ASSESSING TRANSVERSAL COMPETENCES OF NOVEL DEGREE OF GASTRONOMY AND CULINARY ARTS STUDENTS THROUGH THE TEACHING STAFF COORDINATION

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Abstract
The term ‘transversal competences’ is defined as competences which have been acquired through non-work activities or through participation in education or training [1] and that are relevant to jobs and occupations. The development of these skills is essential for increasing the productivity of enterprises and improving the employability of workers. In fact, the European Commission works with EU countries to strengthen ‘key competences’ knowledge, skills, and attitudes needed by all for this purpose. According to the last EU Council Recommendation [2], in 2015, one in five pupils had serious difficulties in developing sufficient reading, mathematic or science skills. In some countries up to one third of adults are proficient at only the lowest levels in literacy and numeracy and 44% of the Union population have low or no (19%) digital skills. On the other hand, the competence requirements have changed with more jobs being subject to automation, technologies playing a bigger role in all areas of work and life, and entrepreneurial, social and civic competences becoming more relevant in order to ensure the ability to adapt to change. Thus, investing in basic skills has become more relevant than ever.

This work focuses on the challenge of assessing transversal competences in first course students of the recently created Degree in Gastronomy and Culinary Arts at the University of Alicante in order to coordinate, design and implement the educational actions by the teaching staff to improve the teaching quality and the learning process of the student. In particular, the following competences were analyzed: Ability to communicate and dialogue, capacity to analyze and synthesize information, capacity to reason critically and present clear arguments, skills in computer science, reading and understanding a foreign language (e.g., English), and the ability to present formal documents according to academic standards. As a result of this project, non-conventional or novel teaching tools have been implemented with the aim of being incorporated into the next course teaching-guides to improve the student skills with a positive impact in their future employability as an expert in the Gastronomy field.

Keywords: Gastronomy, Culinary Arts, Transversal Competences, Bachelor Degree Students.

1 INTRODUCTION
European Higher Education Area (EHEA) establishes that the role of higher education [3] is to succeed in shaping their individual lives; graduates are due to dispose of a bundle of both generic and subject-related specific competences. Higher education institutions are all-time experts in providing subject-specific knowledge but less experienced in cultivating “soft skills” at the same time. These generic skills (e.g. methodological, social and intercultural competences, ethical values) are essential for finding, retaining or developing the individual position in society. Study programmes and modules must be designed in a way that leaves room for all the components that only as a whole build its profile. To meet the expectations not only of employers, public and private institutions but also of the actual and future students, higher education teachers and administrators themselves must face continuous change. As claimed in the Bucharest communiqué in 2012 “Today’s graduates need to combine transversal, multidisciplinary and innovation skills and competences with up-to-date subject-specific knowledge so as to be able to contribute to the wider needs of society and the labour market” [4].

On the other hand, employability has been one of the main goals to be achieved since the creation of the EHEA [3]. Even after the completion of the EHEA, many concerns still exist among employers, students, academics, higher education institutions and governments. Employability was and is one of the universal aspects that have been continuously worked on and developed. Within the Bologna Process, employability results in strengthening the relevance of graduates’ opportunities to start their professional life based on their higher education. The discussion is based on scientificness and
transferability, i.e. on subject-specific and generic competences including individual processes through lifelong learning. Employability in fact designates the ability of finding, fulfilling and keeping work (whether employed or independent is irrelevant). Knowledge, skills and competences have to be maintained and refined in order to keep pace with the constantly changing outside world. The term might be used in the sense of "survivability" including cultural, intellectual, practical, societal and financial contentment. Generally, "Employability" is used for the ability to purposefully use all the different competences in order to fulfil given professional tasks and/or to reach own professional targets and to adapt these competences to new environments and requirements.

According to EHEA, the process of acquiring not only subject-specific knowledge and expertise but also generic and transversal competences is essential for the future employability of the students. Generally, soft or general skills are mainly developed in the transversal competences that are defined as non-subject-specific, including methodological, social and intercultural competences, acquired through all the subjects of a Bachelor, Master or PhD Degree. The transversal competences of the first course of the new Degree in Gastronomy and Culinary Arts are related with computer science, oral and writing communication, and reading and oral comprehension in a foreign language.

An average of 56 students (depending on the subject) enrolled in the first course of the new Degree in Gastronomy and Culinary Arts during the present academic year (i.e., 2018/2019). The students were required to answer an initial questionnaire in order to know their prior knowledge and academic trajectory. Based on the obtained results, some deficiencies were detected such as insufficient computer skills, insufficient ability to read and understand a foreign language, and poor ability to write academic works.

Therefore, the aim of this study has been focused on developing different strategies, related to the transversal competences, to overcome the deficiencies previously assumed by the students, improving their soft or general skills. The activities have been carried out during the first semester in the subject of Fundamentals of Nutrition and Feeding belonging to the Degree in Gastronomy and Culinary Arts.

2 METHODOLOGY

The transversal competences established in the first course of the Degree in Gastronomy and Culinary Arts of University of Alicante have been worked and evaluated through the subject of Fundamentals of Nutrition and Feeding. This subject is a core subject of 6 ECTS of the first semester of the first course of the Degree. The subject is made up of four different learning activities: (i) lectures comprising 10 different units; (ii) seminars, related to feeding, (iii) practical sessions corresponding to nutritional evaluation, and; (iv) an oral presentation of a topic that concerns the society.

The three transversal competences studied are the following: (i) Reading and comprehension of a foreign language (TC1); (ii) demonstrating skills and abilities in informatics and information systems (TC2), and; (iii) demonstrating skills in oral and writing communication (TC3).

- TC1 has been partially worked though the viewing of a documentary of 4:14 minutes of duration in English language. This activity was optional and considered within the distance-base hours.
- TC2 has been worked through the preparation of a presentation in PowerPoint for the oral presentation activity (10%); and, writing two reports corresponding to practical sessions (20%) employing Microsoft Word and Excel.
- TC3 has been evaluated with an oral presentation for the oral presentation activity (10%) and writing two reports corresponding to practical sessions (20%). The oral presentation activity was optional, and the reports were compulsory activities.

Finally, a survey was given to the students to be responded optional and anonymously, with the objective of detecting the strengths and weaknesses of different general aspects of the subjects studied during the first semester of the first course, and those related with the transversal competences as computer skills, comprehension of a foreign language and, oral and writing communication skills.
3 RESULTS

3.1 Oral communication evaluation

3.1.1 Description of the activity

The first year of the Degree in Gastronomy and Culinary Arts of the University of Alicante the students have lectures of *Fundamentals of Nutrition and Feeding* as a core subject. In this subject, 10% of the evaluation corresponds to carry out an oral communication about a previously established topic by the professor. This oral communication is optional and not compulsory.

The topic, during the course 2018/2019, has been related with the widely known functional food or “superfood”, where the students should select kind of food (i.e., functional or superfood) give his/her opinion and discuss if there is a conventional food with the same properties available for the consumers.

The guidelines to be followed were:

1. Nutritional description of the chosen food.
2. Description of the nutrient that gives the property/properties needed to be considered functional food or Superfood according to the food legislation or advertisements.
3. Proposing a conventional food with the same properties than the functional food or Superfood selected in step 1.
4. Critical evaluation of the functional food or Superfood chosen with pros and cons.

The students participating in this activity are organized in groups of 3-4 people as their wish and should give an oral presentation of ten minutes. The professor provided to the students all the information needed to carry out successfully the activity. Additionally, the student knew in advance the key points of the evaluation guide over ten points (Table 1), with the criteria and the distribution of the different aspects to be evaluated. A total of 15 groups were established on 20th October 2018 and oral communications were done in four sessions of one hour each one between 28th of November and 10th of December 2018.

<table>
<thead>
<tr>
<th>Evaluable item</th>
<th>Code</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposition time</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Format of the presentation</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Homogeneous participation of the members</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Nutritional description</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Critical evaluation</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Bibliography</td>
<td>6</td>
<td>1</td>
</tr>
</tbody>
</table>

As is detailed in the teaching guide of this subject, some transversal competences should be evaluated, and then, passed by the student at the end of the semester. Therefore, this activity allows the professors to evaluate part of the third transversal competence (i.e., TC3), demonstrating oral communication skills.

3.1.2 Results

Figure 1 shows the evaluation results according to the evaluation guide described in Table 1.
Regarding the results, it is important to point out the high participation of the students in the activity even its optionality, and around 86% of the students carried out the activity. From the marks obtained, only 1 out of the 15 groups did not reach the minimum mark to pass the activity (i.e., <5). The rest of the groups passed the activity and the majority obtained a mark ranging between five and eight, and only 6 groups obtained marks above 8.1. Related to this, Figure 2 shows a comparison of the mean marks of all the groups for each evaluable item compared to the maximum mark established (Table 1).

Furthermore, other important aspects can be concluded. For example, the synthesis capacity of some students should be strengthened, due to some of the groups needed longer time than 10 minutes to finish the presentation. In addition, the critical evaluation and decision capacity of selecting a proper food, and how to cite the references or bibliography were slightly poor.

Finally, as a feedback from the students, they showed a positive attitude and a positive impact on what they learnt from a new situation of giving an oral presentation to their colleagues in the classroom. On the other hand, and as a side effect, they also gained computer skills due to the needed of employing PowerPoint as a tool for the presentation (TC2).

As a reinforce activity, a practical session of one hour devoted to the use of PowerPoint and how to succeed in oral presentations could be implemented. The activity can be addressed for students of first and second course and it would be useful for most of the subjects of the Degree.
3.2 Oral comprehension in a foreign language

3.2.1 Description of the activity

As described above, TC1 considers the reading and comprehension of a foreign language as transversal competence. According to EHEA, the foreign language can be any official language of the European Union. Therefore, and due to English language is studied in Spain since primary school, this language was chosen by the professor to achieve this transversal competence.

The activity was the voluntary viewing of a documentary upload in the Youtube platform (Figure 3) of 4:14 minute’s duration. The title of the documentary was “Gourmet cooking” and was related with the topic of Gourmet gastronomy. The viewing was considered within the distance-base hours and available during the whole semester. After the viewing, the students were evaluated through an on-line test available in the cloud of the University of Alicante (UACloud) during the whole semester. The test contained 10 questions with three possible responses being one the right. As a voluntary activity, the results of this test were no considered in the final mark of the subject.

![Figure 3. Screenshot of the documentary “Gourmet cooking”.](https://www.youtube.com/watch?v=rQ3A6GsMoDs&t=38s)

3.2.2 Results

Figure 4 shows the results of the test of the students that participated in the viewing of the documentary.

![Figure 4. Test results of the students.](Image)

The number of students participating in the activity was 23 out of the 56 students enrolled in the subject, being the participation around 41%. The mean mark obtained was 6.1 and just 5 students did
not pass the activity obtaining marks below 5. As a conclusion, 78% of the students showed a good oral comprehension in English language, and 33% of the students obtained a high mark (i.e., 9-10) confirming an excellent comprehension.

3.3 Computer skills

3.3.1 Description of the activity

The TC2 of the subject of Fundamentals of Nutrition and Feeding is related with skills and abilities in informatics and information systems. This transversal competence has been worked mainly in the practice part of the subject. The practice part of the subject is a compulsory activity and corresponds to the 20% of the evaluation. This activity is divided in 5 practical sessions carried out in computer classrooms. Once the third and fifth practical sessions are finished the students should send two reports, through the UACloud, to the professor for evaluation.

The main objective of the activity is related with computer skills (i.e., TC2), however, the TC3 related with skills in writing communication is also worked and evaluated due to the two reports that the students should present at the end of the activity. The computer skills worked in this activity were related with the use of the Microsoft Word and Excel sheets.

The evaluation guide was described in advanced and explained to the students. From 10 maximum mark: 6 points were dedicated to the main content of the report related with the topic; 0.5 points were given to the accomplishment of deadline for submission, and; 3.5 points were given to the format of the report and the writing. Related to the writing, the student should write the report avoiding any colloquial language or misspelling mistakes, employing the right punctuation marks to provide a coherent text (1 point). Related to the formal structure, it must be adequate including the must parts as the cover, with the student information, University and Degree, page number, type and letter size, the correct reference to tables and figures, etc. (2.5 points).

3.3.2 Results

Figure 5 shows the results obtained from the evaluation of the two reports provided by the 56 students enrolled in the subject.

According to data, 40% and 46% of the students did not pass the activity and the failed students were numerous. According to the evaluation guide, the students failed mainly in the format and writing aspects, the latter being basic skills that should be acquired before university studies. In this sense, 1.5 points were assigned to formal aspects such as the student correct identification in the initial page and absence of grammar, spelling, punctuation, or vocabulary mistakes. In this work, the medium mark obtained for a total of 56 student in the first report was 0.64 whereas in the second report was 0.60. Also, 1 point was assigned to the ability of the student to edit and present the information in tables in a correct form such as the alignment of a table within a frame, correct units and table statements. In this work, the medium mark obtained for a total of 56 student in the first report was 0.20 whereas in the second report was 0.38. Therefore, the results show the weaknesses of the students in TC2 and TC3, being needed to establish general activities or seminars at the very beginning of the semester related with computer science, mainly Microsoft Office. Regarding TC3, the lack of skills in writing communication could be attributed to the massive use of social media in the generations arriving nowadays at the University, where the formal aspect of language is not considered.
The reinforce activity could be addressed for students of first and second course of the Degree with two practical sessions of 1 hour each. One session devoted to the use of Microsoft Office and the other one to practical exercises to detect mistakes in formal texts to easily view what to avoid in writing reports.

3.4 Survey of the first semester of the grade

Once the first semester of the Degree in Gastronomy and Culinary Arts was completed, the students were proposed to complete a voluntary and anonymous survey with the objective of detecting the strengths and weaknesses of the different aspects in order to evaluate if any change or modification for the next semester or course is needed. The proposed survey is detailed in Figure 6.
From the 11 proposed items to be evaluated by the students, it is interesting to extract and analyse the number 9, 10 and 11 related to the different activities raised in the five subjects of the first semester, the materials available in the laboratory practices (scripts of laboratory practices, etc.) and the deficiencies detected by the students, for example, management of basic calculations, computer skills, or difficulties in reading or comprehension in a foreign language (i.e., English), etc.

The survey was completed by 30 out of the 56 students enrolled in the first year of the new Grade, reaching a participation of 54%. The results obtained for the 9 and 10 items indicated that the activities planned in the first semester and the materials available for the laboratory practices covered the expectations of the students, obtaining average ratings of 7.5 and 7.9, respectively. However, the average rating obtained in point number 11 was 6.6 being lower than those obtained for 9 and 10 items, showing that the students detected deficiencies in the different aspects asked. Figure 8 shows the results obtained for the different topics considered in point number 11.

From the results obtained, those activities related to the transversal competences, the first, third, fifth and sixth items of the Figure 8, showed the lowest rating, ranging from 4 to 6.2, obtaining the computer skills, as Microsoft Word or PowerPoint, the lowest marks (i.e., 4-4.1).

Therefore, it is important to point out that the activities developed in the subject of Fundamentals of Nutrition and Feeding based on the different transversal competences were appropriate in order to cover the difficulties and weaknesses detected by the students. However, additional activities related with the TC1, TC2 and TC3 should be carried out at the very beginning of the semester coordinated.
by the different professors to overcome these non-intrinsic weaknesses of the subject, and to carry out a proper learning process of each subject of the Degree.

4 CONCLUSIONS

Different strategies have been implemented in the subject of Fundamentals of Nutrition and Feeding based on the three transversal competences (i.e., TC1, TC2 and TC2). Although these competences have been deeply worked in this subject, they are also established as transversal competences for the other nine subjects of the first course of the new Degree in Gastronomy and Culinary Arts of the University of Alicante. Therefore, the work developed in this project reinforced the students to carry out a proper learning process for the whole first course.

The activities carried out provide interesting results from which important conclusion can be taken out. For example, from oral communication evaluation (Section 3.1) and computer skills (Section 3.3) a reinforce activity related to Microsoft Office (i.e., Word, PowerPoint and Excel), and another related with how to write a correct text are needed at the very beginning of the first semester as general activities non-specific of any subject. The activity of oral comprehension in a foreign language, showed acceptable results but the main disadvantage was its voluntary condition, as in the oral communication activity. It should be considered the possibility of giving them a compulsory character due to the importance of both skills for their present and future employability. Another weakness of the oral comprehension in a foreign language could be the selected language by the professor due to EHEA allows any official language of the European Union. Regarding to this, some students disagreed with the English language because they were more communicative in French or Italian, among others languages.

To conclude, although the different activities have been carried out just in the subject of Fundamentals of Nutrition and Feeding, they can be easily extrapolated to the other subjects. Additionally, general seminars or practical activities, given by professors, are proposed to reinforce oral communication and computer skills for all the subjects. However, some skills as oral and writing communication, and oral comprehension in a foreign language should be also hardly worked on the students own.

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