Teamwork Competence Professor's Self-Assessment, a Study Case in the Universidad Politecnica de Madrid

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Abstract

In the current framework of university education in Spain several significant challenges should be raised. Among others, teachers have to integrate generic skills in their training programs, that is, they have to integrate both the evaluation and the development of skills. In this paper a self-assessment questionnaire on the performance of teamwork was applied to a group of teachers during workshop training. The aim was to improve the teaching and assessment of the skill that every teacher has to develop in their subjects. The findings show that teachers, who have achieved higher values, were the most motivated and interested in the development of generic skills. Furthermore, they improved their performance in their training during the workshop, but it is necessary to note that the length, the content and the methodology of each session, may have some influence.

Keywords: Teamwork, teacher's training, assessment generic skill, development soft skill

1. Introduction

The continuous changes that occur both the world of labor and education in early years of the 21st century (Peters, 2000) advice that you the university teacher make a thorough reflection on the activity itself and the way to meet the challenges of future. Moreover, the transformation of Spanish universities, following the implementation of the Bologna Declaration, requires a change in the teacher major role, which more than conveys knowledge should encourage the development of skills to ensure lifelong learning, as well as the professional performance relevant at a rapidly changing world (Bozu & Canto Herrera, 2009).

In Spain, at the most universities, teachers encounter some trouble in facing these new roles required of them, especially as regards the development and assessment of generic or soft skills (Edwards-Schachter, Garcia-Garcia, & Mazadiego, 2011).

The success of the best education systems in the world is based on three factors: first, achieve people better prepared to teach.

The second, developing them into effective instructors and, third, ensure that the system will be able to provide the best instruction for all (Barber & Mourshed, 2007). In that sense, any effort to improve teacher is necessary and important.

Our university has been promoting for few years the implementation of educational innovation projects that enhance the teaching and learning in their classrooms. The teamwork skill was tested during the development of one of those projects that is the one entitled "Development and evaluation of generic skills in forestry engineering degree". This is because this competence was reported in nearly 70% of the subjects of syllabus of the degree, and most of the teachers requested support for their development and evaluation.

This showed that many of the teaching staff of this degree consider it very important to include this generic skill to develop in their students, but they themselves are not considered competent to do so. This is partly due to that in Spain, the development of the teamwork competence depends only on the individual courage (Carvajo, 2005), even though many authors highlight this competence as emergent in teaching work (Álvarez-Rojo et al., 2009) and therefore, it is increasingly demanded to the teacher their performance, that is, a high degree of skill in cooperation to be able to organize ranging from a simple workgroup to a team project (Perrenoud, 2004).

Thus, in the context of that project, aimed to teachers team of forest engineering degree, we designed a training course in the development of which was considered interesting to obtain: the opinions and perceptions of the participants regarding their own skill to "teamwork" and find out if any factors such as experience or interest in educational innovation had influence on this perception. With these objectives have been achieved some outcomes and advanced few conclusions that are explained in this document.

Table 1: Mean Values of the 11 Variable

	April		June	
	before	after	before	after
V1	4.4	4.6	5.0	4.9
V2	4.0	3.8	4.4	4.8
V3	3.3	3.4	3.6	4.1
V4	3.3	3.5	4.3	4.6
V5	3.5	3.6	3.6	4.4
V6	4.4	4.6	5.0	4.8
V7	2.4	3.3	3.4	3.8
V8	3.4	3.6	4.3	4.5
V9	3.8	3.8	4.1	4.6
V10	3.8	3.8	4.5	4.7
V11	2.4	2.5	4.2	4.3

2. Methodology

As indicated before, there was designed a training course in which the teachers were surveyed about their competence "teamwork".

The group of participants teachers have a wide teaching experience, whereby it was considered suitable an formative action from an experiential learning point of view, to cover their training needs focus to the development competence (Romero Ariza, 2010), from a personal reflection process to build a significant learning from own experience (Smith, 2001), (Pinya, 2008).

This training course was designed in two phases, first an introductory session (9th April, 1.5 hour length), where the training director presented the topic and explained the working of full training course, and the second, a workshop (18th June, 5 hours length) where the teachers elaborated a plan to teach and assess the competence "team work" in their subjects, and share their approach and learning.

In the first session there were twelve teachers involved, only two of them were able to attend the second session, for this reason, the workshop was broadcasted to other University centers, and finally eleven professors participated from several faculties. The pools were anonymous and the two teams were analyzed as independent ones.

Teacher's teamwork is a poorly analyzed area in Spain (Antunez, 1999), therefore, we decided to analyze how participant teachers perceived themselves in these working sessions, for which, we applied a questionnaire before and after each once. This questionnaire was carried out from some instruments that were developed and tested in other contexts of adult learning. (Nogueiras & Ibora, 2012), (Nogueiras et al., 2013) , and being defined by eleven variables: interest (v1), close (v2), precise (v3), organized (v4), clear (v5), open (v6), complete (v7), focused (v8), connected (v9), comfortable (v10) and stable (v11), which is answered with a Likert scale of 1-5.

The scores obtained from the questionnaires were analyzed by Microsoft Excel™ 2010 and Statgraphics™ Centurion XVI. First a descriptive analysis was performed, obtaining average values and bar charts for each variable, as well as an exploratory analysis of the variation (increase) for each variable of the questionnaire at the beginning of each session and at the end, as well between sessions. Following, comparisons were made within each group of teachers before and after each session, using the nonparametric test of signs (Wilcoxon, 1945) for paired data. Also were made comparisons between groups of teachers participants each day at the beginning and at the end of each session, using the Wilcoxon-Mann-Whitney U test (Conover, 1980).

3. Results and Discussion

Table I shows mean values for each variable before and after of each session.

The descriptive analysis comparing values between sessions shows that, values of all the variables in workshop are greater than those of preparatory session. The variables with greater variation between sessions are: v11 - stable (36%), v4- organized (21%), v7-complete (20%) and v8-focused (18%) and those with least variation between sessions are: v5- clear (2%) and v9 - connected (5%).

Moreover, a new variable has been created by adition of the variables v1 to v10 obtaining a new variable that allows a global analysis of them. The variable v11 - stable, has not been included in that sum by consider that its influence on competence "team work" is interpreted as opposite that of the rest of variables. This meaning that as more great are the values -from 1 to 5 - for v11 the "movement attitude regarding teamwork competence" is less. Therefore, this represents a difficulty to promote the skill among students.

The global variable Vt10 takes slightly different values before and after of each session (Figure 1). Differences between preparatory session values and workshop session values are observed being workshop values greater than those of the first session.
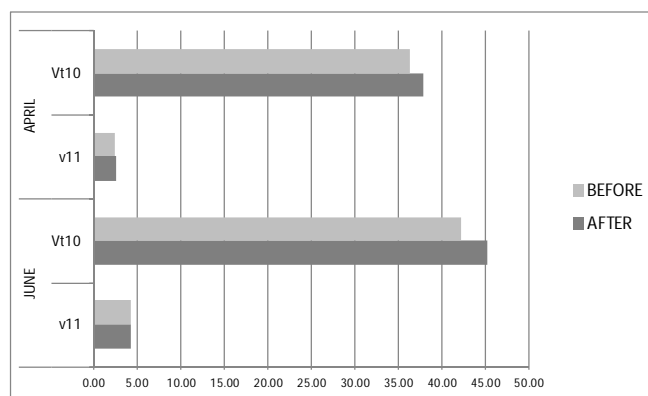
Fig. 1 Comparative Bar Chart For Global Variable Vt 10 and Variable V11- Stable

So this is interpreted as teachers participants at workshop have a self- perception of more competentes regarding the skill "team work". However, they give higher ratings to v11 - stable, which would imply less willingness to evolve in the skill. This would not look good for their teamwork skill.

In view of these results it has been performed a quantitative statistical analysis.

3.1. Statistical Analysis Comparing Each Group of Teachers Before and After Each Session

1st session (preparatory, April 9): the paired sample tests for each of the 11 variables are not significant (signed-rank test p-values > 0.5). So there are no difference in scores between the beginning and the end of this session.

2nd session (workshop, June 18): the results are different depending of variable.

For v1- "interest", all teachers have assigned the highest value (5) in both occasions. Extreme case of equality.

For the rest of the variables it was not observed significant differences between the opinions of teachers at the beginning and the end of the workshop. Although in this case the p-values provided by the Wilcoxon tests are somewhat lower (p-values > 0.4) than those the 1st session.

Therefore, we can conclude that either of the two sessions has influenced in the variation of teachers score for each variable. This means that the variation of these data has not been enough as to say that there has been change following the work session.

3.1. Statistical Analysis Comparing the Teachers Groups of Each Session before Development of the Same

In general, the group scores of the preparatory session (April 9) are less homogeneous or show more variability than values of group workshop session (June 18). So, although the Wilcoxon-Mann-Whitney U test (M-W-U) no detects significant differences between medians in some cases, the Kolmogorov-Smirnov (K-S) test of similarity of distributions finds significant differences (p-value < 0.01) between distributions of values at the beginning of each session.

Interest (p-value= 0.056) close (p-value =0.33), clear (p-value= 0.17); open (p-value= 0.056), focus (p-value=0.079), connected (p-value =0.164). But for interest and open variables the K-S test is significant (approximate p-value = 0.0001).

Significant differences at 5% have been found between thisgroups with the M-W-U test for the variables: accurate (p-value= 0.047), organized (p-value= 0.014), complete (p-value= 0.008), comfortable (p-value= 0.046) and stable (p-value= 0.028).

It seems that there is some differences in the self-assessment of the two groups of teachers about their teamwork competence at the beginning of the session. It is possible that the more active, interested and committed attitude of the workshop session teachers to this competence has had influence. These results have been collected by other authors (Malm, 2009)

Moreover, it is difficult to influence in this attitude because of the firm belief of both teachers and students, that teaching should focus more on specific skills and professionals that in the generic or soft skills (Callan, 2004).

3.2. Statistical Analysis Comparing the Teachers Groups of Each Session after Development of the Same
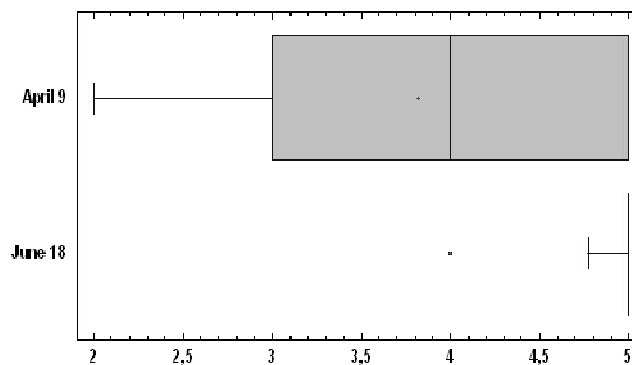
Fig. 2 Box Plot for the Values of the Variable "Comfortable" at the End of Each Session

No differences were observed between assessments at 5% at the end of each session on the following variables: interest (p-value =0.112) open (p-value =0.763). Instead the other variables differ: nearby (p-value= 0.008); accurate (p-value =0.004) organized (p-value =0.005) clear (p-value= 0.0338) complete (p-value =0.005) focus (p-value =0.032), connected (p-value= 0.046), comfortable (p-value= 0.019), stable (p-value= 0.012).

Therefore, there are significant differences between the scores at the end of each session by each group of teachers. The participants teachers in the preparatory session usually have more dispersion in their scores than those who participate in workshop session (Figure 2). This latter group usually gives high values in a small range (3 to 5), figure 2 shows an extreme case with variable values "comfortable" grouped in score 5.

It seems that they are influence of the type and duration of each session. Thus, the workshop session, with more duration and intensity seems to have influenced a little more in the change of attitude of the teachers involved.

4. Conclusions

The teachers' attitudes regarding generic skills and interest in educational innovation are the factors that seem to have more influence on their self-perception of teamwork competence. The results suggest that the duration and intensity of the work session influence the change of teachers, it seems interesting to consider implementing this type of evaluation in multiple training sessions with different learning contexts for further research.

Acknowledgment

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