

IMPLEMENTATION OF A SELF-LEARNING ITINERARY TO IMPROVE THE EFFECTIVE COMMUNICATION OUTCOME IN THE MASTER OF FOOD SAFETY AND QUALITY MANAGEMENT

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Abstract

The ability to communicate effectively is an essential skill in today's world. Thus, a great effort is being done at the universities to help the students to reach this skill. In fact, in some universities, such as the Universitat Politècnica de València, to communicate efficiently is so important, that it is considered a student outcome that the graduates must demonstrate to obtain their degree. To help students to reach this generic outcome, it might be worked at class and evaluated. In this context, we present herein a pilot experience to help students of the subject "Audits of food quality", belonging to the Master of Food Safety and Quality Management of the Universitat Politècnica de València, to develop their communication skills through a self-evaluation, co-evaluation and self-working. The work was divided in different parts. In the first part, students were asked to prepare a short presentation of a topic related to the subject. During the presentation, students were evaluated from their class-mates with the help of a rubric (second step). In the third step, a self-evaluation test was given to the students to help them to reflect on their weak and strong points in the preparation and execution of the oral presentation. Based on the mark of this co- and auto-evaluation, students were invited to work on specific activities to reinforce their weaknesses. At the end of the course, students were asked to prepare a new presentation, which was again evaluated by their class-mates and the teachers of the subject following the initial rubric. After the whole process, students had to prepare a portfolio that gathered all their reflections on their weaknesses, strengths and how the different proposed activities had contributed to improve their communication skill. Finally, to assess the efficiency of the proposed methodology, different approaches were followed: a comparison of initial and final marks, evaluation of their portfolio and a satisfaction test. Results shown that following the three assessment approaches the methodology contributed to the development of the effective communication outcome. Especially, students stated that they had worked hard during the course, but the result/effort ratio had been satisfactory.

Keywords: Effective communication, student outcomes, self-diagnosis tools, self-training.

1 INTRODUCTION

Since the introduction of general student's outcomes in university studies, "Effective communication" is one of the most studied. Despite its importance, the disparity in the mastery of domain by students makes it difficult to work in the classroom through collective activities. Therefore, in most subjects it is only evaluated, without giving the student tools to develop it. In this context, we proposed a methodology called PIMECOE to evaluate the initial level of competence of oral communication through self-diagnostic tools and, based on the result thereof, develop a self-training itinerary for students, which includes learning activities that improve the proficiency level of the outcome [1].

"PIMECOE: Autodiagnóstico del nivel de dominio inicial de la competencia transversal "Comunicación Efectiva" y su mejora a través de un itinerario autoformativo" [2] is an innovation and educational improvement project (PIME/2017/B/025-14) funded by the Universitat Politècnica de València. Its main purpose is to create and provide students with a set of self-diagnostic tools that allow them to determine their mastery level in the student outcome "Effective Communication" at the beginning of

the academic period, and proposes, based on the auto-evaluation results, a self-formative itinerary composed of different activities designed specifically to develop this outcome at the appropriate mastery level.

Throughout the PIMECOE project, different actions have been carried out: a) design of a self-evaluative test of the effective communication student's outcome [3], b) development of an auto-formative itinerary based on the initial level of competence [4], and c) evaluation of the impact of the methodology on different groups of students. In a first experience, the methodology was tested with first-year students of the degree in architecture [5]. Results of this first experience have revealed that the proposed methodology does not require a lot of class time, since it is an autonomous learning on the part of the student but at the same time supervised by the teacher to comply with a learning contract established by both parties. They also have stated that students improved significantly their level of mastery.

Based on the results of all these previous experiences, the goal of this second pilot test, is to assess the efficiency of the PIMECOE methodology with a group of students of the subject "Audits of food quality", belonging to the Master of Food Safety and Quality Management of the Universitat Politècnica de València.

2 METHODOLOGY

2.1 Description and the context of the subject: "Food Industries"

The subject "Audits of food quality" belong to the Master of Food Safety and Quality Management offered by the Polytechnic University of Valencia. The subject aims to design audit plans to assess quality and food safety, as well as develop the basic competencies of an auditor. In the 2017-2018 academic year the subject was studied by 32 students, of which 30 participated in this experience.

2.2 Working plan with the students

In the first part, students were asked to prepare a short presentation of a topic related to the subject (i.e. private food quality systems –IFS, BRC, Global Gap...). During the presentation, students were evaluated from their class-mates with the help of a digital rubric hosted on a web server. After the presentations, teachers collected all the remarks from the class-mates and elaborated an individual report for each of the students. The report not only included information given by class-mates, but also recommendations of the teachers. In the third step, a self-evaluation test was given to the students to help them to reflect on their weak and strong points in the preparation and execution of the oral presentation [2,3]. Based on the mark of this co- and auto-evaluation, students were invited to work on specific activities to reinforce their weaknesses [2,4]. At the end of the course, students were asked to prepare a new presentation, which was again evaluated by their class-mates and the teachers of the subject following the initial rubric. After the whole process, students had to prepare a portfolio that gathered all their reflections on their weaknesses, strengths and how the different proposed activities had contributed to improve their communication skill.

2.3 Evaluation of the methodology

To assess the efficiency of the proposed methodology, different approaches were followed: a comparison of initial and final marks, evaluation of their portfolio and a satisfaction test. The satisfaction test included 12 questions through which the opinion of the students with the methodology was assessed. A five-point scale from "strongly agree" (scored as 5) to "strongly disagree" (scored as 1) was used to score the level of agreement with each statement. Surveys were conducted through Poliformat, a teaching platform developed by the Universitat Politècnica de València (Polytechnic University of València).

3 RESULTS

3.1 Student learning

Figure 1 shows the percentages of students who during the second exposure of the subject obtained a grade of A (excellent), B (very good), C (pass) or D (criterion not reached) in each of the evaluated items: domain of the subject, content organization, verbal-language, non-verbal communication, presentation tools (power point basically) and elaboration of answers to teachers questions.

As it can be in the figure, almost the 100% of students received a mark of A or B in the majority of rated parameters. It can also be observed how the domain of the subject, content organization and use of the presentation tool were the areas of proficiency where marks were higher. In contrast, students received lower marks in non-verbal communication and their capacity to answer properly to the formulated questions.

According to these results, the methodology has contributed a lot to the development of the effective communication student outcome. However, there are areas of domain, in which the activities have been less effective in ensuring that more than 50% of students scored as excellent (A).

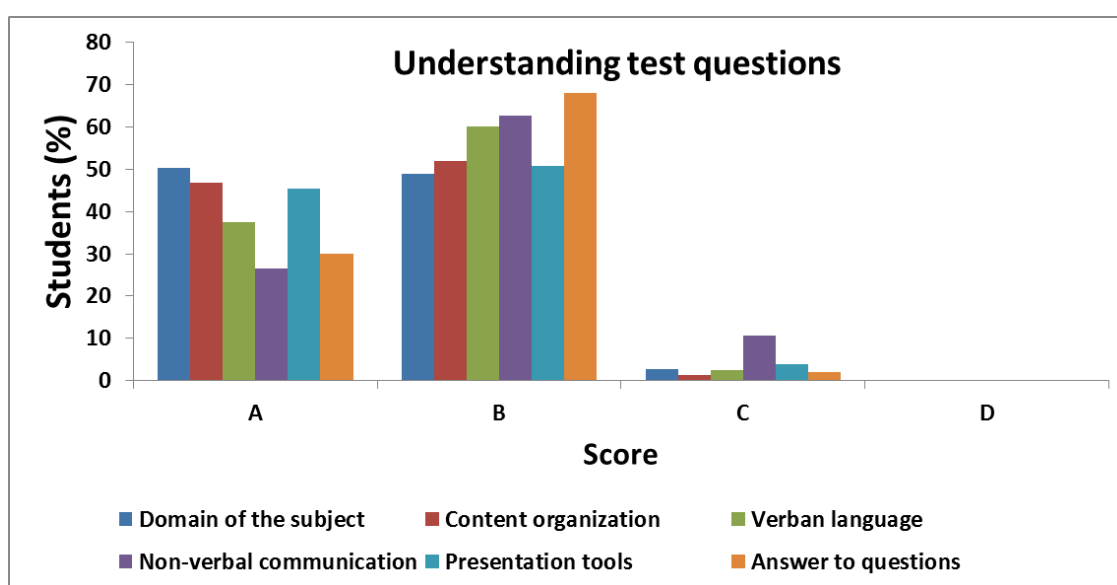


Figure 1. Students' domain of the different mastery areas of the effective communication students' outcome expressed as a percentage of students who were qualified with the letters A-D.

3.2 Student satisfaction

In order to know the degree of satisfaction of the students with the methodology, at the end of the subject, the students received a satisfaction test with the methodology. Figure 2 shows the percentage of students who gave each of the scores between 1 (totally disagree) and 5 (totally agree). As it can be observed, 85 of the students agreed that questions of the self-evaluation test were formulated so that they could be easily understood (Fig 2.a). Figure 2.f shows that most of the students took from 8-12 minutes to complete the self-evaluation test. Despite this time investment, 90% of the students agreed that this time was suitable. Students also evaluated the simplicity of the procedure to calculate their level of competence. Figure 2.c shows that 70% of the students agreed that the procedure was simple. However, it might be improved by using an automatic calculator.

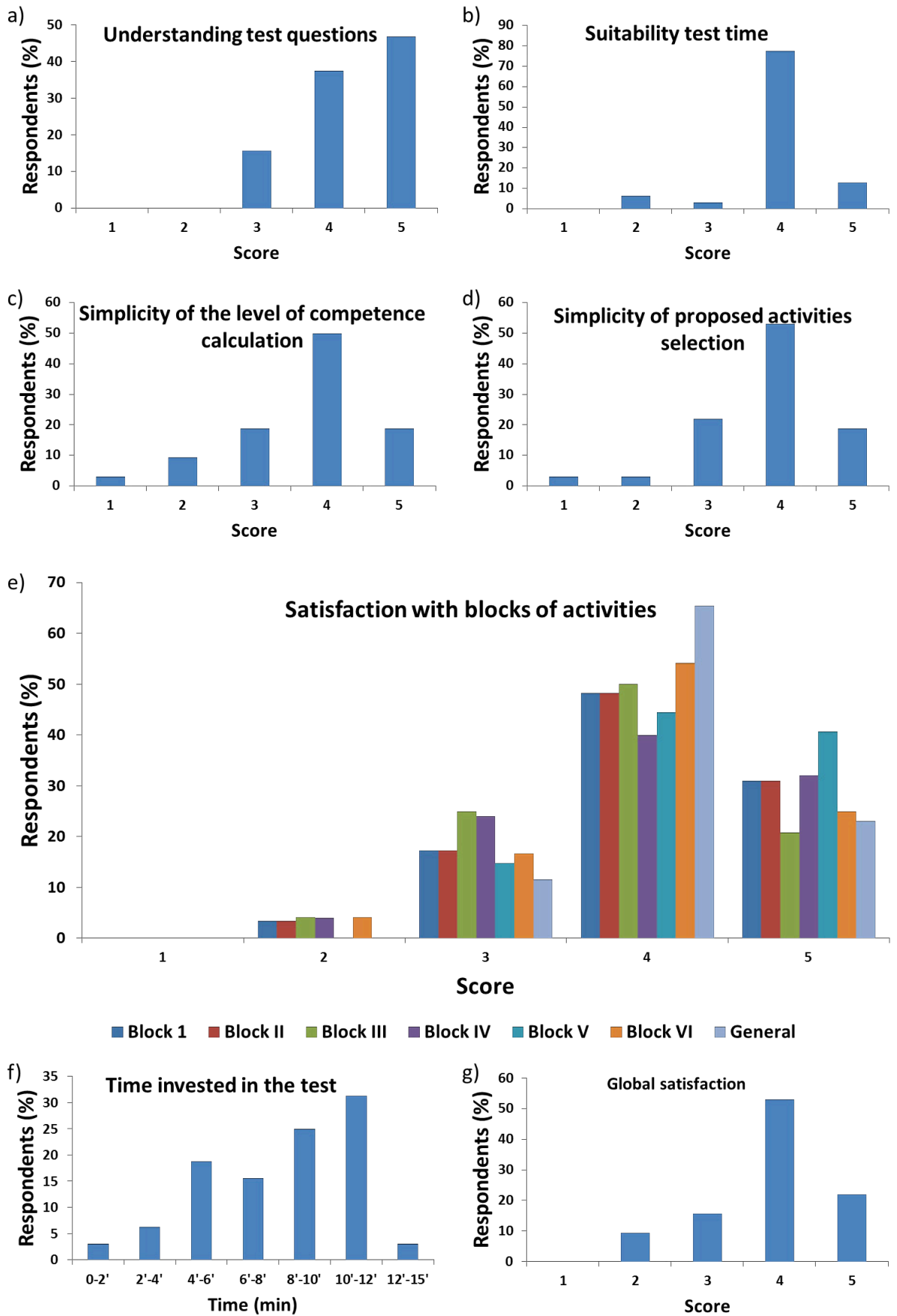


Figure 2. Results of the satisfaction survey.

Similarly, it was asked about the ease of selecting the activities that they had to carry out during the self-learning phase based on their results. Again, 70% of the respondents answered that it was easy to know what activities should be carried out. However, the use of a web application that made the automatic calculation of the level of competence and proposed activities would greatly simplify the process.

Figure 2.e shows the satisfaction of students with the activities included for the self-learning itinerary. As it can be observed, the level of satisfaction did not vary significantly as a function of the block of activities. It can also be seen that 70-75% of the respondents were satisfied or really satisfied with the proposed activities, and that more than 92% of the respondents were satisfied or really satisfied with the activities as a whole.

Finally, figure 2.g shows global satisfaction. As it can be seen, 75% of the students were satisfied or really satisfied with the methodology, despite the fact that they had invested a lot of time in accomplishing the proposed tasks: prepare a presentation, present the topic in front of their class-mates, read a report, complete a self-evaluation test, complete different tasks, and prepare a new presentation.

4 CONCLUSIONS

The proposed methodology based on self-assessment and self-learning requires a significant effort in terms of time on the part of the students. However, based on the academic results and the results of the satisfaction survey, the methodology successfully contributes to the development of the effective communication competence of the students. To further facilitate the development of competence, students propose to have a web application that integrates all phases of the methodology.

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