

**Américo Junior Nunes da Silva
(Organizador)**



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**Américo Junior Nunes da Silva
(Organizador)**



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APRESENTAÇÃO

Fomos surpreendidos em 2020 pela pandemia do novo coronavírus. Nesse entremeio de suspensão de atividades e de distanciamento social, fomos levados a repensar as nossas relações e a forma de ver o mundo. Mesmo em 2021 e com a recente aprovação do uso emergencial das vacinas no Brasil, seguimos um distanciamento permeado por angústias e incertezas: como será o mundo a partir de agora? Quais as implicações do contexto pandêmico para as questões sociais, sobretudo para a Educação no Brasil? Que políticas públicas são e serão pensadas a partir de agora em nosso país?

E é nesse lugar histórico de busca de respostas para as inúmeras problemáticas postas nesse período que estão os autores e autoras que compõe esse livro. Sabemos, partindo do que nos apresentaram Silva, Nery e Nogueira (2020, p. 100), que as circunstâncias do contexto pandêmico são propícias e oportunas para construção de reflexões sobre os diversos “aspectos relativos à fragilidade humana e ao seu processo de ser e estar no mundo, que perpassam por questões culturais, educacionais, históricas, ideológicas e políticas”. Essa pandemia, ainda segundo os autores, fez emergir uma infinidade de problemas sociais, necessitando assim, de constantes lutas pelo cumprimento dos direitos de todos.

Esse movimento sistemático de olhar para as diversas problemáticas postas na contemporaneidade, faz desencadear o que o que Santos (2020, p. 10) chamou de “[...] claridade pandêmica”, que é quando um aspecto da crise faz emergir outros problemas, como os relacionados à sociedade civil, ao Estado e as políticas públicas, por exemplo. É esse, ainda segundo o autor, um momento catalisador de mudanças sociais. Direcionar e ampliar o olhar em busca de soluções para os inúmeros problemas postos pela contemporaneidade, portanto, é um desafio, aceito por muitas professoras e professores pesquisadores brasileiros, como os compõe esse livro.

Destarte, as discussões empreendidas nesta obra, “**Educação: Sociedade Civil, Estado e Políticas Educacionais**”, por terem a Educação como foco, como o próprio título sugere, torna-se um espaço oportuno de discussões e (re)pensar da Educação, considerando os diversos elementos e fatores que a inter cruzam. Reúne-se aqui, portanto, um conjunto de textos originados de autores e autoras de diferentes estados brasileiros e países.

Os autores e autoras que constroem essa obra são estudantes, professoras e professores pesquisadores, especialistas, mestres, mestras, doutores ou doutoras que, muitos, partindo de sua práxis, buscam novos olhares a problemáticas cotidianas que os mobilizam. Esse movimento de socializar uma pesquisa ou experiência cria um movimento pendular que, pela mobilização dos autores/autoras e discussões por eles e elas empreendidas, mobilizam-se também os leitores/leitoras e os incentiva a reinventarem

os seus fazeres pedagógicos e, conseqüentemente, a educação brasileira. Nessa direção, portanto, desejamos a todos e todas uma instigante e provocativa leitura!

Américo Junior Nunes da Silva

REFERÊNCIAS

SILVA, A. J. N. DA; NERY, ÉRICA S. S.; NOGUEIRA, C. A. Formação, tecnologia e inclusão: o professor que ensina matemática no “novo normal”. **Plurais Revista Multidisciplinar**, v. 5, n. 2, p. 97-118, 18 ago. 2020.

SANTOS, B. S. **A cruel pedagogia do vírus**. Coimbra: Almedina, 2020.

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CAPÍTULO 9

REAL-LIFE-ALIKE TEACHING IN INFORMATION AND COMMUNICATIONS TECHNOLOGIES (ICT) WITHIN THE EUROPEAN HIGHER EDUCATION AREA (EHEA)

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ABSTRACT: This work presents different complementary activities carried out to improve the learning process of concepts related to Telecommunication Engineering. In particular, it describes the conduct of symposia within the activities of the subject. These symposia recreate in the most realistic way possible the submission, review and presentation of technical papers at

a scientific/professional conference. Another complementary activity that students carry out is the elaboration of an encyclopedia in “wiki” format to which they all contribute collaboratively. In addition, to emphasize the practical application of the knowledge acquired in the subject, visits to companies in the region are organized. By performing these activities, students work on competencies such as teamwork, the development of critical and thoughtful thinking, the ability to manage information and time and the ability to communicate concepts in a clear and organized manner, adapting the language according to the type of audience.

KEYWORDS: Aplicability, competition, motivation, symposium.

ENSINO COMO NA VIDA REAL EM TECNOLOGIAS DE INFORMAÇÃO E COMUNICAÇÃO (TIC) DENTRO DO ESPAÇO EUROPEU DE ENSINO SUPERIOR (EEES)

RESUMO: Este trabalho apresenta diferentes atividades complementares realizadas para aprimorar o processo de aprendizagem de conceitos relacionados à Engenharia de Telecomunicações. Em particular, descreve a conduta de simpósios dentro das atividades do sujeito. Esses simpósios recriam da forma mais realista possível o envio, revisão e apresentação de trabalhos técnicos em um congresso científico/profissional. Outra atividade complementar que os alunos realizam é a elaboração de uma enciclopédia em formato “wiki” para a qual todos contribuem de forma colaborativa. Além

disso, para enfatizar a aplicação prática dos conhecimentos adquiridos no tema, estão organizadas visitas a empresas da região. Ao realizar essas atividades, os alunos trabalham em competências como o trabalho em equipe, o desenvolvimento do pensamento crítico e pensativo, a capacidade de gerenciar informações e tempo e a capacidade de comunicar conceitos de forma clara e ordenada, adaptando a linguagem de acordo com o tipo de público.

PALAVRAS-CHAVE: Aplicabilidade, competência, motivação, simpósio.

1 | INTRODUCTION

The implementation of the Bologna plan was a before and after in the Spanish university system. Unifying the educational criteria and homologating degrees throughout Europe, granting the university with autonomy for the design of degrees or basing learning on the acquisition of skills, adapting the system to the needs of today's society, provided Spanish universities with a new scenario to which they have been progressively adapted.

Due to the high theoretical content of some subjects in the Degree of Telecommunication Technology Engineering, a vast majority of the teachers maintain a teaching scheme based on master classes and laboratory practices. However, there are research studies that show that with the use of such traditional methodologies the student is not able to acquire the general competencies (MARTÍN PEÑA et al., 2011).

It is precisely in the use of these conventional methodologies that students are a passive element in the learning process. This results in a lower level of motivation and enthusiasm by not appreciating the obvious practical application of the knowledge that is acquired in the course of the subject. In order to engage and motivate students, several institutions and teachers are adopting new methodologies that can be adapted to studies in the area of engineering. These new methodologies include project-based learning (ESTRUCH and SILVA, 2006) and the inverted classroom (BISHOP and VERLEGER, 2013; ARCOS et al. 2017).

In line with these new teaching methodologies, this work presents a series of complementary activities that have been developed and implemented in the Studies of Engineering degree of Telecommunication Technologies. On the one hand, during the academic period of the semester a series of symposia are organized in which students must submit a work in scientific article format and give an oral presentation. With this, students should show the ability to search, organize, synthesize, assimilate and present work-related information and concepts. Another activity is the development of a collaborative "encyclopedia" using the Moodle platform. Each entry of this encyclopedia is enriched and corrected by the students themselves under the supervision of the teachers of the subject that guarantee the rigor of the published information.

Finally, taking into account the future insertion of the students into the labor market and to make clear the practical application of the concepts and content seen in class, several visits to ICT companies located in the region are scheduled. During these visits,

students discover that the covered topics have real-life application, the challenges they will face in the practical exercise of engineering and also have the opportunity to talk with professionals in the sector.

By carrying out these activities, students go from mere passive recipients of knowledge to taking a more active role while working on cross-cutting skills necessary for the future exercise of the profession.

2 | CONTEXT

The implementation of the proposed complementary activities has been carried out in the subject “Communication Systems” of third year of the Degree of Telecommunication Technology Engineering. The subject is taught in the second semester (February to May) and is part of the subject Telecommunication Systems in the mention of Telecommunication Systems.

With the adaptation of the old Telecommunication Engineering curriculum to the new European Higher Education Area (EHEA), new content was generated along with others that were previously covered in different subjects and are now covered in the subject “Communications Systems”. In addition to the generic and specific competencies to be covered by the subject, cross-cutting competencies are also worked. In particular, with the activities described in this work, the student is intended to achieve:

- Assimilate matter and strengthen the theoretical knowledge seen in the classroom.
- Extract and discern, using the acquired knowledge, relevant information provided in a real or work environment for its use.
- Familiarize yourself with the structure and contents of a scientific article. Search for reliable and contrasting information related to your area.
- Ability to present concepts in public in a clear and organized way.
- Search for telecommunications standards and standards.

These competencies are developed through the student’s involvement in the learning process (MINGORANCE and CALVO, 2013). One of the main objectives of the development of these activities is to increase the level of motivation of students for an improvement in the assimilation of concepts of the subject. The low motivation with which some students start the subject may be due to their perception of it by the number and complexity of concepts that are addressed. That is why throughout the subject these activities are alternated to maintain the level of motivation and interest of the students.

In line with the EHEA, the subject is intended to be evaluated with the continuous evaluation method. They encourage feedback from students, correcting mistakes and

improving the learning process (SANMARTÍ, 2007; GALLARDO and MONTOLIO, 2011). The work plan of this subject also covers other activities that allow to acquire, strengthen and evaluate the contents seen in class, such as laboratory practices and classroom internships. These activities have been continuously and uninterrupted since 2013/2014. The average number of students per class is around 25 students. The latest experience related to these activities has been carried out with a total of 23 students for the 2018/2019 academic year.

3 | DESCRIPTION

As mentioned in the previous sections, in the course of the semester the theoretical and practical classes are complemented by a series of new activities. These activities are explained below.

3.1 Organization of symposia

One of the professional activities carried out in both industry, universities and research centers is the participation in symposia or conferences. These events usually present the latest advances in all areas of knowledge, as well as the opportunity to interact with professionals in the sector and expand and establish new professional contacts, hence their relevance.

This subject proposes the realization of a reduced version of a symposium. In this way students face the task of writing a technical/scientific article with what this implies, (bibliographic search, synthesis capacity, oral and written communication capacity, among others). Since recreating all the conditions of a large-scale congress is not feasible because of the number of students and other logistical limitations, students' activities are limited to writing a scientific article and its oral presentation.

To achieve the specified objectives, two symposia related to the contents addressed in the subject are planned. These symposia are advertised at the Higher Technical School of Industrial and Telecommunication Engineers (ETSIT) and attendance is free for the public. Symposia are temporarily spaced along the semester. Participants or speakers will be the students who must prepare a manuscript/presentation related to the topic of the congress. The activity is planned so that each student participates actively and individually as a speaker in one of the symposia throughout the course.

When performing the above-mentioned distribution, it is ensured that:

- Students have sufficient time to prepare the work without overloading them with activities, (4 hours of preparation).
- The syllabus of the subject is advanced and the main concepts have already been explained in class in advance, which serves as the basis for the preparation of the work.

- In addition, it is possible to include approximately once a month an activity different from a conventional theoretical class in which students have an active role and the concepts can be consolidated and knowledge expanded.

As an example, only the last year 2018/2019 has been held two symposia, with the following themes and calendar: “Passive Components” (March 11st) and “Active Components” (April 15th). As indicated, each student must carry out the two works, corresponding to each symposium, and present only one of them orally. One half of the students present their work at the first symposium and the other half at the second symposium. Students have the possibility to choose which of the two symposia participates (participation in one of them is mandatory).

3.1.1 Preparation of manuscripts

As in scientific conferences, manuscripts must be delivered on a schedule. There is a deadline for submitting the work and a format or template to which participants must adhere. Both the template and the key dates are published through the Moodle platform. This same platform will be used for submitting papers and communicating the result of their review.

To avoid repetition of work and make the symposium more beneficial in terms of variety of content presented, each student is given a topic or concept to develop. Assigning topics on which students must perform the work can be done in different ways. At this point several formulas have been applied, alternating them in the different academic years:

1. Provide the student with a scientific article related to a topic (Table I). The student must relate the article to the subject seen in class, expand the information with a more exhaustive bibliographic search and present the results of his research in a document. Generally, the sources of information they should work with are in English. It is important to note that a literal translation is not sought, but to synthesize, organize, relate and above all expand the information regarding the topic.
2. Assign each student a topic, on which they should look for related papers in specialized databases, sticking to some aspect such as state of the art, year of publication or origins (first articles published on the subject), multidisciplinary applications, etc.
3. Assign each student a concept seen in class that must be developed and expanded using reliable literature and presented together with their own conclusions in the form of a scientific article, with their corresponding sections (Abstract, Introduction, Development, Conclusions, Acknowledgements and References).
4. Assign each student a specific component (passive or active) of the RF and microwave fields. The study of these components is an important part of the subject as they make up the most complex communications systems. Students have to search for information about manufacturers, specifications, prices, functionality, etc. All this should be presented in an organized, clear and concise manner in the work presented.

Table I shows an example of some of the topics covered at the “Passive Components” symposium for the 2018/2019 academic year. In this case, each student is provided with a scientific article as the basis of their work.

A MMIC Compatible Coupled Line Structure that uses Embedded Microstrip to Achieve Extremely Tight Couplings
K/Ka Band Coplanar Waveguide Directional Couplers Using a three-Metal-Level MMIC Process
Couplings of Microstrip Square Open-Loop Resonators for Cross-Coupled Planar Microwave Filters
Distributed MEMS True-Time Delay Phase Shifters and Wide-Band Switches
Distributed Analog Phase Shifters with Low Insertion Loss
Design of 10dB 90° branch line coupler using microstrip line with defected ground structure

Table I. Examples of topics proposed for the “Passive Components” symposium

3.1.2 *Review process*

The review of the work is carried out by the teacher or teachers of the subject as if it were a peer review. The quality is valued in the writing and content, the organization, the research work (bibliographic sources that the student uses), the conclusions and the personal interpretation of the basic ideas in which the work is based. They are told the result of the review and qualification through Moodle suggesting changes, where necessary, so that they can improve the work and consequently the qualification.

The technical program that summarizes presentations and authors (speakers) is published and disseminated through the Moodle platform. Depending on the topics to be covered, the program is organized into sessions. Figure 1, shows the technical program of the 17th National Symposium of the Subject Communications Systems held on April 15, 2019 whose theme “Active Components” was structured in three different sessions: “Amplifiers”, “Mixers” and “Oscillators”.

XVII National Symposium of Communication Systems (NSCS)



The University of Cantabria and its Department of Communications Engineering are pleased to invite you to the XVII National Symposium of the subject Communications Systems. CS year 2019, to be held in the Grade Room of the Higher Technical School of Industrial and Telecommunication Engineers.

The SC brings together students from the field of Information and Communications Technologies in order to present their research and technological development work. The main objective of the Symposium is to present the work on active components carried out by students during the 2018/2019 academic year in the subject Communications Systems of the Degree in Telecommunication Technologies Engineering, as well as to promote collaboration between students and training in oral presentations of research work.

Technical program

MONDAY, APRIL 15 th , 2019		
Active Components		
17:30 17:35	Presentation	
17:35 18:15	Session I "Amplifiers"	Two Port power gain (Author:XXX)
		Conditional and Unconditional Stability (Author: XXX)
		Minimum Noise Amplifier Design (Author: XXX)
		Nonlinear behaviour of a power amplifier (Author: XXX)
18:15 18:45	Session II "Mixers"	Mixer mechanism explanation (Author: XXX)
		Power response on a Mixer. Definition P1dB, TOI (Author:XXX)
		Double Balanced Mixer benefits (Author: XXX)
		Mixer mechanism explanation (Author: XXX)
18:45 19:30	Session III "Oscillators"	Voltage Controlled Oscillators (VCO).(Author: XXX)
		Phase Noise definitions on oscillators (Author: XXX)
		Oscillator Characterization and Testing (Author: XXX)
		Tank circuits for Oscillators, definition and some examples Autora: XXX

Figure 1. Technical Program for the Symposium on "Active Components" held on April 15th, 2019. The technical program is disseminated and advertised through the Moodle app and with the sticking of posters on the bulletin board of the ETSIIT and the Department of Communications Engineering.

3.1.3 Presentation of the works

Two consecutive hours of class are used for the symposia, ideally with a 10-minute break if the number of sessions and presentations allows it in the time available. Sessions are sought to be homogeneous, grouping them for example in the case of this subject by types of components, origins, state of art... Etc. According to the number of students (23 in the 2018/2019 academic year), two symposia of 11 and 12 presentations were held respectively. Each presentation is scheduled for a duration of 8 minutes with a question time of approximately 2 minutes. Students should use a presentation tool (e.g. PowerPoint) as help and visual support.

As chair and co-chair of the session, two teachers will present to the speakers and give way to Question Time in which everyone who attends as an audience can participate. Question Time also serves to help the teacher point out or correct any errors regarding the content that may have been made in the exhibition. To give greater solemnity to the event and motivate students, symposia are usually held in the university's ETSIIT Grade Room, providing students with even an identification card as a participant or speaker of the symposium (Figure 2).



Figure 2. Example of speaker ID badge.

3.1.4 Survey of students

After each presentation is completed, students fill out an anonymous survey that evaluates their classmate's oral exposure. At the start of the session, the chair of the session emphasizes the goal of the survey that is nothing more than to help improve colleagues by being most sincere and honest, setting aside favoritism and antipathies.

As shown in Figure 3, the survey should assess:

- Clarity in exposure. Considering aspects such as speed of speech, the use of appropriate vocabulary, posture, gestures and body expression.
- The organization of the contents and presentation of the information. Whether it is done in an orderly and logical way or in a chaotic way.
- The domain of the exposed content.

The teacher (chair of the session) then collects the surveys and hands them over to the speaker. Anonymity facilitates greater sincerity and objectivity in the replies and thus the speaker can correct and avoid errors in future presentations.





CATEGORY				
	75% - 100%	50% - 75%	25% - 50%	0 - 25%
Communication and clarity	<p>Speak slowly and with great clarity.</p> <p>Use audience-appropriate vocabulary.</p> <p>Increase your audience's vocabulary by defining words that might be new to your audience.</p> <p>When speaking posture and gesture are very suitable. Look at all the teammates with total naturalness.</p> <p>The volume is high enough 100% of the time.</p>	<p>Most of the time, he/she speaks slowly and clearly.</p> <p>Use audience-appropriate vocabulary.</p> <p>It includes 1-2 words that might be new to most of the audience, but you don't define them.</p> <p>Most of the time posture and gesture are appropriate and almost always look at colleagues as he speaks.</p> <p>The volume is high enough 90% of the time</p>	<p>Sometimes he speaks slowly and clearly, but sometimes he accelerates and is misunderstood.</p> <p>Use audience-appropriate vocabulary.</p> <p>It does not include vocabulary that could be new to the audience.</p> <p>Sometimes, it maintains the proper posture and gesture, and sometimes it doesn't.</p> <p>Sometimes he looks at his teammates.</p> <p>The volume is high enough 70% of the time</p>	<p>Speak fast or stop too much when talking.</p> <p>Besides, his pronunciation isn't good.</p> <p>Use several (5 or more) words or phrases that are not understood by the audience</p> <p>t does not maintain the posture and gesture typical of an oral exposure and, most of the time, does not look at its peers.</p> <p>The volume is often too weak to be heard by all members of the audience</p>
40%				
Organization	<p>Clear, with logical and effective transitions.</p> <p>The information is presented logically and consistently that the audience can easily follow.</p> <p>Clear and effective conclusion.</p>	<p>Most of the information is presented logically and generally well organized, but better transitions from one idea to another are needed.</p>	<p>Proper organization, but slack. Not always clear.</p> <p>Lack of clear connections between the parts of the presentation, the parties seem isolated from each other.</p> <p>The audience has difficulty following the presentation.</p>	<p>Poorly structured and difficult to understand.</p> <p>Disorganized.</p> <p>There is no logical sequence in the information.</p> <p>Presentation does not flow well, with rambling sentences.</p> <p>Development of the topic is confusing and without apparent logic.</p>
30%				
Contents	<p>Demonstrate a complete understanding of the topic</p>	<p>Demonstrate a good understanding of the subject.</p>	<p>Demonstrates a good understanding of parts of the topic.</p>	<p>He/she doesn't seem to understand the subject very well.</p>
30%				

Figure 3. Anonymous survey to assess the oral presentation of the speakers by colleagues.

3.2 Elaboration of an encyclopedia in “wiki” format

Another of the activities carried out throughout the course is the elaboration of an encyclopedia in “wiki” format. In it, students participate as part of a group to encourage peer interaction and teamwork. For this group assignment, students are grouped by sweepstakes or alphabetical order. For the 2018/2019 academic year, 4 groups of 5/6 students were formed. This makes students relate and interact in a heterogeneous group of peers and not just those with greater affinity or friendship.

For the elaboration of the encyclopedia, each group is assigned a novel and topical topic related to the subject and the telecommunications sector. In the 2018/2019 academic year the generic theme was “the State of art of 5G communications systems”, of very recent appearance in the market and whose implementation in Spain has occurred in 2019. Each group had to focus on a different aspect of these systems, for example, 5G for mobile communications, devices for this standard, 5G for IoT... Etc.

The Moodle platform is used to develop the encyclopedia. In this way the teacher knows at all times, what each student contributes and the degree of involvement he has in the elaboration of the contents, facilitating his qualification. Figure 4 shows a screenshot of a part of the encyclopedia prepared by one of the groups.



Figure 4. Screenshot of excerpt from students' encyclopedia on state of the art of 5G communications systems.

In relation to this activity, an oral presentation or talk is organized on the subject in which all members of each group must present a part of the work (about 4 minutes per person). The presentation lasts a total of 20 minutes. They are told which section each should expose just before the presentation. This assignment is made by lot and thus promotes that all members of the group know in depth the content of the work and not a single part. In the 2018/2019 academic year, the talk took place on May 20 with the title (“State of the Art of 5G Communications Systems”). Like symposia, the activity is advertised through the Moodle platform and through the distribution of posters in the ETSIIT and the university’s Communications Engineering department.

At the end of the talk, students put the different jobs to the vote, choosing the one they liked the most. The winning team is awarded a prize, which are donations from companies in the sector. They are usually small objects (pens, keychains...) like those obtained in the exhibition of exhibitors in scientific conferences.

3.3 Visits to companies in the sector in the region

As a last activity, a couple of visits to companies in the telecommunications sector are organized within the region. The main purpose is for students to relate what they have learned in class to the labor world and its practical application and to get an idea of what their future work environment might look like. These visits are usually organized at the end of the semester, when most of the intended content has already been seen and during school hours so that most of the students can attend. Each visit usually lasts around 1 hour.

The choice of companies visited in this activity is clearly influenced by their activity and relationship with the contents taught in the subject. The 2018/2019 visits have chosen

two companies in the region dedicated to the development of microwave and RF systems and components for space applications, satellite communications, defense and data transmission and reception.

On these visits, students can check on-site all the stages/phases that any product goes through before it is launched to the market. These stages include design, manufacturing, assembly, experimental characterization, evaluation and conformity tests, taking into account technical, regulatory and quality management criteria. People who serve as guides during student visits have generally been alumni of the university and share their experience in the transition between the university and the labor market.

4 | RESULTS

These activities have been carried out in the subject of “Communications Systems” since the 2013/2014 academic year in which the subject was implemented in the Degree of Engineering of Telecommunication Technologies, with an average of two symposia per course and a talk focused on the contents collected in the encyclopedia “wiki” that is developed as a team. In all the years the acceptance and participation by the students has been very good. The quality of the work is relatively high as can be seen in Figure 5, which shows the results of the average grades over the last 6 years.

Given the new nature of this subject, we do not have any previous data to compare with the results obtained. To analyze its impact, a comparison of the average grades of the final exam and the mean of the three notes of the work carried out is presented (Figure 5). Optimal completion of work should have a positive impact on the final exam, as it helps students assimilate subject matter and strengthen knowledge. Figure 5, shows that there is a clear correlation between the two data in consecutive academic courses. The quality of the work is reflected in the note of the final examination, coinciding with the years in which the work has been of higher (lower) quality with a better (worse) average test grade.

One of the most notorious results that has been evidenced from the realization of these activities is the improvement in the learning results of laboratory practices. Having become familiar with different components, their specifications and characteristics, students perform the internships with greater ease. In group laboratory practices, it has been observed that the student who has more knowledge about a certain component, because he has prepared a presentation on the subject, exercises tutoring of his peers spontaneously. In the following practices, this role changes among peers as many RF/microwave components are covered during the practices. Figure 5 also shows a clear correlation between the average grade of practices and the average of the three notes of the work carried out.

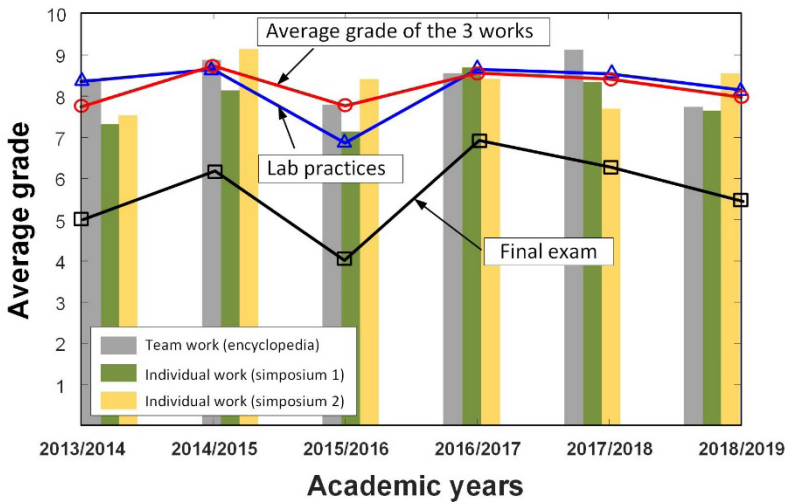


Figure 5. Average grade for individual and team works throughout the consecutive academic years. Comparison of the average grade of the final exam, the laboratory practices and the average grade of the three works carried out during the semester.

Figure 6, shows the percentages of students which passed and failed the final exam throughout the consecutive academic courses. In the years in which the work was of a higher quality, there were 100% approved in the final exam, while the years with the lowest quality in the work the percentage of students who did not pass the final exam is higher. Finally, it should be noted that the percentage of subscribed students tends to decrease as these activities improve over the years, showing their effectiveness in the learning process.

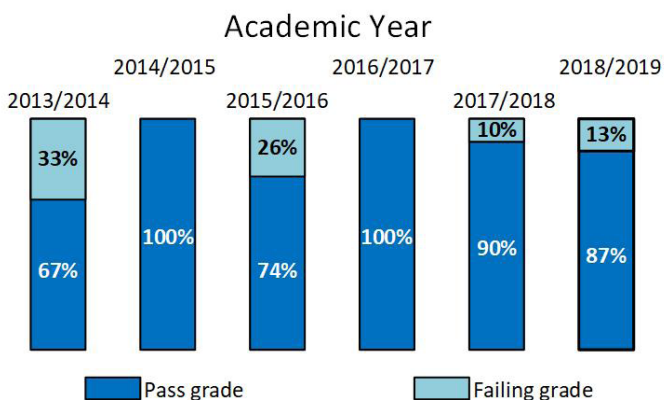


Figure 6. Relationship of students that passed and failed the final exam of the subject.

Visits to companies in the ICT sector are usually one of the activities that students like the most. Seeing the facilities, infrastructures, production and way of working of two companies that are directly related to the knowledge covered in the subject motivates them and generates curiosity. In addition, many of the people who work in those companies and those in charge of guiding the visit are alumni of the school, which makes students easily empathize with them.

Students generally value all of these activities in a positive way and have communicated this directly to teachers by comments over the course of the class or indirectly through the quality surveys they conduct. This feedback between the teacher and the student is used to improve the activities of the following courses.

5 | CONCLUSIONS

In this work, a number of complementary activities have been presented to improve the learning of concepts related to Telecommunication Engineering. These activities have been implemented in the subject of “Communication Systems” of the Studies of Engineering of Telecommunication Technologies for six years. With them, in addition to working the competencies of their area of knowledge and cross-cutting competencies of great importance for the integral training of students and their subsequent insertion into the labor market, we seek to increase the motivation of students, making them actively participate in the development of the subject.

The realization of symposia is an activity in which students participate actively and that results in an improvement of results at different levels. However, it should be noted that due to temporary limitations and academic load, in principle, it is recommended to apply them in classes with a not very high number of students.

Given the interdisciplinary nature of the cross-cutting competences that are acquired with the realization of the activities set out herein, we believe that they are suitable for other subjects of similar content of the degree. This methodology is best suited to subjects of the last courses of the degree (3rd and 4th), given the proximity to the labor world and the maturity of the students.

REFERENCES

ARCOS, A.; ARCOS, J.; FERNÁNDEZ CENTENO, M.; GONZÁLEZ-GALINDO, J.; GORDO MONSÓ, C.; MANGET, C.; et al. **Aula Invertida en la Ingeniería del Terreno Asistida por Ordenador**, IV Congreso Internacional sobre Aprendizaje, Innovación y Competitividad (pp.1-6). Zaragoza, España. 2017.

BISHOP, J. L., and VERLEGER, M. A. **The flipped classroom: A survey of the research**. Proceeding of the 120th ASEE Annual Conference & Exposition, Atlanta, GA. 30 (9). 2013.

ESTRUCH, V., and SILVA, J. **Aprendizaje basado en proyectos en la carrera de Ingeniería Informática**. Actas XII Jornadas de Enseñanza universitaria de la Informática. 2006

GALLARDO, E. and MONTOLIO, D. ¿Existe relación entre la evaluación continua y los resultados de los alumnos? Revista electrónica sobre la enseñanza de la Economía Pública, 8, 63-79. 2011.

MARTÍN PEÑA, M. L.; DÍAZ GARRIDO, E.; CASTILLO GUTIÉRREZ- MATURANA, B. and DEL BARRIO IZQUIERDO, L. **Estudio comparativo de cambios metodológicos y percepción del alumno en la materia de dirección de producción y operaciones para la adquisición de competencias en el proceso de adaptación al EEES.** Revista de Formación e Innovación Educativa Universitaria, 4 (2), 126-144. 2011.

MINGORANCE, C. and CALVO, A. **Los resultados de los estudiantes en un proceso de evaluación con metodologías distintas.** Revista de Investigación Educativa, 31 (1), 275-293. 2013.

SANMARTÍ, N. **10 Ideas Clave: Evaluar para aprender. Col. Ideas clave, 1.** Barcelona, España: Ed. Graó. 2007.

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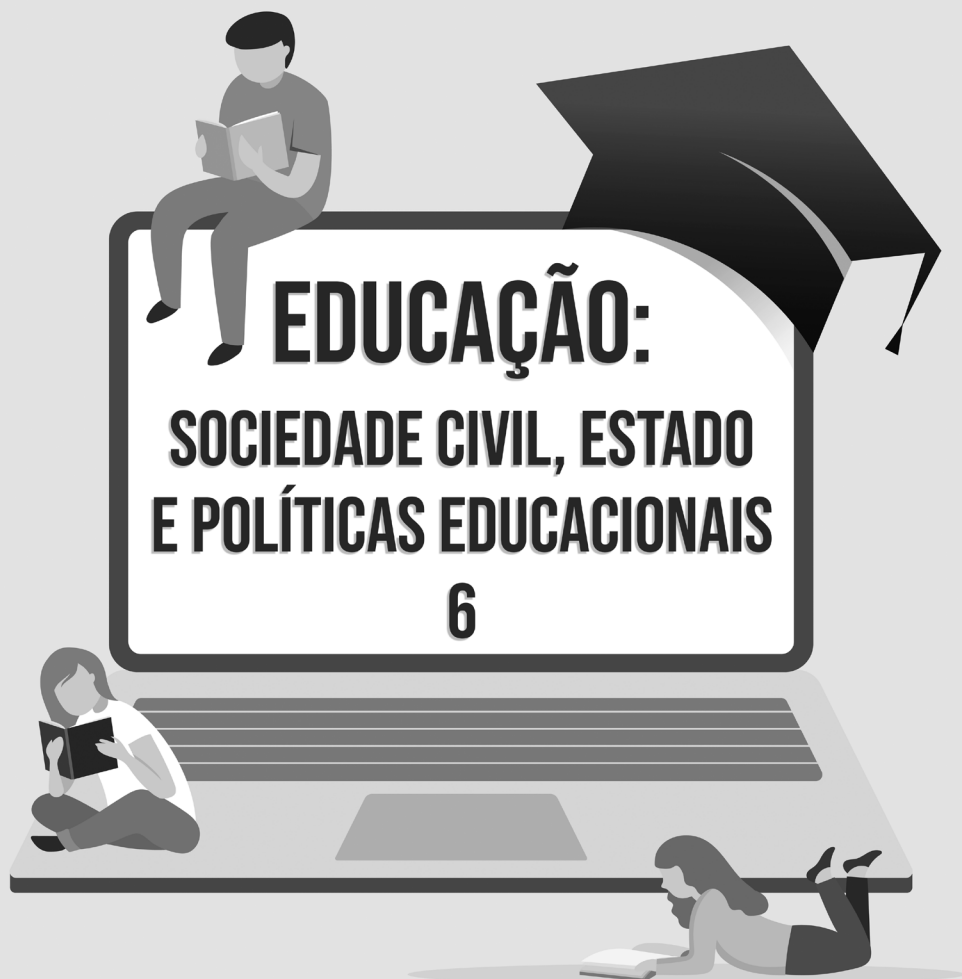
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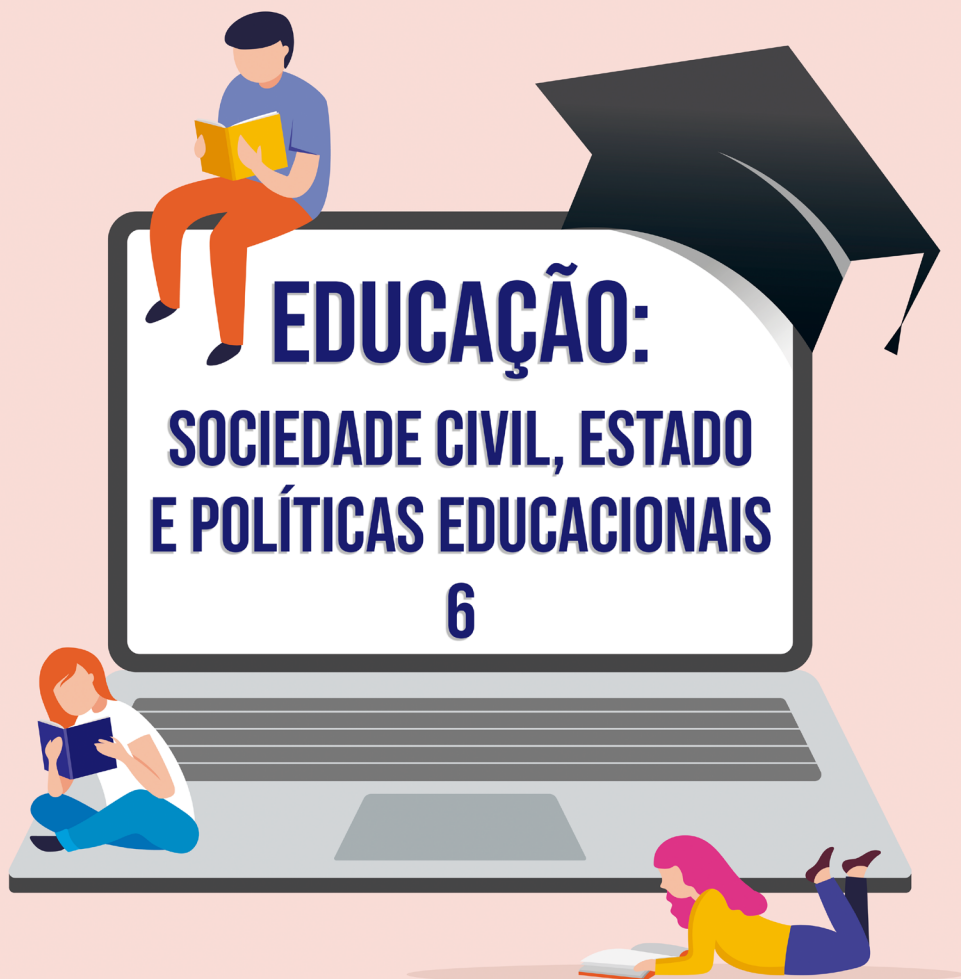
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