

Percepción del profesorado universitario sobre el impacto de la formación permanente/continua del docente en su desarrollo profesional

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RESUMEN

El objetivo de este estudio es identificar la percepción de los docentes que participan en cursos de formación pedagógica en cuanto al impacto de la formación en su desarrollo profesional, los beneficios percibidos en términos de mejora de sus competencias docentes y las oportunidades de aplicar lo aprendido durante la formación en el aula. Las condiciones actuales definen nuevos escenarios en la formación y desarrollo profesional docente. Las competencias del profesorado necesitan ser renovadas, actualizadas y desarrolladas mediante planes de formación y desarrollo profesional, con el fin de asegurar los estándares de calidad de la formación universitaria. MÉTODO. El artículo presenta un estudio realizado en una universidad española y analiza el impacto de la formación pedagógica del profesorado universitario en cuanto a los beneficios percibidos de la formación en su desarrollo profesional. Los datos cuantitativos se recopilaron a través de un cuestionario ad hoc administrado después de asistir al curso. RESULTADOS. La valoración de los cursos de formación es positiva, así como el feedback ofrecido por los participantes sobre los beneficios percibidos por su participación. La mitad de la muestra expresó un juicio positivo sobre la posible aplicación del aprendizaje a su enseñanza. DISCUSIÓN. Los resultados muestran que la evaluación del curso por parte de los participantes y la percepción de los beneficios pueden ser un predictor razonable de la posibilidad de aplicación en la práctica.

Palabras clave: formación; profesorado; percepción; impacto de la formación; desarrollo profesional docente

ABSTRACT

The aim of this study is to identify the perception of teachers participating in pedagogical training courses as regards the impact of training on their professional development, the perceived benefits in terms of improving their teaching skills, and the opportunities to apply what they learned during the training in the classroom. Current conditions define new scenarios in professional teacher training and development. The skills of teaching staff need to be renewed, updated and development by means of training and professional development plans, in order to ensure the quality standards of university education. METHOD. The article presents a study carried out at a Spanish university and analysed the impact of university teachers' pedagogical training regarding their perceived benefits of training in their professional development. Quantitative data was collected through an ad hoc questionnaire administer after attending the course. RESULTS. The evaluation of the training courses are positive as well as the feedback offer by participants of perceived benefits for their participation. Half of the sample expressed a positive judgment on the potential application of learning to their teaching. DISCUSSION. Results show that course evaluation by participant and perception of benefits can be a reasonable predictor of possibility of application into practice.

Key words: general training; teachers; perception; impact of training; teacher professional development

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1. Introduccion

The implementation of the European convergence process in higher education has required Spanish universities to harmonize, transform and change almost all aspects of their structures and has defined a new model for universities. The main protagonists of this process of change are the teaching staff. In recent years, the quality of university education has been the focus of much discussion (Madrid-Izquierdo, 2005; Valcarcel-Cases, 2003) and the need to improve teaching skills and pedagogical knowledge among teaching staff has been highlighted as a key issue for the future. The tasks performed by university lecturers are not static or stable, and are instead adapting to new changes and demands. Knowledge of teaching and learning in the university environment has increased rapidly in recent years, and has changed our understanding of these processes (Pickering, 2006).

In this context, training of university teaching staff is a key factor in the implementation of the universities' transformation. The professional performance of university teachers must meet certain requirements in terms of the quality of its results. This involves a substantial change in how the teaching and learning process is conceived, in professional profiles, in knowledge and in the way lifelong learning is understood.

At Spanish universities, unlike in other countries (Knight, Tait, & Yorke, 2006; Roxå & Mårtensson, 2008; Weurlander & Stenfors-Hayes, 2008), there has been no institutional tradition or culture that considers teacher training as essential. It has been taken for granted that the professionalism of teaching staff is based on the lecturer's experience, which is gained either during his/her time as a student or while teaching. "Being a good professional" was enough to be considered a good teacher, a good communicator and transmitter of knowledge (Madrid-Izquierdo, 2005). With the challenge presented by the convergence process, fresh debates and studies have focused on the training of university teaching staff and some training alternatives have been suggested in response to these changes (Alías, 2006; Torra-Bitlloch, 2011; Valcarcel-Cases, 2003).

The current conditions define new scenarios in teacher training. Two benchmarks for consideration in teacher training are being created: the first is the context of university education, its mission and the new challenges it faces; the second is the professionalization of teaching as a means of improving the quality of teaching. Teaching is seen as a specialized activity, i.e. it has its own area of expertise and requires specific training to be undertaken successfully.

New challenges mean that teachers need to develop skills related to learning approaches based on new technologies, personal skills linked to the student's learning and teaching process, and new methodological approaches. The skills of teaching staff need to be renewed and updated by means of training plans, in order to ensure the quality standards of university education.

After recognising these challenges that Spanish universities face, most higher education institutions have implemented lifelong learning plans for their teaching staff. Numerous models and proposals for carrying out these training programmes have been suggested, as well as equally numerous questions that have arisen without yet being evaluated. Many authors acknowledge the lack of studies assessing the impact of teacher training programmes (Flecknoe, 2002; Pineda, Ucar, Moreno, & Belvis, 2011; Prebble, Hargraves, Leach, Naidoo, & Zepke, 2005). It is therefore necessary to acknowledge that there has been limited assessment of training plans for teaching staff, and more in-depth studies are needed in order to improve these programmes. Assessment of the impact of continuous training programmes is a useful strategy for ascertaining their situation and the results obtained, to identify their strengths and weaknesses and to propose measures for improvement.

2. Assessment of the impact of lifelong learning programmes for professionals

The changes made as a result of the convergence process in European higher education support the need for lifelong learning and professional development for teaching staff. At the same time, no other training has been called into question as extensively as lifelong learning (in almost all contexts) due to the large sums of money invested in it and the meagre results obtained from it (Cervero & Rottet, 1984; Cervero, Rottet, & Dimmock, 1986; Coffey & Gibbs, 2000; Gibbs & Coffey, 2000). Due to the trend towards the “audit society” (Blackmore, 2009), the field of lifelong learning is increasingly required to make the invisible visible, i.e. to show evidence of the results obtained from the training, at an individual level and also in terms of its impact on the organization. Presenting this type of evidence is one of the more complex demands faced by researchers and teaching professionals, since these phenomena are difficult to register and interpret (Browne, Kelly, & Sargent, 2008; Darling-Hammond, 2006; Diez, 2010). On the other hand, the literature on assessment of the impact

of teacher training is limited, and it suffers from the dichotomy of “evaluation for improvement” or “assessment for accountability” (Blackmore, 2009; Dede, Ketelhut, Whitehouse, Breit, & McCloskey, 2009; Diez, 2010) and offers little explanation of the conditions that make a programme successful or otherwise, and why.

However, the specialized literature contains some studies with interesting results. Coffey & Gibbs (2000, 2004) present a study on the impact of training courses for lecturers based on a scale of the quality and orientation of teaching. These authors analyse the changes in the teachers’ conception of education as a result of attending a training course, and the changes that took place in the students’ learning. The authors present positive results in that the training increased the focus on learner-centred teaching, improved aspects of teaching such as the feeling of effectiveness and also led to an improvement in students’ learning. The authors mentioned difficulties in identifying the conditions and characteristics of the training courses, making it difficult to identify the characteristics that lead to a course having some impact or otherwise. Weurlander & Stenfors (2008) present a study on teachers’ perception of the impact of a training course. These authors report results that show changes in the habits and ways of thinking among the teachers studied after their participation in a training course. They emphasize the increased professional confidence among the teachers involved, and mention the opportunity for think about how they work and their skills as teachers as a positive factor. According to these authors, some methodological aspects of training which determine the impact on teaching are the length of the courses and the teacher’s discipline, as well as the culture within the department. Longer courses have a positive impact in terms of the teachers’ effectiveness. Meanwhile, the perception of the importance of teaching is influenced by the teacher’s discipline and the culture of the department.

In a comprehensive literature review, Preddle et al. (2005) examine research evidence of the impact of academic development initiatives. They argued that short training courses comprise a large proportion of the work of most academic development units in higher education though this type of training tend to have limited impact on changing teacher behaviour. In addition, research of the impact of short courses usually draw on data collected from self-report instrument in which trainees or participants express their opinion as to the effectiveness of the training course they have experience. Despite the fact of using this weak indicator of evaluation, there are some studies that provide evidence of the impact of training short courses based on data collected from opinion indicators. For example, Rust (1998) found that participants’ indications of their likelihood to change after the workshop were significantly positively correlated with the extent of reported change four month later. Moreover, evidence from the telephone interviews backed up the questionnaire responses and interviewees were able to provide examples of the changes they had introduce as a result of attending a course.

3. Aim of the study

Firstly, we intend to examine which is the general evaluation of the courses made by participants. Secondly, we intend to identify which are the benefits that participants perceive they obtain as a consequence of having participated in a training course. Thirdly, we aim to observe if there is an association between the general evaluation of the courses and the benefits perceived by participants. Finally, we examine participant's intention to apply what they have learned during the course to their daily work as teachers.

4. The continuous training programme for teaching staff

The Rovira i Virgili University Teaching Strategic Plan is based on an institutional commitment set out in the programme's objectives at government level as the need to transform the training space and process. The URV Strategic Teaching Plan falls within the context of the European Union and takes the guidelines of the European Higher Education Area as its benchmark. The Bologna Declaration (1998) defines a joint framework for the university's work and cooperation, from both the structural and organizational standpoint and the teaching model. This model is a clear shift from the teacher's perspective (teaching) to the student's perspective (learning) in order to define what graduates need to acquire in terms of learning objectives based on competencies as the core of the training process. At the URV, this takes place in two areas: the teacher training project, in which the professional and academic profile are defined, and the learning objectives for each qualification, taking their competencies and skills into account.

The implementation of a new training project based on student-centred learning requires a change in the way teaching is understood, and in the organization of its constituent parts for the process to succeed. A new teaching model requires a review and improvement of the teaching process. Teacher training therefore becomes a key component in the transformation of teaching, leading to the formulation of a Training Plan for Teaching and Research Staff at the URV.

Within the Strategic Teaching Plan, the Teaching and Research Training Plan (PROFID) is a tool providing care and support for teaching staff within their own training, and contributes to the achievement of a high quality university for all, appropriate to modern society.

The PROFID has two basic lines of action; first, the Specific Training Programme, consisting of training courses requested by interested teachers and taught by institutions outside the university, which focus on meeting the specific needs of teaching staff; and second, the General Training Programme, consisting of training courses designed, managed and run by a specific administrative unit within the university itself. For this study,

only questionnaires administered to participants in general training courses were taken into account. This decision was due to the fact that one of the objectives of this research is to assess the impact of this training on teaching, evaluate the results of the programme and suggest areas for improvement in teacher training.

The General Training Programme for teaching staff at this university, which is part of the Training Plan for Teaching and Research Staff, comprises a number of courses with varying themes, duration and methodologies. It consists of a programme of annual lifelong learning activities including courses, workshops, working seminars and specific training initiatives in centres, departments, and work and advice sessions for teaching staff. The subject areas that determine the areas of action in the training offered are: University teaching, Tools for teaching, the European Higher Education Area, Teaching and Research Development, Health and Occupational Hazards Prevention, University Management and Languages.

5. Data and Methodology

The data were collected by administering a questionnaire to the participants in thirteen continuous training courses within the PROFID. The questionnaire was administered after the end of each course, with a margin of 3 to 7 days after the end date of each training initiative.

The questionnaire was designed on an ad hoc basis for this research. The questions were formulated according to the research objectives and the revised theoretical framework. Before the questionnaire was administered, it was validated by judges and program's coordinator and a pilot test was carried out. After some changes were made, it was administered to participants in continuous training courses. The questionnaire was distributed electronically via e-mail to 191 participants. The questionnaires were answered anonymously and voluntarily. The rate of responses received was 67% of the total number of participants who completed the continuous training courses selected. In total 128 responses were received and all selected courses were represented. Table 1 shows the selected courses included in our study.

	N
Programming and development by competence of the subjects and/or modules	3
The puzzle technique as an assessment activity for large groups	5
Problem-based learning and project-based learning	5
Tutorials at university	19
The lecture	4
Cooperative learning workshop	7
Assessment of learning	11
Competencies assessment system using electronic tools	9

	N
How to work on emotional intelligence	9
Public speaking	11
Gender mainstreaming in science and teaching	11
The twenty century's students	17
Applying Web 2.0 to teaching	17
Total responses received	128

Table 1: Continuous training courses (PROFID) selected

The questionnaire consists of four parts. The first part includes demographic information on the participating subjects (age, gender, teaching category, knowledge area). The second part consists of 6 items based on a six-point Likert scale, in which participants were asked to indicate their agreement-disagreement with various statements related to the evaluation of different aspects of the course: goals, theory-practice balance, learning activities, methodology, resources, and materials. The third part consist of 5 items based on a six-point Likert scale of agree/disagree in which participants were asked to indicate their perception of the impact of the training in terms of the acquisition of teaching knowledge and skills, the opportunity to carry out new activities in the classroom, professional development, the acquisition of skills and strategies to apply in teaching. Finally, the fourth part uses an open question format to ascertain the justification of how the participant will put what they have learned during the training into practice in their teaching.

Regarding data handling, firstly we examined the descriptive results identifying frequency and percentage of the distribution of individuals according to age, gender, knowledge domain and teaching position. Secondly, we carried out a descriptive analysis of the results of the second and third part of the questionnaire, that is the item general evaluation item set and the perceived benefit item set. Cronbach's Alfa was .92 for the general evaluation item set and .93 for the perceived benefit item set. Thirdly, we create three new variables: 'general evaluation', 'perceived benefits', and 'likelihood of application'. We average the responses of the general evaluation item set to create a composite scale of 'general evaluation' (Ge-Eva). A training course is assumed to have different aspects that can be assessed independently of each other, such as clarity of objectives, quality of presentations, activities, methodology, etc., in which some aspects may have been rated with high scores, while the scores for others may have been lower. However, they are all part of the same process, and contribute to the overall assessment. Likewise 'general evaluation', we average the responses of the perceived benefits item set to create a composite scale of 'perceived benefits' (Per-Ben). Regarding the last new variable, 'likelihood of application', we classified each response in four categories where 0=no answer, 0= negative statements, 1=ambiguous statements, and 2=positive statements. Finally, we perform a Pearson product-moment correlation in order to determine the association between the single items and the composite variables.

6. Results

6.1. Descriptive results

Approximately half of the participants came from the area of Social Sciences and Humanities (52.71%), while the rest were distributed between Engineering and Chemistry (27.90%) and Health Sciences (19.37%). Approximately three quarters of the sample are female and only a quarter are male. The same difference was apparent in participation by gender for the area of Social Sciences and Humanities, while the difference is much greater in Health Sciences, and only 8% of participants are male. The participation by men and women is the same in the area of Chemistry and Engineering. These differences in participation by gender in Social Sciences and Humanities and Health Sciences could be explained by the fact that they are areas with a predominance of women among their teaching staff, as opposed to Engineering and Chemistry, in which men still predominate, although this is a declining trend.

As for age, our results coincided with many other studies in that participation in training decreases as age increases. With regard to teaching category, the largest group in this sample are tenured lecturers and senior lecturers, i.e. individuals with a permanent position within the university's teaching staff who would be in a position to introduce changes in the teaching methods of teaching teams. This is interesting, because it shows some level of commitment and dedication to teaching among the leaders of teaching teams.

6.2. General assessment of the course and perceived benefits

The data from the questionnaire is summarized in Table 2 and Table 3.

Table 3 shows the result for general evaluation item set. The results show that participant generally evaluated in a positive was the different characteristic of the course. All items have at least 80% of positive answers (quite agree- sufficient agree-totally agree). The item with the highest score is 'training course's goals were clear to me' with 92% of positive answers. The item with the lowest score is 'the content of the course was enough to introduce changes in my teaching practice' with 80.5% of positive answers.

To what extent do you agree or disagree with the following statements regarding the training course you attended?	Totally disagree 1	Sufficient disagree 2	Quite Disagree 3	Quite Agree 4	Sufficient agree 5	Totally agree 6
E1. Training course's goals were clear to me	1 (,8%)	4 (3,1%)	5 (3,9%)	13 (10,2%)	51 (39,8%)	54 (42,2%)
E2. There was a balance between theory and practice	8 (6,3%)	6 (4,7%)	6 (4,7%)	25 (19,5%)	28 (21,9%)	55 (43,0%)

To what extent do you agree or disagree with the following statements regarding the training course you attended?	Totally disagree 1	Sufficient disagree 2	Quite Disagree 3	Quite Agree 4	Sufficient agree 5	Totally agree 6
E3. The content of the course were enough to introduce changes in my teaching practice	6 (4,7%)	8 (6,3%)	11 (8,6%)	25 (19,5%)	35 (27,3%)	43 (33,6%)
E4. The learning activities help to understand the content of the course	4 (3,1%)	6 (4,7%)	9 (7,0%)	18 (14,1%)	33 (25,8%)	58 (45,3%)
E5. The methodology was adequate to participants' features.	2 (1,6%)	5 (3,9%)	6 (4,7%)	18 (14,1%)	34 (26,6%)	63 (49,2%)
E6. Materials and resources were adequate to learn the content.	0 (0%)	5 (3,9%)	8 (6,3%)	17 (13,3%)	39 (30,5%)	59 (46,1%)

Note: Data is shown in percentage.

Table 2 shows the distribution of the sample in our study according to categories of age, gender, teaching category, and knowledge area.

Table 4 shows the results for perceived benefit item set. Likewise the previous item set, these items show relatively positive answers regarding the perceived benefits after attending a training course. However, the scores are a slightly more distributed. These items have at least 75% of positive answers (quite agree- sufficient agree-totally agree). The item with the highest score is 'improve your professional development' with 86.7% of positive answers. The item with the lowest score is 'acquire knowledge about new teaching strategies and techniques' with a 75% of positive answers.

These data, in general, suggest a positive general evaluation of the courses. This may be a contested result because respondents in this sample might be the ones who have had a good experience in attending these courses so they might be willing to answer the questionnaire. Consequently, we may be in the presence of a bias sample. However, the response rate was considerably high and we may argue that if the response rate would have been 100%, the results would not have been completely different.

6.3. Perceptions of the opportunities to apply learning to teaching

The likelihood to introduce changes in the teaching practice depends on, to a great extent, the perception that participants have about the possibilities to apply what they have learned into their teaching. In order to measure this element, we draw on the data collected by the open-ended question. We classified the open answers in four categories according to the nature of the statements: negative statements, positive statements, ambiguous statements and no answer. We gave a number to each of these categories based on the likelihood of application. No answer and negative statements got a 0, as we considered that there was a negative reaction to the training course and the likelihood to apply what they have learned

is unlikely. Ambiguous statements got a 1 as we considered there is a suggestion in the statement of the possibility of application though limited. Finally, positive statements got a 2, as we believed that the possibility of application is the highest because participants are able to express a concrete way about how they are considering applying what they have learned during the course.

Sample statements in the first category which is defined by the negative statements were as follow:

“The subject matter of the course is not related to my teaching...” “... I don’t think I will apply what I learnt to my teaching ...”

To what extent the course help you to...	Totally disagree 1	Sufficient disagree 2	Quite Disagree 3	Quite Agree 4	Sufficient agree 5	Totally agree 6
B1. Acquired new knowledge related to the teaching practice	7 (5,5%)	4 (3,1%)	9 (7,0%)	27 (21,1%)	36 (28,1%)	45 (35,2%)
B2. Improve your professional development	1 (,8%)	7 (5,5%)	9 (7,0%)	13 (10,2%)	44 (34,4%)	54 (42,2%)
3. Do new activities in your teaching	12 (9,4%)	6 (4,7%)	11 (8,6%)	22 (17,2%)	34 (26,6%)	43(33,6%)
4. Integrate theoretical and practical knowledge about teaching	5 (3,9%)	8 (6,3%)	12 (9,4%)	26 (20,3%)	41 (32,0%)	36 (28,1%)
5. Acquired knowledge about new teaching strategies and techniques	11 (8,6%)	12 (9,4%)	9 (7,0%)	21 (16,4%)	35 (27,3%)	40 (31,3%)

Table 4: Perceived benefits

By contrast, the category of positive statements included the responses in which individuals stated that they would apply what they had studied in the training to their teaching, e.g.

“The techniques I learned will enable me to assess students’ competencies. For example, for the teamwork competence, working on a wiki is a group project for which as a lecturer, you can find out the contribution of each participant in the group; previously they presented a project as a group, but you didn’t really know whether they had all participated or to what extent ... “

The category of ambiguous statements includes the responses that were unclear as to whether they will apply the course content or not, such as:

“Nothing that was explained to me on the course. However, I will use other points such as awareness in the use of language, the use of ICTs... “

Table 5 shows the descriptive results for this variable. Fifty per cent of the sample expressed a positive statement regarding the likelihood of application of what they learned during the training course into their teaching practice. This result is considered relative low if we compare it with the relative high scores in general evaluation items and perceived

benefits items analysed in the previous section. Thirty per cent of the sample expressed ambiguous statements while 18.8 % expressed negative statements or gave no answer.

Type of statements	Frequency	Percentage
No answer and Negative statements	24	18.8
Ambiguous statements	39	30.5
Positive statements	65	50.7
Total	128	100,0

Table 5: Perceived opportunities for application

Our last research goal was to identify if there is any association between the general evaluation of the courses, the perceived benefits and the likelihood of application of what participants have learned back to their teaching practice as a result of attending a training course. In order to do this, we performed a bivariate correlation analysis among the variables. Table 5 displays the correlation coefficients.

There were positive large size significant correlation coefficient among the variables from the general evaluation item set and the perceived benefits item set. The correlation coefficient range among these variables varied from $r=.522$ to $r=.831$ with a significant level of $p<.001$. However, as correlation does not imply causation, we cannot concluded that high rates in the general evaluation item set produce high rate in the perceived benefits but we can suggests that both item set are significantly associated. Participants who score high in the general evaluation items would also score high in the perceived benefits items, and vice versa.

There were positive moderate to small significant correlation coefficients among the variables from the general evaluation item set, the perceived benefits item sent and the likelihood of application. All the items except for one in the general evaluation item set had a significant correlation with the likelihood of application. This item referred to the adequacy of the methodology used in the course. This suggests that the methodology might not be relevant or might not influence the possibility that a participant apply or not apply what he/she learned back to their work. The item which is referred to the balance between theory and practice had the highest correlation coefficient in this set ($r=.32$ $p<.001$). This finding might suggest that this is an important feature in a training course to promote subsequent application in the practice. The rest of the items in this set, clarity of the training's goals, enough content, well-design learning activities and quality of the learning materials, might also be a significant influence in the likelihood of application though to a lesser extent.

All the items of the perceived benefits set are significantly correlated with the likelihood of application, though the item related to the improving of the professional development had a smallest correlation in the set. This finding might suggest that a positive perception of the benefits received after attending a training course is relevant to increase the likelihood

of application. Participants who score high in acquisition of knowledge, in the possibility of doing new activities in teaching or gaining new knowledge about teaching strategies and techniques also expressed a positive statement about the possibility of application what they learn in the course back to their work as teachers.

	B1. Knowledge	B2. Professional development	B3. New activities	B4. Theory and practice	B5. Teaching strategies	Likelihood of application
E1 (training's goals)	,671**	,558**	,596**	,688**	,535**	,297*
E2 (theory and practice)	,665**	,585**	,631**	,631**	,636**	,320**
E3 (content)	,831**	,637**	,778**	,743**	,678**	,295*
E4 (activities)	,734**	,616**	,609**	,665**	,648**	,278*
E5 (methodology)	,658**	,673**	,578**	,646**	,522**	,143
E6 (resources)	,704**	,680**	,670**	,660**	,613**	,210*
Likelihood of application	,355**	,210*	,338**	,307**	,349**	1
N=128(*) p<.01, (**) p<.001						

Table 6: Correlation coefficients among general evaluation, perceived benefits and Likelihood of application

We also performed a bivariate correlation analysis between the composite variables of general evaluation (M=4.93), perceived benefits (M=4.61) and likelihood of application. There is a significant positive and large size correlation coefficient between general evaluation and perceived benefits ($r=.83$ $p<.001$). There is a significant positive and moderate size correlation coefficient between general evaluation and likelihood of application ($r=.29$ $p<.001$) and between perceived benefits and likelihood of application ($r=.35$ $p<.001$). These findings suggest that particular features of a training course, participants' perceptions of the benefits received, and the likelihood of application are associated each among other.

7. Conclusions

The aim of this study was to examine the general evaluation of a training course; the participants' perceived benefits and the likelihood of application as a consequence of attending a training course offered to academic teachers at a Spanish university. A first overview of the results suggests that participants had a positive reaction after attending the training courses. Eighty per cent of the respondents reported a positive evaluation the training course and seventy-five per cent reported positive answers regarding the benefits they received as a result of attending a course. Half of the sample reported positive statements regarding the likelihood of application what they learned during the course back into their teaching practice.

In addition, the findings suggest that there is a significant association between the general evaluation of the course, the perceived benefits and the likelihood of application. Participants who score high in general evaluation items also score high in their perceived benefits and

expressed positive statements regarding a possible application of what they have learned into their teaching practice. Therefore, general evaluation rating and perceived benefits can be satisfactory indicators of the possibility of application and how likely participants are to change their teaching practice as a result of attending a training course. This findings support previous research that state that workshops ratings are reasonable predictors of likely impact (Rust, 1998). Brew and Lublin (1997) carried out a follow-up study of academic teachers who had participated in short courses on teaching and learning and found similar high proportions of staff declaring to apply the new ideas, strategies and techniques to which they had been introduced in their teaching practice.

However, researchers considered reaction or satisfaction measures as a weak indicator of impact (Holton, 1996; Prebble et al., 2005; Stes, Min-Leliveld, Gijbels, & Van Petegem, 2010). For example Holton questioned whether participants' reactions can be considered as a measured of impact though he considered reactions as an intervening variable (Holton, 1996). Therefore, more evidence is necessary to conclude that participants actually change their practice as a result of attending a training course.

8. Limitations

The work presented here has some limitations that must be taken into account when drawing conclusions. First, it is an exploratory study using data collected from self-administered questionnaires, which may contain a positive bias in their responses. The data also come from a single group source - in this case teaching staff. It is therefore necessary to carry out more extensive studies, using multiple analysis measures of the impact, and gathering information from various groups, such as students and trainers. Notwithstanding these limitations, the conclusions may be used both to introduce improvements in the training programme analysed and for more in-depth study of the impact of training on the professional development of teaching staff.

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