

Design of an assessment methodology for Educational Innovation Groups in the EHEA

De Los Rios-Carmenado, Ignacio^{1,a}, Sastre-Merino, Susana^{2,b} and Fernández-Moral, María José^{3,c,*}

^{1,2,3}Technical University of Madrid. Avenida Puerta de Hierro, 2, 28040 Madrid, Spain

^asusana.sastre@upm.es, ^bmariajose.fernandez.moral@alumnos.upm.es,

^cignacio.delosrios@upm.es

*Corresponding author

Keywords: Educational innovation, Quality assessment, Lowercase letters.

Abstract. This document explains the process of designing a methodology to evaluate Educational Innovation Groups, which are structures created within universities in the context of adaptation to the European Higher Education Area. These groups are committed to introduce innovation in educational processes as a means to improve educational quality. The assessment design is based on a participatory model of planning called Working With People, that tries to integrate the perspectives of all stakeholders. The aim of the methodology is to be a useful tool for the university to evaluate the work done by the groups, encourage the members to continue improving the quality of teaching and reorient the activities to fulfill the emergent needs that the university faces.

1. Introduction

The commitment to providing the best service to society implies the continuing need to renew the university educational field [1]. The constant development of new technologies and the approach and implementation of the European Higher Education Area (EHEA), are the basis on which many institutions have designed innovative educational resources to adapt their curricula and teaching methodologies to these changes. Thus, innovation in education and training is one of the fundamental tools of educational policies in Western societies [2], which also aims at ensuring the quality of both the institutions and the training provided by them.

1.1. Educational Innovation at the UPM

In this line the Technical University of Madrid (UPM) in 2005 approved a program that included the "General Plan for Quality Teaching" [3], in which different actions were framed to promote educational innovation. In the course 2005/2006 the UPM launched on an experimental basis and with budget allocation a call for "Aid to educational innovation in the framework of the European Space of Higher Education and the improvement of Quality of Teaching". From this first edition of Educational Innovation Projects (EIP) have been continued to the present.

A year later, in 2006 the UPM opened a permanent call for the establishment of Educational Innovation Groups –EIGs– [4]. The objective of these groups is to foster stable collaboration between teachers to give continuity to the promotion of educational innovation (EI). Moreover, these activities also had-and have-the aim of improving teaching and recognize the efforts of teachers committed to educational innovation. As of April 2013, the UPM has 118 Educational Innovation Groups in which there are 929 professionals involved [5].

As contained in the report "Eight Years of Educational Innovation Projects at the UPM" [5], the main lines of action of the IEGs are: (1) the development of new methods of learning and assessment, (2) student support, (3) curriculum development, (4) incorporating ICT in classroom training, (5) development of the learning dimension in R + D + I projects, (6) adaptation of teaching organization to the objectives defined for the EHEA, (7) attracting new students and retention of graduates, and (8) implementation of international agreements with higher education institutions. These activities have been enhanced through successive calls to perform Educational Innovation Projects (EIP) that have been defining lines of action adapted to each academic year according to the needs of the university [5].

The area of Educational Innovation at the UPM is managed by the Service of Educational Innovation, established in 2007 and currently assigned to the Vice-chancellorship for Academic Planning and PhD. In addition, UPM has an "Educational Innovation Advisory Commission" appointed by the rector, which reviews, evaluates and supports all initiatives to support educational innovation and the various programs developed. Over time other organs of the UPM have helped to support and train in various Educational Innovation activities such as ICE-Institute of Education Sciences and the GATE-Tele-Education Cabinet.

1.2. Why does the UPM need an assessment methodology?

The design of an IEGs assessment methodology emerges at the UPM from the need to establish a means of improving them [6], without losing its essence and objectives for which they were created: continuous improvement of the quality of teaching. Furthermore, according to Article 19 of the Rule of Recognition of IEGs [4] after two years, they must apply for continuity, for which they must submit a renewal application accompanied by a report of activities and accomplishments. The proposal also aims to facilitate the assessment of these reports by the assessment team.

Since 2006 when the work of these groups was promoted, there have been many changes that the groups have faced and that have caused changes in their first objectives and activities, so this proposal is an opportunity for renewal and to approach new targets in the university teaching field. It is not intended to break with the previous system, but to set a turning point that is characterized by continuity with the past and sustainability for the future, thus a gradual change is proposed, so that all IEGs that currently exist incorporate the new approaches proposed.

In summary the IEGs assessment pursues:

- Continue the current Regulations on Educational Innovation without disrupting the natural evolution of the groups and reinforcing some aspects already included before.
- Improve information on IEGs and the process to obtain it and making it a self-assessment tool for the groups themselves without imposing a top-down model. For that reason, the design has been done with the participation of all members of the current UPM IEGs.
- Ensure the sustainability and growth of the IEGs over time through educational innovation and the necessary measures for improvement in a university dynamic and constantly evolving context.
- To offer a transparent service available to the entire university community to measure results in the context of the educational model of the UPM.
- To provide possible mechanisms for the recognition of the work done by university teachers in the UPM to improve the quality of the education.

It should be noted that the methodology is focused from the beginning to evaluate a group of people, in any case it will evaluate individuals as there are other specific mechanisms for that purpose.

2. Methodology

The methodology presented is the result of a continuous work developed with the different actors involved in Educational Innovation at UPM, coordinated by the IEG "GIE-Project" [7]. The

methodology was developed from the fundamentals of the model *Working With People* (WWP) [8]. This planning model defines three components easily identifiable in the present work.

First, the ethical-social component is related to the integration of ethics and the needs of the society. In this case, the component refers to the work done by the EIGs to adapt curricula to the needs posed by society over time [8]. In addition, the approach of transparency pursued by the results of the assessment of EIGs shows values of openness. Second, the technical-entrepreneurial component responds to the need for EIGs to get involved in the design of quality educational programs (degrees, master's and doctoral programs) that attract students who reach the planned objectives, and also characterized by being efficient and profitable for the university. Finally the contextual-political component allows the methodology to respond to EHEA, the general objectives of the UPM Model and the purpose of EI in the UPM.

These three components are related through social learning processes [8] that allow to document and incorporate to the methodology the lessons of experience from different educational innovation perspectives. We highlight in this process of information and documentation the learning produced during the eight years of experience of the IEG [5].

The methodology for designing the assessment methodology of the UPM EIGs passes through the stages described in figure 1.

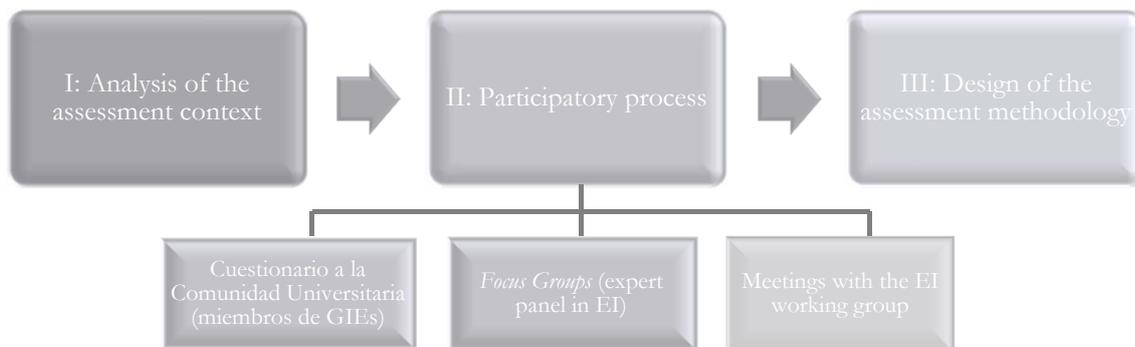


Fig. 1. Stages to design the methodology to evaluate Educational Innovation Groups in the UPM.

2.1 Stage I: Analysis of the assessment context

In the first stage the context of educational innovation at UPM was reviewed, including the Educational Model [9] and the Rule of Recognition of EIGs [4], in order to know how the EIGs arose and their role in university teaching. On the other hand, to analyze and synthesize the literature on educational innovation (conceptual framework, features, objects, etc.) and existing documentation about the assessment of educational innovation (assessment of teaching quality), a literature review was conducted [10].

For this first phase documentation on educational innovation groups has been revised, both nationally and internationally. Throughout this review is worth noting that the experiences of educational innovation published is scarce [11], and often focus on specific methodologies conducted in subjects, especially in those related to the introduction or improvement of the use of ICTs. Nevertheless, an example of assessment developed by the University of Barcelona [12] has been found, as well as certain different procedures for the recognition of EI groups that offer multiple indicators to evaluate them.

Following the literature review and the analysis of the extracted information the objectives of the assessment of the UPM EIGs are:

- To determine categories that frame the different innovative educational features and activities of the EIGs, paying attention to both the excellence of their activity and improving results.
- To select a number of quantitative indicators to assess the criteria above, as well as the source of information that is necessary to access to obtain it.

2.2 Stage II: Participatory process

The second stage includes the participation of stakeholders. A questionnaire was designed and applied, two Focus Group workshops were held and finally a series of meetings with a joint working group help to finish the proposal.

2.2.1 Definition of categories and indicators through a questionnaire and focus group workshops

The first activity was to conduct developed a questionnaire that was sent to all members of Educational Innovation Groups. The questionnaire included the following areas: (1) assessment categories, (2) indicators, (3) the purpose of the assessment, and (4) proposals not included in the previous sections. Of the 929 questionnaires sent from the Educational Innovation Service, we obtained a total of 156 responses (16.8%). Given the existing literature about the low participation in questionnaires online [13], and even publications indicating that the response rate in this type of questionnaires around 10% [14], and that this questionnaire meant the starting point of the work and not lead to final results, it was concluded that it was a valid response rate.

As indicated above, before identifying indicators it was necessary to establish categories or areas of assessment. At first four categories were set that were rated through the questionnaires, obtaining a weight for each one. The questionnaire also proposed various indicators that were also rated but this time on a Likert-type scale of 1 -very inappropriate- to 4 -very appropriate. It was not a closed questionnaire as participants could make their proposals freely.

Later with the data obtained from the questionnaires two Focus Group workshops were conducted [15] with a panel of experts selected from the Education Innovation Service UPM, composed mainly of EIGs coordinators and teachers with a very active dedication in educational innovation. Moreover, in these workshops also staff from the Vice Chancellorship for Academic Structure and Quality of UPM, and from the Office of Tele -Education attended. The purpose of these workshops was to incorporate to the assessment methodology criteria that the groups themselves consider the most important, in order to obtain a method that can respond to the strategic objectives and the wide range of activities from different EIGs.

The results of the questionnaires were the starting point for the first Focus Group workshop. Through the different questions not only the assessment categories and indicators were shaped, but also interesting questions about the usefulness of the assessment of the EIGs, the adequacy of incorporating qualitative methodologies, etc.

Regarding the assessment categories set in the first workshop it was agreed to add a new one, thus leaving a total of five categories assessed again and whose final weights were calculated through a balance between the questionnaires and workshops.

The selection of indicators was more complex because they not only had to represent the activities of all groups, but should also be easy to demonstrate. From the initial proposal of indicators included in the questionnaire we eliminated those that were rated 1 or 2 (very appropriate or inappropriate). We also included those indicators approved by consensus by the majority of participants, always bearing in mind the premise that the end result will feature a limited number of indicators and that resulted easily quantifiable.

2.2.2 Assigning weights to the indicators through an EI joint working group

As a final activity in the participatory process, a joint working group was created with EIG coordinators from different schools of the UPM, responsables for the Quality Unit of the Vice Chancellorship of Organizational Structure and Quality, and personnel from the Educational Innovation Service and the Tele-Education Cabinet, and was coordinated by the Deputy of the Vice

Chancellorship for Academic Planning and PhD. The aim of this group was to complete the formulation of the proposal with the information from the Focus Group workshops.

The main task of this group was to design the scoring system of the proposal and to assign a specific score to each of the indicators. In addition, during the first meeting they concluded the need to provide qualitative data to the methodology, specifically in the first category "Impact on the quality of education and skills development".

2.3 Stage III: Integration of information and proposal

Finally, with all information collected we propose the methodology to assess the EIG activity, that is detailed in the following section.

3. Results

The proposal that was finally reached was profiled along all the participatory process. First, the analysis of the questionnaires marked the starting point to open the discussion in subsequent workshops. Several important substantive issues emerged as the real purpose of an assessment of EIGs or the usefulness of publishing the results as a "ranking of EIGs" for what there were different opinions, since that publication meant to encourage healthy competition that would encourage groups to promote their activities, to the opinion that it would discourage many groups working without getting the expected results. Another issue to be discussed until the end of the work would be not to limit EIGs assessment to a quantitative methodology, but rather a mixed one, as qualitative data is necessary for many groups to be able to express the work done.

When the objectives were clear we moved to the definition of the categories. As noted above in the first workshop we included a category that many of the participants had proposed: Impact on the quality of education and skills development. Once the categories were set, the difficulty came to define indicators for each. Given the diversity of activities undertaken by the UPM EIGs, it was difficult to define indicators that would fit all their work. This problem was solved by proposing that a group could have the maximum score in one category by having a relevant activity in one of the indicators, not being necessary to score in all of them.

In the definition of indicators we also took into account the evidences that the GIE should make to demonstrate their results, as proposed indicators are sometimes difficult to verify by the assessment team. Furthermore, although finally the category included after the participatory process will be evaluated qualitatively, in this case the EIG should also adduced evidence for proper assessment.

Responding to the goals set and after the participatory process, key in the proposal made, in table 1 there is a description of the results that led to the final draft of the GIEs assessment methodology in the UPM.

Table 1. Proposed EIGs assessment methodology in the UPM

<p>1. Impact on the quality of education and skills development (22.5 / 100)</p> <p><i>In this category EIGs will include the main contributions of their activities, indicating how these activities have affected the quality of education and skills development, pointing appropriate evidence.</i></p>
<p>2. EIG activities and contribution to the policy of the UPM (22.5 / 100)</p> <p>2.1. <i>EI Projects developed (European Project / National Project / Regional project / UPM project)</i></p> <p>2.2. <i>Other EI activities (Open Course Ware material Development / Activities in secondary schools)</i></p>
<p>3. Dissemination of results (25/100)</p> <p>3.1. <i>EI articles published in indexed journals</i></p>

- 3.2. *EI articles published in not indexed journals (National / International Journals)*
- 3.3. *Books or book chapters on EI (excluding text books)*
- 3.4. *Education Conferences in which a member has participated (National / International Conference)*
- 3.5. *EI courses and seminars taught*
- 3.6. *EI Roundtables or conferences in which a member has participated*
- 3.7. *Dynamization and awareness activities of EI performed (conferences, etc.)*
- 3.8. *PhD thesis on EI*
- 3.9. *Registrations and operating patents in IE*
- 3.10. *Subjects published in open access systems(First published / Update / Massive Open Online Courses)*

4. EIG composition and training of its members (15/100)

- 4.1. *EIG members with accredited training in EI*
- 4.2. *Teaching training hours received in EI*
- 4.3. *Committees in which teachers collaborate*
- 4.4. *EI Awards to EIG members*

5. EIG Cooperation (15/100)

- 5.1. *Actors with whom the EIG stably cooperates (National / International)*
 - 5.2. *Schools involved in the EIG*
 - 5.3. *EIGs with which the group collaborates on EI projects*
 - 5.4. *Participation in transversal projects (As subproject / As coordinator)*
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4. Conclusions

The EIGs assessment methodology is a proposal to foster the continuous quality improvement in university and its adaptation to the EHEA. The design of the methodology is based on the WWP planning model, which seeks to integrate the technical aspects of quality improvement, with the relationship between the university and society and taking into account the context of the UPM to try to improve their educational strategic lines of action. It is a participatory design that has involved most relevant actors related to innovation and quality in the university. The scope of the methodology is new in the university level, in which most published experiences are reduced to the level of assessment of teacher quality and the methods used, but do not provide an analysis at the level of innovation structures.

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