RESEARCH AND EDUCATIONAL INNOVATION

E. Rosales-Asensio1, E. González2

1 Departamento de Física. Universidad de La Laguna (SPAIN)
2 Departamento de Ingeniería Química y Tecnología Farmacéutica. Universidad de La Laguna (SPAIN)

Abstract

The relations between research and teaching practice have always been complex and unfriendly for the Spanish universities, at least as far as technical teaching is concerned. Many teachers do not seem inclined to incorporate the advances of research into the field of teaching and learning. They view the researchers with suspicion, as theorists (although their investigations are empirical) who do not know the reality of the classroom. It is remarkable that this dissociation between research and professional practice should occur in teaching (teaching is a professional activity) while in other professions, professionals are very aware of the latest research. This paper investigates this dissociation and compares the integration of research and teaching practice existing in other countries with the situation in Spanish technical education.

Keywords: research and higher education; teaching recognition; university teaching career.

1 INTRODUCTION

You only have to look at the number of Higher Education journals to realize the abundance of published research on teaching and learning. The number of such journals and research articles has grown significantly in the last 20 years, especially in the Anglo-Saxon area where there is almost no area of knowledge that is taught in universities that does not have one or more journals dedicated to teaching and learning in one’s discipline. Much research on teaching and learning has also been published in more general Higher Education journals. However, for the area of technical education in Spain, this research activity lags far behind that of other countries.

The immediate questions to ask ourselves would then be:

a) Does the innovation in the didactic procedures lead to their evaluation and consequent investigation and publication of results?

b) Or is it rather the need to research and publish that is stimulating experimentation and innovation in university didactics?

The two previous questions could be answered in the affirmative because they are not contradictory, and it is worth asking the two questions. If there are innovations of any kind, it is advisable to evaluate them by examining the results. The not always well-accepted innovations in the processes of teaching and learning [1] come to some extent from the new emphasis (teaching focused on learning) that lead us first to a critical reflection on what we already do know. For some teachers, finding new ways to teach a class and organize the work of students is at least a stimulus. However, this is not always the case. There is no lack of teachers (and academic authorities) for whom what already works well must be left as it is. This position is not without its logic, especially if it is thought that the ceiling of excellence has already been reached. This updating and these innovations take us (they should take us) almost automatically to the need to evaluate their effectiveness in students’ learning, and we are already pursuing research approaches.

If the emphasis is on the second question, it seems clear that, given the necessity (or advantages) of researching and publishing, a new line of research has been opened for many professors, which few had thought possible. This research has greatly stimulated pedagogical innovation; research and educational innovation are in fact clearly linked [2]. It is not necessarily a question of great innovations; many are minor innovations but ones that are very beneficial for students’ learning. Nor is it alien to this resurgence of didactic research at the university, which is much publicized, and which discusses the relationship between research productivity and quality of education [3].

Most of the investigations to which we are referring have the following three characteristics; 1) they are made by university professors, 2) with data from their students and 3) are published in good
journals. We might add that most are relatively simple. The same could be said of other research
carried out by teachers at other educational levels.

Although there is a wide variety of approaches in this research, it usually aims to evaluate some
aspect (methods, didactic strategies, modes of evaluation, etc.) of their teaching, depending on the
results or the change in students. These results are not always just related to academic achievement;
they also relate to motivation, class climate, student satisfaction, possible changes in self-regulation in
the study, self-efficacy, study approaches and other relevant variables related to teaching and
learning.

2 METHODOLOGY

For this research, a survey was carried out on a representative sample of professors from Spanish
universities (both public and private) in technical areas. In this survey, the university professors were
asked about what they were most interested in, research or teaching; if they believed that there was
an overemphasis on research and publications as a means of promotion; and if the first criterion of
promotion should be teaching rather than the number of publications.

The intention of this survey is to evaluate whether there is an overemphasis on research and
publications as the obligatory and almost unique route by which Spanish university in technical areas
achieve promotion. Naturally, this article, rather than questioning the important research function of
the university professor (which is beyond doubt) as it has always been understood, aims to unveil the
feelings of the faculty in Spanish technical universities about the debate "research versus teaching"
and assess whether it is necessary to reconsider such relationship.

3 RESULTS

It is pointless to speak of improving the quality of teaching without acknowledging the efforts of so
many teachers to improve it. If research is more important than the effort (and time) involved in getting
students to learn, it is not easy to motivate teachers to improve their teaching practices and to think
about possible and often necessary innovations. In the promotion activities of the universities, in the
speeches, in the documents on Web pages, etc., there is talk of the excellence of the training offered
by Spanish universities, but according to the current scheme, the teachers who truly dedicate
themselves to teaching excellence are at risk of not meriting, or being considered for promotion.

Sometimes, informal comments suggest that what matters to progress and consideration in the
university is to dedicate oneself to research, to publish numerous papers, and consequently, to
consider teaching a waste of time. It seems that in some university areas, there is no shortage of
people who think that teaching and students are a necessary evil and who act accordingly. In some
academic centers, decisions regarding the curriculum, schedules, etc., are made depending on the
desires, convenience, and pressure of some teachers (especially those who have seniority or are in
high positions) who prefer to focus on other things (such as research projects) because they are
aiming for promotion, which gives them prestige and even brings them a higher income and additional
benefits. The students and their learning are in the background because at the moment of truth, they
matter very little in the professional career; rewards are what matter. It cannot be said that this is a
general theme, but the results invite us to reflect in that direction.

It is not just about public prestige and recognition; research and publications are also what is taken
into account as a priority for promotion in the university. A university professor is considered a true
academic only if he investigates and publishes in the scope of his specialty, and not if his life is
dedicated to his classes and his students. Many university professors quickly learn to recognize who is
really an academic just by looking at their resume and looking at their publications. What does not
appear in the curriculum is the quality of their teaching, which remains invisible, nor does the quality of
their students' learning appear. To deduce that research and publications translate into excellent
teaching is a somewhat risky deduction.

There is growing recognition of the complexity of academic work, which cannot be reduced to
research and publications associated with what has traditionally been considered academic, and that
the same concept must, therefore, be redefined in a way that explicitly includes teaching and learning
with all its consequences in terms of recognition and promotion. It is necessary to look for that
teaching excellence, proclaimed so insistently, that promotes and facilitates a type of research that
subtracts neither energy nor time for teaching and that contributes to its excellence in a more direct way.

What teachers do must be made visible so that learning is possible and can be known and evaluated. It is precisely this visibility that leads us to the field of research and publications that consequently stimulates innovation because if we want to investigate something related to learning, we must first think about what we can investigate, look for ideas and models, etc.

The greater integration of research and teaching will be achieved if teachers have the opportunity not only to advance in the knowledge of their own discipline but also to explore the best ways of transmitting it. In this way, the greater (or better) integration between research and teaching can be debatable. What seems clear is that a very obvious means to manifest this integration is to investigate and publish articles (or chapters of books, etc.) in which the emphasis is placed on the processes of teaching and learning rather than on the content taught.

Although publication is the clearest and most convincing way for teaching efforts to be recognized (publications are legitimately included in the curriculum itself and surely provide added satisfaction to the teacher), there should be other ways of communicating and publicizing this teaching professionalism. This can be duly recognized and taken into account for all purposes, especially promotion prospects and does not exactly coincide with what we call research and publications.

It is important to present a more complete and balanced picture. Research in the Spanish universities (specifically in the technical areas) should support the quality of teaching and not be an obstacle. This obviously does not mean that what has to be done is to focus on research on teaching and learning; this is something that a few teachers will probably do. Any kind of research done at the university should contribute to the excellence of teaching and learning, but this is something that, as can be seen from how much research has been done, should not be taken for granted. Sometimes, it happens, and other times, it does not happen.

The results were obtained from questionnaires completed by professors from different Spanish universities located in different socio-cultural and economic contexts. These results showed that the majority of respondents think that research is a fundamental aspect and is compatible with the teaching dedication of a university professor. Likewise, teachers consider that the integration of research and teaching is limited and conditioned by the lack of time for teachers to conduct research with their own students. It should be noted that most of them think that activities such as the presentation of the research lines of their Departments; the holding of seminars (for students) in order to disseminate their Departments’ research results; or the participation of students in Student Congresses, could be useful so that the students can collaborate in research tasks while improving their academic education. Finally, it should be noted that the results obtained for the case of both face-to-face and distance universities, located in different socio-cultural contexts, are similar.

4 CONCLUSIONS

For too long it has been considered that the relevant knowledge of a university professor is the knowledge of his discipline, without paying particular attention to how this knowledge is constructed and transmitted. Although this is changing, it cannot be said to be a universal change.

A challenge and a need for technical education in Spain will be to help teachers to answer their questions about the learning of their students while carrying out a type of research and visibility that manifests itself very clearly in the publications. To begin with, we must re-conceptualize what teachers of technical education in Spain understand by professional teaching and legitimize (recognize, facilitate and take into account) the research of teachers made with their own students on teaching and learning. Integrating into Spanish academic culture, this meaning of teaching professionalism is a value that must be recognized and stimulated.

Promoting and facilitating the publication of articles and books in this line is important. There are professors who do not dare to seriously consider these investigations, which they sometimes do very informally because the foreseeable future of their study is to keep their papers in a folder. This is what the academic authorities could try to remedy, stimulate and open channels of publication however modest they may be. One difficulty may be in the norms, at least implicit, of the University, or of some faculties in particular, about what is and is not an appropriate investigation.

What gives many teachers professional identity and what responds to their personal vocation is precisely teaching. They live in their classes and their students. These teachers do not investigate
whether there are channels that are suitable for their possibilities, and whether or not these suitable channels exist no longer depends so much on themselves.

There are teachers who not only would like to investigate, but this is also something they need for their professional advancement; however, for some reason or other (very often for lack of time), they simply cannot investigate within the scope of their discipline. However, this paper proposes that an integration of teaching and research is a very viable way to develop more fully both the teaching vocation of the technical studies teaching staff in the Spanish university and other legitimate professional aspirations.

REFERENCES

