UNIVERSIDAD
COMPLUTENSE
MADRID

Innovation project

Academic year 2017/2018

Project number: 281

NON-FACE-TO-FACE TEACHING OF ORAL PATHOLOGY THROUGH PREVIOUS PRESENTATION OF SCIENTIFIC ARTICLES IN ENGLISH

Rosa María López-Pintor Muñoz

Facultad de Odontología

Departamento de Especialidades Clínicas Odontológicas

1. **Proposed objectives in the project presentation**

The proposed objectives when we presented our innovation project were as follows:

1. Prepare a file with articles, mainly bibliographic reviews, in English, and when possible published in journals with an impact factor (JCR) about each of the subject areas of Oral Medical Pathology at a third year dental student level. This objective would show students a review of the knowledge acquired about the many thematic areas and English vocabulary in relation to the subject, and it would give the student an in depth vision of what he/she has learned about the scientific evidence shown of the subject throughout the world.

2. Develop a questionnaire or evaluation matrix to assess if the student has been able to understand the document and show knowledge obtained when reading and understanding the work.

3. Evaluate if exposing the student to this learning method improves its learning experience, and comparing it to others who do not receive the same experience.

4. Facilitate a life-long learning experience by contributing keywords in English to search for new scientific articles and clinical cases.

5. Awaken the student´s curiosity and expand their knowledge.

2. **Achieved goals**

We will comment on the objectives achieved in each of the sections:

1. *Prepare a file with articles, mainly bibliographic reviews, in English and if possible published in journals with an impact factor (JCR) about each of the subject areas within Oral Medical Pathology at a Third year dental school level.*
   We have compiled a file with 10 review articles indexed in Pubmed, most of them published in impact journals (JCR), which were able to summarize the different competences of a third year course level in Oral Medical Pathology. In some cases we have not been able to find articles that will synthesize the information in a proper manner for students as it is the case of intra and extraoral exploration, bacterial infections of the oral mucosa, exophytic lesions (tumors and pseudotumors) and dystrophies and bone dysplasias. The articles included, as well as the main themes, are as follows:

   • Meleti M, Vescovi P, Mooi WJ, van der Wall I. Pigmented lesions of the oral mucosa and perioral tissues: a flow-chart for the diagnosis and some recommendations for the management. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2008; 105:606-16. This article reviews the most frequent dyschromias of the oral mucosa.

- Yuan A, Woo SB. Adverse drug events in the oral cavity. Oral Surg Oral Med Oral Pathol Oral Radiol 2015;119: 35-47. This article includes the possible allergic symptoms that affect the oral mucosa and its etiology.
- Fatahzadeh M. Oral manifestations of viral infections. Atlas Oral Maxillofac Surg Clin North Am 2017;25:163-70. This review covers all viral infections that affect the oral mucosa.
- Farah CS, Lynch N, McCullough MJ. Oral fungal infections: an update for the general practitioner. Australian Dental Journal 2010; 55: (1 Suppl):48-54. This article summarizes the most frequent etiology, pathophysiology, clinical forms and treatment of oral fungal infections.
- Akintoye SO, Greenberg MS. Recurrent Aphthous Stomatitis. Dent Clin North Am 2014;58:281-97. This review evaluated the etiology, clinical forms and available treatments of oral aphthous lesions.
- Sciubba JJ. Autoimmune Oral mucosal diseases: clinical, etiologic, diagnostic, and treatment considerations. Dent Clin N Am 2011;55:89-103. This work synthesizes the autoimmune pathology of the oral mucosa insisting on the most frequent clinical forms such as lichen planus, pemphigoid and pemphigus.
- Van der Waal I. Potentially malignant disorders of the oral and oropharyngeal mucosa; terminology, classification and present concepts of management. Oral Oncol 2009;45:317-23. This article describes the potentially malignant disorders of the oral mucosa.
- Chi AC, Day TA, Neville BW. Oral cavity and oropahryngeal squamous cell carcinoma-An update. Ca Cancer J Clin 2015;65:401-21. This work synthesizes the etiology, clinical forms, diagnosis and treatment of oral cancer.
- Zakrzewska JM. Differential diagnosis of facial pain and guidelines for management. British Journal of Anaesthesia 2013:111 (1):95-104. This article helps to make a correct differential diagnosis of orofacial pain.
- Saleh J, Zancanaro Figueiredo MA, Cherubini K, Gonçalves Salum F. Salivary hipofunction: an update on aetiology, diagnosis and therapeutics. Archives of Oral Biology 2015; 242-55. This work reviews the salivary alterations, their etiology and treatment.

2. *Develop a questionnaire or matrix review to evaluate if the student has been able to understand the document and show knowledge the student has obtained when reading and understanding the work.*

   Develop a questionnaire or APTA, to evaluate if the student has been able to understand the document and show the experiences that the student has obtained when reading and understanding the work.

   Due to the methodology of work of the subject, students taking the Oral Medical Pathology course this academic year 2017/2018 have been exposed to the following 6 articles:

   - Meleti M, Vescovi P, Mooi WJ, van der Wall I. Pigmented lesions of the oral mucosa and perioral tissues: a flow-chart for the diagnosis and some recommendations for the management. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2008; 105:606-16. This article reviews the most frequent dyschromias of the oral mucosa.
   - Fatahzadeh M. Oral manifestations of viral infections. Atlas Oral

Maxillofac Surg Clin North Am 2017;25:163-70. This review covers all viral infections that affect the oral mucosa.

- Akintoye SO, Greenberg MS. Recurrent Aphthous Stomatitis. Dent Clin North Am 2014;58:281-97. This review evaluated the etiology, clinical forms and available treatments of oral aphthous lesions.
- Sciubba JJ. Autoimmune Oral mucosal diseases: clinical, etiologic, diagnostic, and treatment considerations. Dent Clin N Am 2011;55:89-103. This work synthesizes the autoimmune pathology of the oral mucosa insisting on the most frequent clinical forms such as lichen planus, pemphigoid and pemphigus.
- Van der Waal I. Potentially malignant disorders of the oral and oropharyngeal mucosa; terminology, classification and present concepts of management. Oral Oncol 2009;45:317-23. This article describes the potentially malignant disorders of the oral mucosa.
- Chi AC, Day TA, Neville BW. Oral cavity and oropahryngeal squamous cell carcinoma-An update. Ca Cancer J Clin 2015;65:401-21. This work synthesizes the etiology, clinical forms, diagnosis and treatment of oral cancer.

To evaluate the questionnaire we have made a section that is available in the Annex. This section aims to correctly assess that the student has understood the work and is able to synthesize the most important information about this topic.

3. *Evaluate whether exposing the student to this learning method improves his/her learning experience, and comparing it to other students who don´t. During this course, as we have said, students have been exposed to the previous articles. To check if this system improves learning, we have compared the grades obtained after the first evaluation with those students from the previous year, who were not exposed to this learning experience.*

4. *Facilitate life-long learning by having the keywords in English to aid in the search of new scientific articles and clinical cases.*
   The student had to read and understand the different works consulting the technical words he/she did not understand. The knowledge of these new words will help you in the future to make new bibliographical searches.

5. *Awaken the student's curiosity and expand their knowledge.*
   In the articles there were contents that were not scope of the subject. We hope that these new contents have expanded the knowledge about this topic and have awakened initiatives to search for new images, or solutions to any doubts that may have arisen.

3. Methodology used in this project

First, we selected the articles. We used the necessary keywords corresponding to each subject area and using filters such as Article types "Review" and Publication dates "10 years", we made different bibliographical searches in the Pubmed and Cochrane Library databases.

A total of 30 full-text articles were selected. Of these 30 articles only 10 were finally included, because the rest contained material that was outside the scope of the subject or did not clearly show knowledge of the subject area in question.

The professors participating in this project agreed to finally include these 10 articles, belonging to 10 different subject areas. But it was made clear that it was not possible, for lack of time, to overload the students. Therefore, we decided to only expose the students to 6 of the 10 selected articles. For the 6 selected articles, we created a questionnaire to assess the learning experience achieved when reading the document and a matrix to assess the work.

After each of the classes in the corresponding subject area, the corresponding article with the questionnaire was uploaded to the Virtual Campus. It was done this way because it was necessary that the student had prior knowledge to understand the text, which was also written in English, and was not the native language of the vast majority of students.

The students had two weeks to read the article and fill in the questionnaire. Later, they delivered the work in the indicated file and the teachers in charge, participants in the project, corrected it by means of a matrix made for that purpose. The grades obtained (valued from 0-10) were part of the final evaluation of the subject.

To assess whether students exposed to this system better achieve the skills required to pass the 3rd year course in Oral Medical Pathology, we compared the evaluation scores obtained for students enrolled in the 2017/2018 academic year and those obtained by the students of the 2016/2017 course, who were not exposed to this learning system.

4. Human Resources

The professors who have collaborated in this teaching project have been:

- Rosa Mª López-Pintor Muñoz, hired professor interim doctor of the Department of Dental Clinical Specialties of the UCM. Co-Director of the Masters in "University Specialist in Oral Medicine".
- Gonzalo Hernández Vallejo, Professor and director of the Department of Dental Clinical Specialties of the UCM. Director of the Masters in "University Specialist in Oral Medicine".
- Lorenzo de Arriba de la Fuente, Associate Professor of the Department of Dental Clinical Specialties of the UCM. Associate Professor of the Own Title "University Specialist in Oral Medicine".
- Elisabeth Casañas Gil. Collaborator in external clinical practices of the Department of Dental Clinical Specialties of the UCM. Associate Professor of the Own Title "University Specialist in Oral Medicine".
- Lucia Ramirez Martínez-Acitores. PhD student of the Department of Dental Clinical Specialties of the UCM. Collaborating Professor of the Own Title "University Specialist in Oral Medicine".
- Julia Serrano Valle. UCM predoctoral fellow of the Department of Dental Clinical Specialties. Collaborating Professor of Own Title "University Specialist in Oral Medicine".
- Miguel de Pedro Herráez. PhD student of the Department of Dental Clinical Specialties of the UCM. Collaborating Professor of the Own Title "University Specialist in Oral Medicine".

5. Activity development

Since the acceptance of the project until the end of July 2017, we carried out a bibliographic search of the articles that were adjusted in the best possible way to the different subject areas (15). Each professor (Dr. López-Pintor, Dr. Arriba, Dr. Casañas, Ms. Lucía Ramírez, Ms. Julia Serrano and Mr. Miguel de Pedro) undertook the search of 2 or 3 subject areas. As mentioned, the searches were done in Pubmed and Cochrane Library, using filters such as Article types "Review" and Publication dates "10 years". After reading the abstracts, a total of 30 full-text articles were selected, and reviewed by all the participating teachers.

In a meeting, which took place the first week of September 2017, we decided to include only 10 articles (presented previously). The remaining 20 articles were discarded, 16 articles because they contained material that was beyond the scope of the subject, and 4 because they did not clearly show the background of the corresponding subject area. It should be noted that no articles were found that fit 5 subject areas (clinical history and exploration, pathophysiology of the oral mucosa, bacterial infections, benign tumors of the oral mucosa and dystrophies and bone dysplasia).

In this meeting we also came to the conclusion that it was necessary not to overload students with tasks. After reviewing the hours of non-face-to-face teaching of the subject, it was decided among all to expose the students to 6 of the 10 papers (commented above), it was calculated that the reading and realization of each one of the papers reviews would require 3 hours. We also determined some of the students, in a random manner, exposed to this learning experience would do the work, which at the time seemed quite inappropriate, mainly due to the possible knowledge that would be acquired and the time needed to complete it.

Dr. Rosa Mª López-Pintor Muñoz conducted a questionnaire for each of the articles and a matrix to assess the results of the questionnaire available in the annex. After imparting each corresponding subject area, Dr. López-Pintor uploaded the article to the Virtual Campus. It was decided to do so and not as planned, since we consider that the student, when faced with an article in a language that was not his own, would need information in order to understand and assimilate the work correctly.

The students were given two weeks to read the article and fill in the corresponding questionnaire. The work was done in non-office hours of the course. The student had to turn in the work before the due date and times indicated. Dr. Gonzalo Hernández, Dr. Lorenzo de Arriba, Dr. Elisabeth Casañas, Lucía Ramírez, Julia Serrano, Miguel de Pedro and Dr. Rosa López-Pintor graded the work. These grades were recorded in an excel table, assigning them values on a numerical scale of 1-10. The grades were part of the student's continued assessment.

In February, after making the first examination of the Oral Medical Pathology course, we evaluated the results. To do this, we compared the evaluation grades of the first exam for students exposed to this learning experience (course 2017/2018), and the first grades from students not exposed to it. To do this, we took as reference the grades of the first evaluation for the 2016/2017 course, which carried out the same tasks except the analysis of these paper reviews in English of different subject areas. We could not take into account those of the second exam, since we have not made a second examination session in the current course.

We used the SPSS program (22.0) to analyze the results. Dr. López-Pintor carried out the analysis. We were able to observe how the variables did not meet the criteria of normality with the Kolmogorov-Smirnov test, therefore we had to use nonparametric tests. In the 2016/2017 academic year, we had 52 students in this course (there were two groups of the same course and our group of professors only taught in group B). Of the 52 students, only 49 students underwent evaluation in the first exam. This academic year 2017/2018 we had 123 students (there was only one group in this course) of which 115 students took the first exam.

This academic year 2017/2018 has involved 111 students in this learning experience. The total average score obtained in the 6 papers (score of 0-60, 10 points per work) was 44.53 ± 13.16. These grades have been high and the follow-up has been correct, although 10 students did not turn in all the papers.

If we compare the scores of the first evaluation session of this academic year with the past academic year, we observed that the average mark obtained by the students in the evaluation from the first exam in the academic year 2016/2017 was 5.41 ± 2.11 and in the academic year 2017/2018 was 5.53 ± 2.04, slightly higher. When we compare the grades from this year with those of the previous year, applying the Mann-Whitney U test for independent samples, we observed that there are no significant differences between the grades obtained during this year and that of 2016/2017.

Therefore, although the results are encouraging, it seems that they have not influenced everything we expected in the total evaluation. Anyway, we have certain limitations to evaluate these results. One of them is that they should be checked again when the students show up for the second exam. The second limitation is that the size of the groups is not homogeneous, this year we have had more than twice as many students as last year. Another problem that we find is that it is work done by the student, we can not assess that it really is work done individually because not being able to control its development, students can work in groups and copy the results of another student, avoiding reading the entire work. In addition, it has not been possible to include all the subject areas of the total scope of the subject, which may influence the score of the overall evaluation.

After obtaining these results, we began to edit and compose the dossier of this project. The writing was done by Dr. López-Pintor and Dr. Lorenzo de Arriba and the translation into English by Dr. Elisabeth Casañas. The dossier includes the selected articles, the 6 questionnaires about each of the articles and the evaluation matrices to assess the different questionnaires. This last month the dossier has been made available to all the members of the group in order to correct possible errors.

6. Annexes

(1) Included articles:

1. Meleti M, Vescovi P, Mooi WJ, van der Wall I. Pigmented lesions of the oral mucosa and perioral tissues: a flow-chart for the diagnosis and some recommendations for the management. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2008; 105:606-16.
2. Yuan A, Woo SB. Adverse drug events in the oral cavity. Oral Surg Oral Med Oral Pathol Oral Radiol 2015;119: 35-47.
3. Fatahzadeh M. Oral manifestations of viral infections. Atlas Oral Maxillofac Surg Clin North Am 2017;25:163-70.
4. Farah CS, Lynch N, McCullough MJ. Oral fungal infections: an update for the general practitioner. Australian Dental Journal 2010; 55: (1 Suppl):48-54.
5. Akintoye SO, Greenberg MS. Recurrent Aphthous Stomatitis. Dent Clin North Am 2014;58:281-97.
6. Sciubba JJ. Autoimmune Oral mucosal diseases: clinical, etiologic, diagnostic, and treatment considerations. Dent Clin N Am 2011;55:89-103.
7. Van der Waal I. Potentially malignant disorders of the oral and oropharyngeal mucosa; terminology, classification and present concepts of management. Oral Oncol 2009;45:317-23.
8. Chi AC, Day TA, Neville BW. Oral cavity and oropahryngeal squamous cell carcinoma-An update. CA Cancer J Clin 2015;65:401-21.
9. Zakrzewska JM. Differential diagnosis of facial pain and guidelines for management. British Journal of Anaesthesia 2013:111 (1):95-104.
10. Saleh J, Zancanaro Figueiredo MA, Cherubini K, Gonçalves Salum F. Salivary hipofunction: an update on aetiology, diagnosis and therapeutics. Archives of Oral Biology 2015; 242-55.

(2) Articles used in 2017/2018 academic year:

1. Meleti M, Vescovi P, Mooi WJ, van der Wall I. Pigmented lesions of the oral mucosa and perioral tissues: a flow-chart for the diagnosis and some recommendations for the management. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2008; 105:606-16.
2. Fatahzadeh M. Oral manifestations of viral infections. Atlas Oral Maxillofac Surg Clin North Am 2017;25:163-70.
3. Akintoye SO, Greenberg MS. Recurrent Aphthous Stomatitis. Dent Clin North Am 2014;58:281-97.
4. Sciubba JJ. Autoimmune Oral mucosal diseases: clinical, etiologic, diagnostic, and treatment considerations. Dent Clin N Am 2011;55:89-103.
5. Van der Waal I. Potentially malignant disorders of the oral and oropharyngeal mucosa; terminology, classification and present concepts of management. Oral Oncol 2009;45:317-23.
6. Chi AC, Day TA, Neville BW. Oral cavity and oropahryngeal squamous cell carcinoma-An update. CA Cancer J Clin 2015;65:401-21.

(3) Review article1 questionnaire

Meleti M, Vescovi P, Mooi WJ, van der Wall I. Pigmented lesions of the oral mucosa and perioral tissues: a flow-chart for the diagnosis and some recommendations for the management. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2008; 105:606-16.

Answer the following questions briefly after reading the article:

1. List the causes of the chromatic variations of the oral mucosa, under normal conditions.
2. What stimuli increase the production of melanin?
3. Where are the color changes most frequently observed in the oral mucosa due to racial pigmentation?
4. What are the most common causes of melanotic macules?
5. What is a nevus? List the types of nevi.
6. Define melanoma. Where does it appear most frequently? Why is an early diagnosis important?
7. List the systemic alterations associated with the appearance of orally pigmented melanin-like lesions.
8. What is the cause of an amalgam tattoo? Where does it appear most frequently?
9. What other metals can cause color changes in the oral mucosa?
10. What are the most important characteristics "ABCD checklist" to take into account in a pigmented oral lesion?

(4) Review article 2 questionnaire

Fatahzadeh M. Oral Manifestations of Viral Infections. Atlas Oral Maxillofac Surg Clin North Am 2017; 25: 163-170.

After reading this article, briefly answer the following questions:

1. Do viruses that affect the oral cavity always cause oral lesions? What types of oral injuries can cause? Who do they affect most frequently?
2. What type of viruses are herpes simplex viruses (HSV)? Where does the HSV-1 cause injuries frequently? And HVS-2?
3. When does a herpetic primary infection appear? What age groups does it usually affect? What symptomatology does it cause? Where do oral lesions appear?
4. What are the causes of the reactivation of HSV? Where do oral lesions appear in HSV recurrences? Why are prodromes characteristic?
5. How can a herpetic recurrence be differentiated from other ulcerative lesions?
6. What is the treatment of a recurrence due to HSV? What factors influence the effectiveness of the treatment?
7. What types of clinical pictures can Varicella Zoster Virus (VZV) give in the oral cavity?
8. What are the causes of the reactivation of VZV, which originate in Herpes Zoster? Which branch of the trigeminal nerve is the most frequently affected? What are the essential characteristics of oral lesions?
9. What are the Coxsackie viruses most commonly affecting mucocutaneous tissues? Who do they affect most often? What are the most frequent clinical pictures?
10. How is the human papillomavirus (HPV) spread?
11. List the clinical pictures associated with HPV.
12. What subtype of HPV can be frequently associated with oropharyngeal cancer?

(5) Review article 3 questionnaire

Akintoye S, Greenberg MS. Recurrent Aphthous Stomatitis. Dent Clin North Am. 2014; 58(2):281-297.

Answer the following questions briefly after reading the article:

1. Where are oral aphthae usually located?

2. Briefly list the etiological factors associated with the appearance of oral aphthae. If possible, make a small outline.

3. Can oral ulcers have an infectious origin? Briefly explain your answer.

4. Describe the hypersensitivity to what substances seems to increase the risk of oral aphthae.

5. List the drugs that have been most frequently associated with the appearance of oral aphthae.

6. Describe the most important clinical features of recurrent aphthous stomatitis.

7. Are the microscopic (biopsy) results of canker sores specific? Justify if you think it necessary to biopsy a classic lesion of recurrent aphthous stomatitis.

8. What does the treatment of oral aphthae depend on? List three topical and three systemic treatments.

(1) Review article 4 questionnaire

Sciubba JJ. Autoimmune Oral Mucosal Diseases: Clinical, Etiologic, Diagnostic, and Treatment Considerations. Dent Clin North Am. 2011; 55:89-103.

After reading the article:

1. Fill out the diagram on the following page.

Disease	Epidemiology Age and Sex	Pathogenesis Cause of Problem	% Oral manifestations	Extraoral Lesions	Location of Oral Lesions	Type of Oral Lesions	Biopsy Results	Direct IF results	Differential Diagnosis
Pemphigus vulgaris									
Mucous Pemphigoid									
Lichen planus									

2. What is a paraneoplastic pemphigus?

3. Define the concept of desquamative gingivitis. What diseases of the oral mucosa reviewed in this paper can cause this clinical picture? Do you think that the term desquamative gingivitis is correct? State your opinion on this matter.

4. What is the treatment of oral mucosa diseases with an autoimmune cause? Make a small outline.

Van der Waal, I. Potentially malignant disorders of the oral and oropharyngeal mucosa; terminology, classification and present concepts of management. Oral Oncology, 2009; 45:317-23.

After reading this article:

1. Make a list of oral white lesions with which we make a differential diagnosis of oral leukoplakia and explain how they can be differentiated from it.
2. List the clinical types of oral leukoplakia and explain their characteristics.
3. Define the possible histopathological stages of a leukoplakia. What are architectural and cytological changes of dysplasia? Enumerate them.
4. What are the risk factors that increase the malignant transformation of a leukoplakia?
5. Answer the question justifying your answer: Is it better to treat an oral leukoplakia or not?
6. How often does a patient with an oral leukoplakia has to have dental revision?
7. List and describe very briefly other potentially malignant lesions.

(7) Review article 6 questionnaire

Chi AC, Day TA, Neville BW. Oral Cavity and Oropharyngeal Squamous Cell Carcinoma-An Update. CA Cancer J Clin 2015;65:401-421.

After reading the article:

1. When studying oral cancer, what is considered the oral cavity? And what is considered the oropharynx?

After reading the text, is this anatomical separation clear when epidemiological studies are done? Answer briefly.

2. List the risk factors associated with the appearance of oral and oropharyngeal squamous cell carcinoma.

3. Regarding tobacco. Are cigarettes only associated with the appearance of oral and oropharyngeal cancer? Can this association exist considering other types of tobacco?

4. Indicate in relation to oral cancer what happens when the patient smokes and drinks alcohol.

5. What type of human papilloma virus (HPV) is associated with the appearance of oral and pharyngeal squamous cell cancer? How does the presence of HPV influence the survival of patients with oropharyngeal cancer?

6. What potentially malignant lesions precede oral squamous cell cancer of the oral cavity in some cases?

7. What is proliferative verrucous leukoplakia?

8. How are the oral lesions of squamous cell carcinoma of the oral cavity clinically? Where do they appear most frequently?

9. How are the lesions of squamous cell carcinoma of the oropharyngeal area clinically? Where do they appear most frequently?

10. What are the most frequently used imaging tests for the diagnosis of oral and oropharyngeal cancer? Enumerate them.

11. What is the classification of TNM tumors based on? How do the different factors influence the forecast? Comment on it in summary form.

12. What is the survival of oral and oropharyngeal squamous cell cancer after 5 years of treatment?

13. After reading the article, briefly state your personal opinion about the role that the dentist can play in the prevention and early diagnosis of oral and oropharyngeal cancer.

14. Evaluation matrix

	0 Very improvable	1 Improvable	2 Acceptable	3 Good	4 Very good	5 Excellent
Content and Language used	It does not reflect the answer to the question Does not use coherent language	It hardly addresses the subject of the question. The language is not totally adequate.	It sufficiently addresses the issue of the problem to be solved, but it leaves some concepts. The language is adequate, but it has some errors.	It adequately reflects all the issues of the problem to be solved. The language is adequate.	It adequately reflects all the issues of the problem it was trying to solve and extends to others related to it. Use an adequate and understandable language.	It adequately reflects the whole topic of the problem that it was trying to solve and it broadens others related to them by touching many subjects of the subject. The language used is exceptional.
Originality, creativity, reflections, arguments, conclusions (Only necessary in articles 4 and 6)	They do not present their own arguments. There are no conclusions.	They present their own reflections, but scarcely argued. The conclusions are scarce. They do not present very original contributions.	They present their own reflections, with reasonable arguments but in which it would be more profound. Conclusions of adequate extension. They do not present very original contributions.	They present their own reflections, with reasonable and in-depth arguments. Broad and well-founded conclusions. Some original contributions.	They present their own reflections with very reasonable arguments and great depth. They relate some ideas well with others. Broad conclusions with significant and very original contributions.	They present their own reflections, with very reasonable arguments and great depth. They relate some ideas well with others. Conclusions quite broad with significant contributions and very original. The conclusions open the door to new reflective questions.

Calculation of the total note per article:

Do the evaluation matrix for each of the questions in each questionnaire.

It is only necessary to value the originality, creativity and reflections in a question of articles 4 and 6.

Calculate the maximum grade to obtain according to the number of questions of each questionnaire and consider it 10. Make a rule of 3 to obtain the final result of each article for each student evaluated.