with imagination and critical thinking (UNESCO, 2020) in the training of engineering professionals with multimedia educational innovation resources.

2. Theoretical Framework

The use of podcasts in education has been explored in a number of initiatives. These initiatives have found that podcasts can be a motivating and effective way to learn, as they appeal to the technological habits of young people (Cea & Vicente, 2020). In the

case of engineering, a discipline that is often seen as being distant from socio-communicative concepts but is close to the use of ICT, learning can also be effectively achieved through audio. This is because podcasts can provide a way for students to engage in meaningful learning of the subject matter (Juárez et al., 2022).

3. Methodology

A guide to creating a podcast was applied to two groups in the Innovation Management course. The deliverables were two: a text (script) to validate the information search and an audio (podcast) of 5 minutes to be played in the classroom.

The study topic was related to innovative entrepreneurship in Latin America, as published by the Inter-American Development Bank. Students from seven engineering programs chose a case from five research areas to identify innovation methodologies and the factors of feasibility, viability, and desirability in engineering.

A grading rubric with five equivalent percentage scales was used. For the content-oriented component (Issue), the basic elements of the podcast were used: introduction, development, and conclusion. For the presentation-oriented component (Structure), sonic characteristics that a listener takes into account were used: likeability, narrative, and the validity of the information provided.

4. Results

The results of 44 students from the 2023-01 period are analyzed using a color scale in the grading rubric, where green tones have a higher frequency than red tones (see Table 1).

Table 1. Color scale with the frequency of Achievement of the learning activity.

Component / Achievement		100%	75%	50%	25%	0%
Issue	Introduction	42	2	0	0	0
	Development	39	4	1	0	0
	Conclusions	27	17	0	0	0
Structure	Sympathy	9	25	10	0	0
	Narrative	12	18	12	2	0
	Documentation	21	11	5	1	6

According to Table 1, in the 100% Achievement scale, the elements defined for background, Development (39/44), and Conclusions (27/44) have a higher frequency of achievement than the elements defined for form, Likeability (9/44) and Narration (12/44). That is, students had a better performance in the development of the analytical content of the case study, evident in the script, than in the setting and recording of their voice, evident in the audio production.

On the other hand, in the 75% Achievement scale and by complementation, the opposite happens: Development (4/44) and Conclusions (17/44) have a lower frequency than Likeability (25/44) and Narration (18/44). That is, students only achieved an acceptable performance in the form component, which is unusual in the engineering field, and outstanding in the background, which is common and recognized by students during their careers.

Table 1 also presents the rating of the structural elements. For the Introduction of the podcast, it was found that students had an outstanding performance in presenting the case study (42/44), but in the Documentation it was found that students did not take enough care in the script to consult more sources of information or to cite them correctly in their bibliography: only 11 students were in the 75% Achievement scale and 12 students were in the scales of a performance of less than or equal to 50%.

5. Discussion

The average grades are close, 4.1/5.0 in Group 03 (82%) and 4.375/5.0 (86%) in Group 05, which indicates that the grading rubric consistently recorded student achievement. Combined, the average for the two groups is 4.2/5.0 (84%), with 23 of 44 students scoring above this achievement percentage, an outstanding performance for a non-conventional learning activity in engineering education. This shows that a new relational environment is needed and used in the classroom, such as the podcast, which is based on communication, freedom, choice, protagonism, and involvement (Torres, 2011).

6. Conclusions

In this learning activity, based on an auditory medium, engineering students study successful cases of innovation in Latin America while making use of innovative media in their design and production. They share their conclusions through socio-academic interaction with their professor and classmates, mediated by digital tools.

Students must understand that the content and form of their engineering proposals are equally important in their training. Their technical and functional thinking should be maintained, of course, but they should also include innovative spaces and media in their projects that explore their own style and the sensations and emotions of users with all the senses of the human being.

7. Limitations and Future Research

One understandable limitation is the socialization of some student podcasts. Some students have a strong fear of public speaking, which is exacerbated in this academic activity by the fact that the classroom speakers amplify their voices.

A future research study should include peer evaluation based on both the understanding of the innovation components of the case study and the appreciation for the sonic style imposed by the podcast author.

8. References

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