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Online Faculty Development and Assessment System (OFDAS)

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Résumé de l'article

The rapid growth of online learning has led to the development of faculty inservice evaluation models focused on quality improvement of degree programs. Based on current 'best practices' of student online assessment, the Online Faculty Development and Assessment System (OFDAS), created at the Canary Islands, was designed to serve the dual purpose of faculty development and classroom learning environment assessment. Results, as illustrated in this paper, show that the OFDAS encouraged faculty to reflect on the professionalism of their teaching skills. Implications are discussed in terms of emphasizing the process of online teaching, knowledge acquisition, and incorporating varying perspectives, all which yielded a comprehensive view of faculty teaching attitudes and their relationship to student's perceptions of their classroom environment.

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Abstract

The rapid growth of online learning has led to the development of faculty inservice evaluation models focused on quality improvement of degree programs. Based on current 'best practices' of student online assessment, the Online Faculty Development and Assessment System (OFDAS), created at the Canary Islands, was designed to serve the dual purpose of faculty development and classroom learning environment assessment. Results, as illustrated in this paper, show that the OFDAS encouraged faculty to reflect on the professionalism of their teaching skills. Implications are discussed in terms of emphasizing the process of online teaching, knowledge acquisition, and incorporating varying perspectives, all which yielded a comprehensive view of faculty teaching attitudes and their relationship to student's perceptions of their classroom environment.

Keywords: Faculty development; teaching professional skills; online student learning; environment assessment; online professional development

Introduction

Online Faculty Development and Evaluation System

The Online Faculty Development and Assessment System (OFDAS) is a voluntary professional skill program. The course encompassed three components: 1) online faculty professional skill learning experiences; 2) faculty professional skills learning assessments; and 3) a student online learning environment assessment.

The critical issues in designing OFDAS included, among others, planning, organizing, structuring, tracking, reporting, and communicating assessments – efforts which took time and required orderliness on the part of the online program advisers. Based on their experiences, we found the following five-stage design process to be a highly effective strategy:

1. Provision of a face-to-to face workshops (four hours long)

2. The design of sequenced, structured, and comprehensive lessons. The learning activities of these lessons sought to engage and direct the OFDAS faculty participants in the 'process' of professional skills acquisition

3. An online support system was established to help faculty scaffold their teaching and learning, provide a mechanism for targeted feedback from mentors, and provide a safe forum for sharing ideas and problems with other faculty participants

4. Provision and coordination of learning resources to help faculty successfully complete their learning activities

5. Provision of a detailed inventory of students online classroom assessments, which enabled faculty to reflect upon and access feedback on their teaching performance

The OFDAS model recognizes faculty personal and professional objectives at various stages of their academic career. As such, it was necessary to create diverse training strategies. Accordingly, prior to the implementation of the OFDAS, the amount of time needed to complete the professional development program was negotiated with higher education institutions. A formal face-to-face workshop was delivered prior to starting the online course as well. Finally, in an attempt to ensure intrinsic motivation and to encourage participation among faculty, an official learning certificate was developed.

Faculty Continuing Learning Opportunities: Skills development

The authors developed a framework for training professional skills reflective of student-centred education (Villar, 2004); that is, a framework that focused student learning experiences and processes within the university social context (Badley, 2000). Prior to engaging in the OFDAS, it was expected that faculty have a deep understanding of their scientific field, as well as requisite pedagogical and didactic skills specific to their discipline. Accordingly, the concept of 'professional skill' was defined by the authors as: *"an integrated set of knowledge, beliefs, abilities and attitudes that were basic for good performance in various university teaching settings."* Common elements in the OFDAS program were to develop faculty competence in the design of curriculum and course material, and help faculty acquire didactic and guidance skills (Tigelaar, Dolmans, Wolfhagen, & Van Der Vleuten, 2004). Three basic principles predominated in OFDAS: helping faculty understand that, 1) academics and students are different, thus curriculum and implementation of classroom methods must be designed to respect student diversity and identity; 2) professoriate are dependent on one another in collegial and classroom interactions; and 3) online faculty development courses increase one's own decision-making processes and learning by online student assessment. Consequently, ten professional skills were proposed (see Figure 1).

Online Assessment and Feedback

Online assessment of classroom teaching and learning processes has been the focus of numerous studies that examine the degree this method of assessment influences and facilitates changes within learning organizations. Online assessment questionnaires should contain student demographic information such as age and gender, as well as other items seeking students' opinions about the quality of the course (Lounsbury, Saudargas, Gibson, & Leong, 2005). Recommendations for the online classroom climate assessment has components similar to conventional assessments. For example, some scholars focused their attention on 'grading procedures' and were very explicit when such tasks, projects, and tests should be assigned (Summers, Waigandt, & Whittaker, 2005).

From an administrative point of view, research has been conducted examining 'why' online course evaluation should be used. According to this body of research, online course evaluations lower costs, allow more time for teaching, lessens administrative burden, and so on (Ballantyne, 2003). The question remaining for us, therefore, was whether online student feedback gathered from questionnaires (see Appendices A and B) actually does lead to improvements in teaching quality. Until recently, these types of feedback tools (i.e., questionnaires) have formed the basis upon which to compare teachers, departments, and even universities. However, although correlations have been found to exist between teaching quality and online student feedback, it does not necessarily imply causality, as other factors could also affect the quality of teaching over time (Kember, Leung, & Kwan, 2002).

Literature on students' assessment of classroom environments has been on the rise for over a decade (Aldridge & Fraser, 2000) and the field of learning environments has undergone remarkable "diversification and internationalisation" (Fraser, 1998, p. 7). Evidence (largely derived from on-demand university teaching quality assessments) has accrued regarding the potential of classroom learning environment assessments and their ability to improve university-level teaching and learning, as well as staff development (Dallimore, Hertenstein, & Platt, 2004). For example, classroom climate questionnaires administered in a field-specific class were found to result in reflective changes in learning and instruction (Wildman, Hable, Preston, & Magliaro, 2000).

Designing Powerful Interactive Learning Environments: The case of OFDAS

Following are some key features of the online course used in this study:

1. Faculty were given a professional skills handbook (Villar, 2004). This handbook (with specific focus paid to teaching innovation and student learning) reviewed several sources on college teaching, and identified critical professional skills related to class preparation, classroom structure, and organization.

2. Materials were broken down into ten lessons and released weekly, with ongoing updates revolving around seven basic modules or dimensions, similar to the teaching competencies framework suggested by Tigelaar, Dolmans, Wolfhagen, and Van Der Vleuten (2004). The analytic structure of 'professional skill' comprised four phases: 1) purpose, 2) uses, 3) educational setting, and 4) case study. In total, 156 PDF and HTML documents, 114 websites, ten *PowerPoint* presentations, and over 500 glossary educational concepts and references, were published online and hyperlinked accordingly.

3. Faculty discussed two topics in an online asynchronous forum: 'European Convergence issues,' and 'Students' efforts to cope with the new European credit system.' These topics were organized and released on a bi-weekly basis, and were accessible throughout the course. The final forum included postings on reflective questions (i.e., Socratic questions). Because we determined that 'participation' is crucial for learning, we built asynchronous online interaction into the design of the course. Indeed, when considering faculty postings to asynchronous discussions in online courses, Blignaut and Trollip (2003) remarked: "Determining the elements of faculty participation and involvement can lead to the development of improved skills, which in turn may lead to improved learner satisfaction, instructor satisfaction, and the lowering of attrition rates" (p. 153).

4. Faculty accessed email from a central course website, which enabled one-on-one interactions with mentors and other participants.
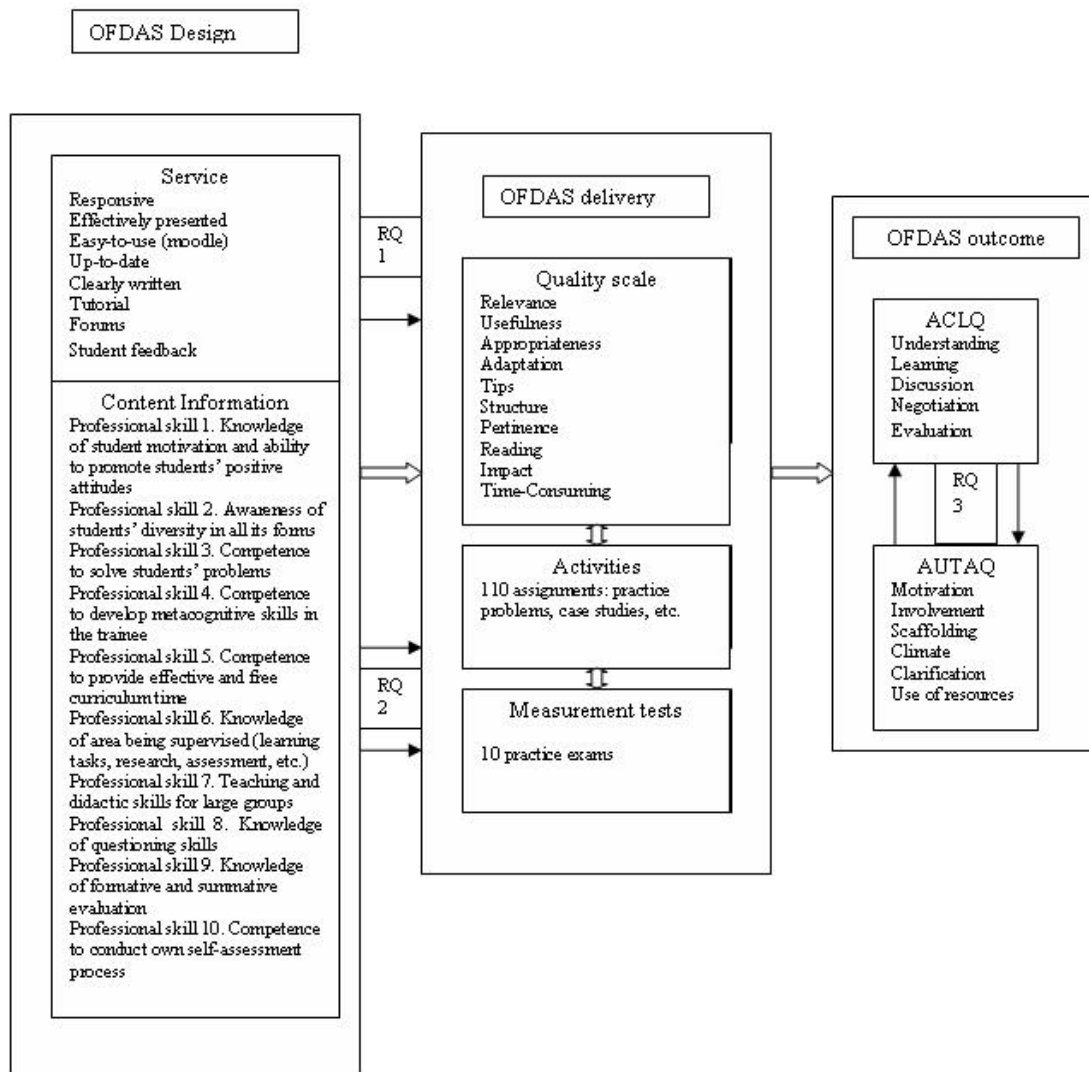
5. Faculty had access to online curriculum materials hyperlinked to related articles and institutions, notes, and grades.

6. Faculty could also download *PowerPoint* presentations, key concept maps, study guides, and other resources, etc.

7. Faculty submitted their learning activity assignments online using the central course web-interface or via email. All course assignments, which presented faculty with complex teaching and learning tasks, were designed to be meaningful activities that had real-life relevance.

8. Faculty engaged in activities that were designed to be 'realistic representations' of the tasks that the authors wanted to evaluate. As such, we allowed faculty substantial freedom in selecting activities, which according to Uhlenbeck, Verloop, and Beijaard (2002) are features of authentic assessment.

9. Faculty completed ten online tests. Each 'professional skill' test was programmed (random selection) to be unique and to provide faculty instant feedback detailing their results on various tests. Faculty also assessed the quality of materials and the training process. In other words, an authentic assessment was woven into the course design, and provided faculty with a formative assessment of their understanding of the basic concepts covered in the course. This allowed faculty to make sense of their overall progress throughout the course.

10. Faculty evaluated the OFDAS using the Attitude Towards Course Learning Questionnaire (ACLQ).

11. Faculty assessed data on student classroom learning environments using the University Teaching Activities Questionnaire (AUTAQ).

12. Similarly, faculty also received student feedback via the AUTAQ.

(see http://gid.us.es:8083):

Research

Research Questions

Our broad research question was: "*How did the online course elements and management activities affect professional skills learning and what were their impact on teaching attitudes and on the students' classroom learning environment assessment?*" This question was examined in light of three specific questions (see Figure 1). First, we asked was there a difference in faculty opinion about the quality of the online course? Second, did faculty learn professional skills? And third, after the course ended, was there a relationship between faculty teaching attitudes and students' assessment of their learning environment?

Figure 1. The OFDAS model and sample variables

OFDAS Design

Service
Responsive
Effectively presented
Easy-to-use (moodle)
Up-to-date
Clearly written
Tutorial
Forums
Student feedback

Content Information
Professional skill 1. Knowledge of student motivation and ability to promote students' positive attitudes
Professional skill 2. Awareness of students' diversity in all its forms
Professional skill 3. Competence to solve students' problems
Professional skill 4. Competence to develop metacognitive skills in the trainee
Professional skill 5. Competence to provide effective and free curriculum time
Professional skill 6. Knowledge of area being supervised (learning tasks, research, assessment, etc.)
Professional skill 7. Teaching and didactic skills for large groups
Professional skill 8. Knowledge of questioning skills
Professional skill 9. Knowledge of formative and summative evaluation
Professional skill 10. Competence to conduct own self-assessment process

RQ 1

RQ 2

OFDAS delivery

Quality scale
Relevance
Usefulness
Appropriateness
Adaptation
Tips
Structure
Pertinence
Reading
Impact
Time-Consuming

Activities
110 assignments: practice problems, case studies, etc.

Measurement tests
10 practice exams

OFDAS outcome

ACLQ
Understanding
Learning
Discussion
Negotiation
Evaluation

RQ 3

AUTAQ
Motivation
Involvement
Scaffolding
Climate
Clarification
Use of resources

Sample

Twenty-four (*n* = 24) faculty members volunteered for this study and all met the following selection criteria: (a) employees of a university campus, (b) scientific field, and (c) professional merit. All respondents were full-time faculty employed by two public Canarian Universities: 11 from *La Laguna* (45.8%) and 13 from *Las Palmas de Gran Canaria* (54.2%). Of the 24 faculty respondents, ten (41.7%) were male and 14 (58.3%) were female. Nineteen (*n* = 19; 79.2%) respondents were considered 'experts' (i.e., with more than five years of teaching experience). Most had a doctorate (*n* = 14; 58.3%). When disciplines were broken down into scientific fields, eight respondents (33%) reported that they taught in the social sciences; five (20.8%) in experimental sciences; four (16.7%) in healthcare sciences; three (12.5%) in humanities, and four (16.7%) in technical sciences. The OFDAS program took place during the spring quarter of the 2006 academic year and spanned an 11 week period.

The AUTAQ was administered to 102 students enrolled in courses the two universities taught by the faculty listed above. Four hundred eighty (*n* = 480) students were asked to provide feedback

on their classroom climate. The student sample was representative of gender, age, area of study, level of study, and other academic and social characteristics.

Measures, Data Collection, and Analytical Methods

Professional Skills Scale

The *Professional Skills Scale* was used to measure respondents' ability to understand the knowledge and skill acquisition levels, and the degree to which individuals or groups wished to use them (Cronbach's alpha = 0.944). Consisting of ten items used to measure 'expert skills,' 'conditions,' 'technologies' and 'teaching practices' (i.e., "The competence was relevant for my teaching"), this scale was designed to measure faculty's knowledge, skills, and attitudes. For items 1 to 17, a five point Likert-like scale was used: 1 = strongly agree; 2 = agree; 3 = average; 4 = disagree; 5 = strongly disagree. Items 8 to 10 had specific five point scales. All ten items measured various types of faculty 'opinions' over the duration of the course, such as professional skills relevance, usefulness, appropriateness, adaptation, tips, structure, pertinence, reading, impact, and time-consuming. This measure was developed for use in this study.

Attitude Towards Course Learning Questionnaire (ACLQ)

Faculty were asked to make 'attitude judgments' on teaching practice (Cronbach's alpha = 0.950). The measure consisted of 20 items (see Table 1, and Appendices A and B) scored on a 5-point Likert-type scale, ranging from 1 = 'strongly agree,' to 5 = 'strongly disagree.' The measure was developed for use in this study. Each scale consisted of four items.

Table 1. Description of Scales and a Sample Item for Each Scale of the ACLQ

Scale	Description	Sample item
Understanding	Extent to which faculty are able to re-conceptualize, explain and use received information about teaching	I take time to understand the aspects of my teaching in which I am mistaken
Learning	Extent to which faculty acquire knowledge, skills, attitudes, or values, through study, experience, or teaching, which lead to behavioral changes that are persistent, measurable, and specified	I discuss mistakes on authors' articles and books that I read about teaching
Discussion	Extent to which faculty use a method of interaction and position representational argument regarding teaching	I point out my colleagues' teaching weaknesses to help them clarify their educational rationale
Negotiation	Extent to which faculty agree on courses of action to take in teaching	I share odd opinions about teaching with colleagues
Evaluation	Extent to which faculty determine the merit, worth, and significance of teaching	I regard teaching as a problem situation because I carefully keep in mind results and evidences of my subject

Assessment of University Teaching Activities Questionnaire (AUTAQ)

The AUTAQ was designed to appraise students' perceptions of their classroom environment (Cronbach's alpha = 0.958). This questionnaire consisted of 22 items scored on a 5-point Likert-type scale, ranging from 1 'strongly agree' to 5 'strongly disagree' (see Table 2, and the Appendix). The design of the AUTAQ was guided by relationship, personal growth, and curriculum change dimensions for conceptualizing university quality assurance (Villar, 2001).

Table 2. Description of Scales and a Sample Item for Each Scale of the AUTAQ

Scale	Description	Sample item
Motivation (5 items)	Extent to which university students are involved in an innovative activity	I am motivated to work in classroom learning activities
Involvement (4 items)	Student perception that university teaching is student-centred and that he/she has been offered the opportunity to make decisions on his/her learning	These activities have changed my views on the role of university students
Scaffolding (5 items)	Extent to which instructors demonstrate the steps or structure of a problem and provide keys and help for successfully completing the activities	These activities relate new information to what I have previously learnt
Climate (4 items)	Extent to which conjecture, questioning, and discussion in activities are fostered, and to which students socially interact with each other to give meanings to and reach agreements on teaching activities and viewpoints	These activities encourage university students to ask questions and discuss answers given in a book
Clarification (2 items)	Extent to which university students are given explanations, examples and multiple forms of understanding a problem or difficult material	The instructor clarifies difficult aspects of these activities
Use of resources (2 items)	Extent to which new technological tools and other academic resources facilitate university students' generation of ideas and knowledge construction	These activities help to develop other study capacities in university students (e.g. handling of tools, document search, library use)

Data was collected online during and after the course. Faculty members explained to students the purpose of the AUTAQ and the research study, and assured them of full anonymity to encourage their participation.

Data analyses included descriptive statistical summaries, Alpha reliabilities of subscales of the two questionnaires, T-tests, analysis of variance (ANOVA), and intercorrelations among scales (Pearson product moment correlation coefficient).

Results

Research Question 1

Research Question 1 asked whether faculty opinion towards the quality of OFDAS was positive. In terms of the professional skills quality scale items, item means ranged from a high of 3.08 (Item 8, Reading: "I read websites and pdf documents which were linked to the professional skill") to 1.33 (Item 1, Relevance: "The competence was relevant for my teaching'). Standard deviations varied from 1.52 (Item 8, Reading) to .76 (Item 1, Relevance). All item mean scores exceeded the midpoint scale (3.00, normal), and Item 8, Reading, exceeded the midpoint scale (3.00, frequently).

T tests revealed significant differences with regard to gender in five quality items (usefulness, adaptation, tips, structure, and pertinence). Females held better opinions than males with respects to the quality of the professinal skills. As to degrees, significant difference was found in eight quality items (relevance, usefulness, appropriateness, adaptation, tips, structure, pertinence, and time-consuming). PhD prepared instructors/ teachers held better opinions than Bachelor's prepared instructors with respect to the quality of professional skills. With regard to the degree of teaching expertise, new faculty (those with less than four years teaching experience) and expert faculty (those with five years or more teaching experience) had different opinions with respect to five quality items (usefulness, appropriateness, adaptation, tips, and structure) (See Table 3).

Table 3. Significant t-Test Results for Demographic and Academic Factor Comparisons

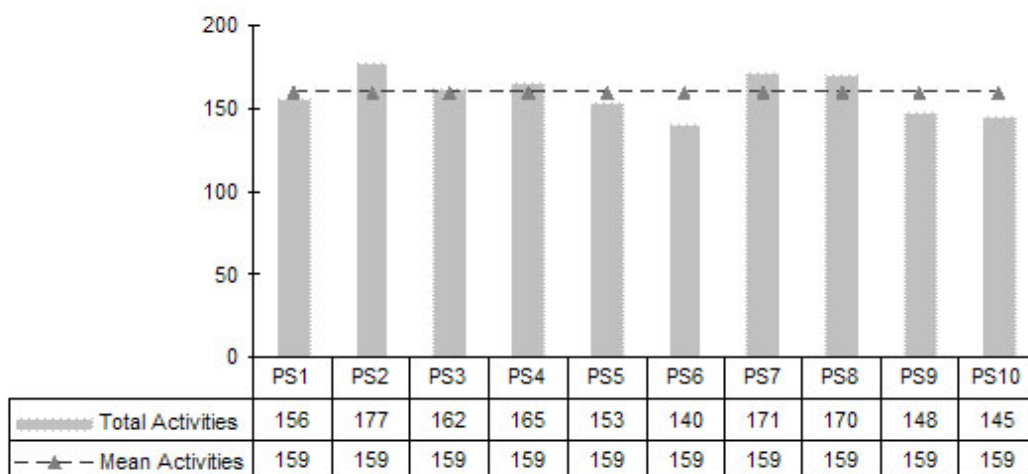| Contrast	Variable	$t\,(22)$	P value
Male vs. Female	Usefulness	2.496	.021
	Adaptation	2.566	.018
	Tips	3.382	.003
	Structure	.453	.041
	Pertinence	2.452	.023
Doctor vs. Bachelor	Relevance	-3.246	.003
	Usefulness	-2.572	.021
	Appropriateness	-2.383	.031
	Adaptation	-2.456	.022
	Tips	-3.183	.005
	Structure	-2.713	.016
	Pertinence	-2.432	.030
	Time-consuming	-2.499	.022
Novice vs. Expert	Usefulness	2.800	.015
	Appropriateness	2.947	.013
	Adaptation	2.725	.018
	Tips	3.253	.007
	Structure	2.590	.037

Research Question 2

Research Question 2 asked whether the online course stimulated faculty learning. This question was divided into two sub-categories: 1) facilitating learning activities, and 2) assessing the cognitive domain of professional skills learning.

Facilitating Learning Activities: Oliver and Herrington (2003) assert: "Designing a learning environment by commencing with the design of learning activities creates a setting where the focus of the planning centres on formulating the forms of learning outcomes being sought, rather than considering what content will be covered" (p. 114).

Learning activities were developed to reflect the manner in which curriculum and didactic knowledge will be used in real-life university environments. Descriptive summaries detailed the ten professional skills being assessed during the learning activities. Results show that faculty respondents completed 1,587 learning activities (see Figure 2).

A principle of the learning process was peer assistance and peer review, which was provided via guidance and participant feedback. Online help was often needed. Thus, coaching and scaffolding of learning was provided by two OFDAS leaders assigned to diagnosed the strengths and weaknesses of each participant, and tailor any support needed. Figure 2 shows participant instructors' changes in their interest in, and willingness to, respond to learning activities as the course progressed over the 11 week duration. Participation in the learning activities was found to be more intense in the earlier stages of the course, than during the final activities. Data collected shows that participants' time commitment was not equally distributed. While participants engaged heavily in Professional Skill 2 (awareness of students' diversity in all its forms), they engaged very little in Professional Skill 6 (knowledge of area being supervised – i.e., learning tasks, research, assessment, etc.). The last module on 'evaluation' saw low rates of participation (Professional Skill 9 and Professional Skill 10). In spite of the ebb and flow of participation, learning was fluent as faculty participants were made aware of new possibilities concerning their teaching.

Figure 2. Participant Instructors' Responses to Learning Activities

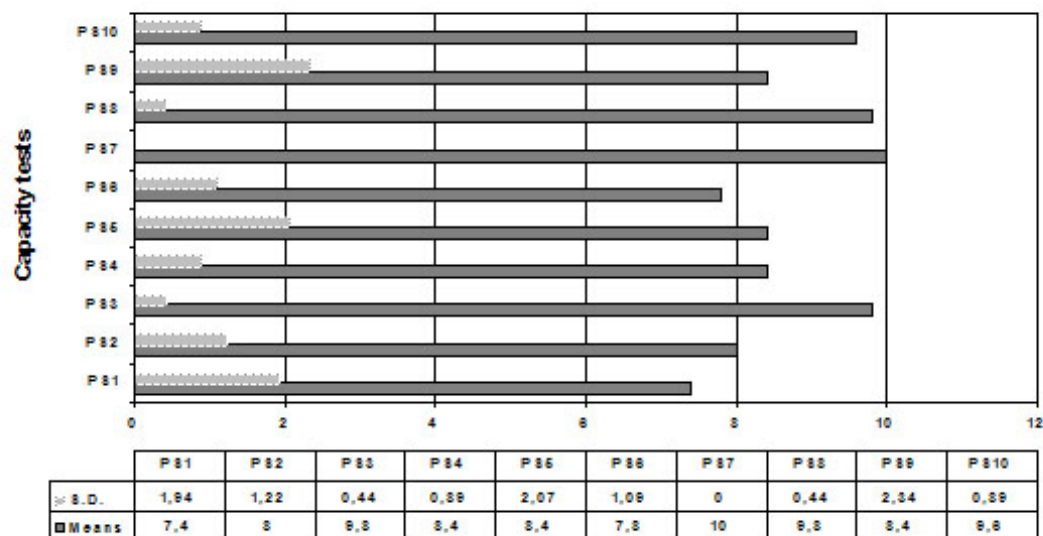|	PS1	PS2	PS3	PS4	PS5	PS6	PS7	PS8	PS9	PS10
Total Activities	156	177	162	165	153	140	171	170	148	145
Mean Activities	159	159	159	159	159	159	159	159	159	159

Content analysis was chosen as a methodology for analysing the online faculty learning activities; this involved comparing and contrasting the activities using a 10 point scale to code and interpret

the results. Activity transcripts were scored by the researchers, and the scores were then actively discussed to arrive at a final version where the learning activities had been brought into alignment. Learning activities were scored as: "Maximum Distinction (9-10)," "Important for its Intensity (7-8)," "Suitable (5-6)," "Minimum Qualification (3-4)," and "Differed the Execution (0-2)." Highlights are provided in Figure 3, which demonstrates the ability of participant instructors to apply previously learnt solutions to learning activities. All 'professional skills' were passed by participants, with the exception of the Evaluation Module (Professional Skill 9, knowledge of formative and summative evaluation, and Professional Skill 10, competence to conduct own self-assessment process).

Figure 3. Learning Activity Qualifications

	PS1	PS2	PS3	PS4	PS5	PS6	PS7	PS8	PS9	PS10
Means	7	7,2	7,3	6,9	6,6	6,9	7	6,9	4,9	4
S.D.	1,76	1,88	1,71	3,3	3	2,7	2,4	2,9	3,7	4,5
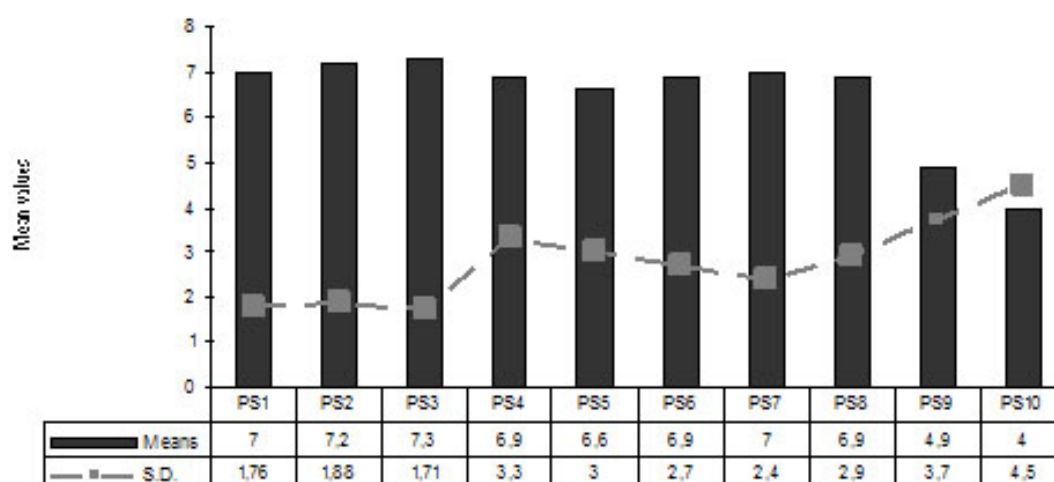
Assessing the cognitive domain of professional skills learning: Ten tests (10 multiple choice items) measured participants' knowledge and understanding of 'professional skills.' Test means varied from a high score of 7.4 (knowledge of student motivation and ability to promote students' positive attitudes) to a very high score of 10 (teaching and didactic skills for large groups). All ten test means exceeded score 7 on the ten-point scale used.

Figure 4. Self-Assessment Test Scores

	P S1	P S2	P S3	P S4	P S5	P S6	P S7	P S8	P S9	P S10
S.D.	1,94	1,22	0,44	0,89	2,07	1,09	0	0,44	2,34	0,89
Means	7,4	8	9,8	8,4	8,4	7,8	10	9,8	8,4	9,8

Means and standard deviations on the ten self-assessment test scores are shown in Figure 4. It was found that faculty participants' learning was effective. However, objective testing of professional skills showed that faculty participants' performance was more effective in the 'competence of teaching and didactic skills for large groups,' than in the 'competence of knowledge of area being supervised' (i.e., learning tasks, research, assessment, etc.). There were significant differences in the learning of Professional Skill 3 (competence to solve students' problems) between participants in regards to gender (t (15) = 2.520, p = .018). Female instructors had more successful results than male instructors. Also, significant differences were found between instructors with and without previous educational knowledge in Professional Skill 1 (knowledge of student motivation and ability to promote students' positive attitudes) (t (15) = -3.119, p = .008), Professional Skill 3 (competence to solve students' problems) (t (15) = -2.477, p =.027), Professional Skill 4 (competence to develop meta-cognitive skills in the trainee) (t (15) = -2.385, p =.032), Professional Skill 7 (teaching and didactic skills for large groups) (t (15) = -2.449, p =.028), and Professional Skill 8 (knowledge of questioning skills) (t (15) = -2.590, p =.022). All were in favor of the instructors with previous educational knowledge. Finally, in terms of measuring teaching experience, significant differences in learning Professional Skills 3 (competence to solve students' problems) were found between new and expert faculty participants (t (15) = 2.800, p =.015).

Research Question 3

Research Question 3 asked if was there a relationship between faculty members' teaching attitudes and students' perceptions of their learning environment after completion of the OFDAS.

Differences between students' perceptions of actual and preferred environments: Table 4 shows means, standard deviations, and a series of t tests used for comparison between the two AUTAQ actual and preferred forms. The findings revealed some clear patterns of differences in the suitability of the current classroom environments. The scale for classroom climate showed the highest means in both forms.

Table 4. Means, Standard Deviations, and *t*-Values for Actual and Preferred forms of AUTAQ

Scale	Means	Standard Deviations	t
Motivation	Actual = 4.53 Pref. = 3.82	.637 .996	t(78) = 63.21, p<.001
Involvement	Actual = 4.46 Pref. = 3.83	.657 1.01	t(78)= 60.448, p<.001
Scaffolding	Actual = 4.39 Pref. = 3.83	.657 1.01	t(78)=43.497 p<.001
Climate	Actual = 4.74 Pref. = 4.74	.609 .518	t(78)=69.269 p<.001
Clarification	Actual = 4.40 Pref. = 3.93	.689 .991	t(78)=56.818 p<.001
Use of Resources	Actual = 3.784 Pref. = 3.493	1.117 1.130	t(78)=30.113 p<.001

Figure 5 shows the comparison between students' actual and preferred forms. Students were found to be more satisfied with the actual classroom environment scales, than what they perceived from the other scales in the preferred classroom environment form. Moreover, climate scale means were the same in the actual and preferred forms.
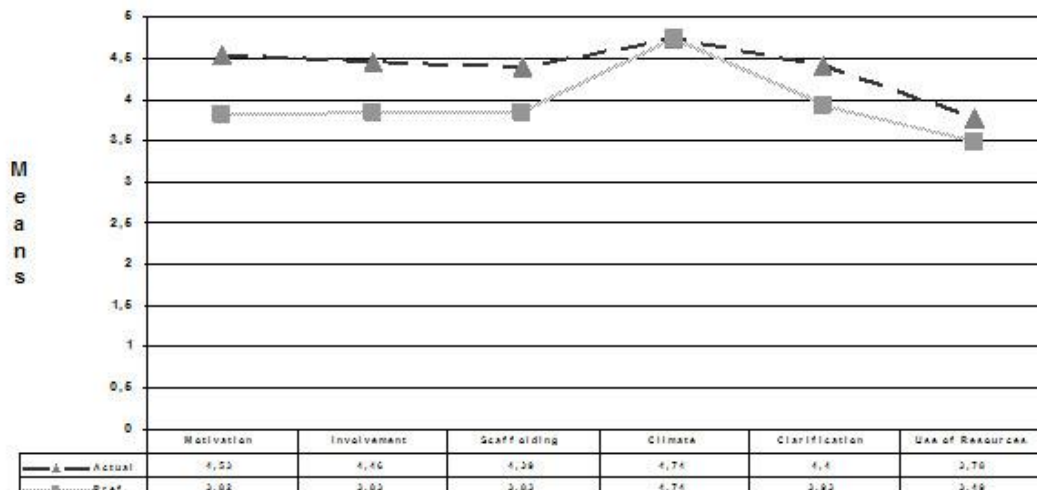
Figure 5. Significant Differences Between Student Actual and Student Preferred Perceptions of the AUTAQ

	Motivation	Involvement	Scaffolding	Climate	Clarification	Use of Resources
Actual	4,53	4,46	4,39	4,74	4,4	3,78
Pref.	3,82	3,83	3,83	4,74	3,93	3,49

Table 5. Between Scale Correlations Calculated on Items Grouped into their Initial Tentative Scales

Means, Standard Deviations and *t* values for Actual and Preferred forms of AUTAQ

Scale	Means	Standard Deviations	*t* (78)
Motivation Pref. = 3.82	Actual = 4.53 .996	.637	63.21, $p<.001$
Involvement Pref. = 3.83	Actual = 4.46 1.01	.657	60.448, $p<.001$
Scaffolding Pref. = 3.83	Actual = 4.39 1.01	.657	43.497 $p<.001$
Climate Pref. = 4.74	Actual = 4.74 .518	.609	69.269 $p<.001$
Clarification Pref. = 3.93	Actual = 4.40 .991	.689	56.818 $p<.001$
Use of Resources Pref. = 3.493	Actual = 3.7841.117 1.130		30.113 $p<.001$

Discussion

This study was designed to assess faculty's professional teaching skills, which are believed to be useful for gaining a better understanding of teaching practice. The aim was to develop and validate a framework of professional skills taught in an online program. The three research questions are discussed below.

Opinion Towards the Quality of the OFDAS

Faculty agreed that the professional skills taught in the OFDAS had a positive impact on their teaching skills. The leaders also had a positive impact on participants' appreciation of the course and skills acquisition. This finding is supported by other researchers who have evaluated Web-based courses (Nijhuis & Collis, 2003). Based on gender, degree, and teaching experience, faculty gave different opinions on the usefulness of professional skills in terms of subject matter, resources, presentations, useful tips, learning goals for skills improvement, and the structure of these professional skills (purpose, uses, educational setting, and case study) for identifying, clarifying, and exploring educational situations. Thus, while the first research question was fully supported, it was found that participants' opinions varied on the usage and ease of use of professional skills taught in the OFDAS.

Learning Activities

Faculty completed a total of 1,587 learning activities over the 11 week duration of the OFDAS. Faculty reported that the learning activities to be generally useful. This finding answers a question raised by Caffarella and Zinn (1999): "Do professional development activities assist in a

faculty member's professional success?" (p. 253). Based on this outcomes of the OFDAS, our answer to this question is a resounding "yes." Indeed, all but two professional skills were approved by faculty: the Evaluation Module (Professional Skill 9, knowledge of formative and summative evaluation, and Professional Skill 10, competence to conduct own self-assessment process). All ten Professional Skills test means exceeded 7 on the ten-point scale used. This finding supports our hypothesis that faculty can successfully acquire professional skills using an online program. However, it should be reiterated that significant differences in 'learning' was found between participants in three nominal variables: gender, previous educational knowledge, and teaching experience.

Relationship Between Faculty's Teaching Attitudes and Students' Perceptions of their Learning Environment

The results stressed two somewhat different but conceptually related measures, which brought about new perspectives on assessing learning environments in higher education settings. The Climate scale in particular emphasized the importance of developing mature, interpersonal relationships, friendships, social bonds, and connections with other students, as a vector of behaviour of student development (Lounsbury, Saudargas, Gibson, & Leong, 2005). Results from the AUTAQ went to each faculty participant, just as Kember, Leung, and Kwan (2002) had done with the student feedback questionnaire used in their study.

Overall, the findings of this study are encouraging. We found that all 'professional skills' taught were perceived by faculty to be useful and easy to implement, though at varying levels depending on the elements employed for the course (i.e., time available). As Fitzgibbon and Jones (2004) previously noted, the coordination of the online program is crucial to its success. Directed and purposeful course design efforts, coupled with activities best suited for various scientific fields, faculty are able to enhance their subject area teaching, with professional pedagogical skills that are easy to use and more importantly, used.

The Attitude Towards Course Learning Questionnaire (ACLQ); the constructivist-based format of the Assessment of University Teaching Activities Questionnaire (AUTAQ); and the other faculty demographic and academic variables explored in this study, all addressed ongoing concerns about the need to improve online training in higher education, as well as emphasizing new ideas about important variables that might be measured as alternatives to the more traditional approaches in evaluation of faculty development (Ellett, Loup, Culross, McMullen, & Rugutt, 1997). The ACLQ and AUTAQ online systems facilitated timely data collection, feedback, and online assessment, a finding supported by previous research undertaken by Tucker, Jones, Straker, and Cole (2003). Finally, the AUTAQ consisted of two sections (although only Section II was used for this study). Section I collected student demographic, academic and social information, but was not used -- as had occurred in the Barfield (2003) study.

An issue arose from this study regarding student online assessment. Our response rates were low, a finding that is supported by previous research by Ballantyne (2003). Nonetheless, faculty reported that collecting feedback online with the AUTAQ system to be convenient, a finding that is supported by earlier research undertaken by Bullock (2003) who investigated a similar online feedback system. Based on this research, we opine that a good starting point for training to enhance faculty scholarship of teaching is built into the design of the OFDAS. In short, the OFDAS is a good starting point for this type of training, because it encourages faculty to become fully involved in the development of online faculty courses. It achieves this by inclusion of learning materials faculty themselves deem necessary to their learning within the scope of the face-to-face workshop, activities, quizzes, grades, and in the direction dialog takes within the OFDAS forum. The selection of 110 learning activities was the organising element of the user/

faculty development-design process of the program. Our focus on learning tasks had also been already underlined by other researchers (Oliver & Herrington, 2003).

One of the limitations found in this study was the fact that it examined solely one faculty online course at only two public urban universities in the Canary Islands. Because faculty volunteered their classes, our pool of respondents were not randomly selected. For these reasons, the study is not intended to be, nor should it be, generalized to other universities.

Conclusion

Based on our experiences at two Canarian universities, we opine that the OFDAS is an effective training model that can be used to improve reflective practice on professional skills. The OFDAS online system is a mechanism used to both enhance online faculty development program management and provide evidence of a quality-improvement process in such online development. Because professional skills framework had been field-tested in this study, faculty knew the impact of professional skills. Finally, no correlation was found between faculty's teaching attitudes and students' learning environment at the conclusion of the course.

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Appendix 1

Assessment of University Teaching Activities Questionnaire (AUTAQ)

Instructions: This questionnaire is about your perception of the classroom learning environment. Your opinion is required for each question. For each sentence select the score that best suits your perception. Please answer by circling the number with 1 = 'strongly disagree', 2 = 'disagree', 3 = 'neutral', 4 = 'agree' and 5 = 'strongly agree'.

Dimension A. MOTIVATION (extent to which University students are provided with explanations, examples and multiple forms of understanding a problem or difficult material).					
1. I am motivated to work in classroom learning activities.	1	2	3	4	5
2. These activities improve my opinion about the content of the subject (practical vision).	1	2	3	4	5
3. I am more motivated in these activities than if I studied them in a theoretical way (useful vision).	1	2	3	4	5
4. I believe that these activities develop instructors' interest in teaching.	1	2	3	4	5
5. I believe that activities like these would significantly improve the quality of University teaching.	1	2	3	4	5
Dimension B. INVOLVEMENT (student perception that University teaching is student-centred and that he or she has been offered the opportunity to make decisions concerning his/her learning).					
6. These activities have changed my views on the University student's role.	1	2	3	4	5
7. These activities have changed my attitude towards the subject and the way of dealing with University studies.	1	2	3	4	5
8. I assume responsibilities in these activities.	1	2	3	4	5
9. I suggest possible educational problems and tasks with peers.	1	2	3	4	5
Dimension C. SCAFFOLDING (extent to which instructors demonstrate the steps or structure of a problem and provide keys and assistance for completing the activities with success).					
10. These activities relate new information to what I have previously learnt.	1	2	3	4	5
11. I use ideas and information that I already know to understand something new.	1	2	3	4	5
12. I have developed other cognitive capacities in these activities (e.g. analysis, synthesis, critical thinking).	1	2	3	4	5
13. These activities help me to investigate, build and relate ideas and facts.	1	2	3	4	5
14. I explore how information relates to other topics and subjects.	1	2	3	4	5
Dimension D. CLIMATE (extent to which conjecture, questioning, and discussion in activities are fostered, and students socially interact with each other to give meanings to and reach agreements on teaching activities and viewpoints).					
15. These activities encourage University students to ask questions and discuss answers given in a book.	1	2	3	4	5
16. I discuss correct and incorrect solutions to problems.	1	2	3	4	5
17. I share ideas, answers and visions with my instructor and peers in these activities.	1	2	3	4	5
18. I learn from peers how to think about a problem and to consider their points of view.	1	2	3	4	5
Dimension E. CLARIFICATION (extent to which University students are given explanations, examples and multiple forms of understanding a problem or difficult material)					
19. Instructor clarifies difficult aspects of these activities.	1	2	3	4	5
20. Instructor elaborates the most confusing information of these activities by means of outlines, diagrams or illustrations of the main ideas.	1	2	3	4	5
Dimension F. USE OF RESOURCES (extent to which new technological tools and other academic resources facilitate University students' generation of ideas and knowledge construction).					
21. These activities help to develop other study capacities in University students (e.g. handling of tools, document search, library use).	1	2	3	4	5
22. I find new information about the topics and subjects using new technologies.	1	2	3	4	5

Appendix 2 *(see next page)*

Attitude Towards Course Learning Questionnaire (ACLQ)

Instructions: This questionnaire is about your attitude towards the online learning course. Your opinion is required for each question. For each sentence select the score that best suits your attitude. Please answer by circling the number with 1 = 'strongly disagree', 2 = 'disagree', 3 = 'neutral', 4 = 'agree' and 5 = 'strongly agree'.

Athabasca
University

Dimension A. UNDERSTANDING (extent to which faculty are able to reconceptualise, explain and use received information on teaching).				
1. I invest time in understanding the aspects of my teaching in which I might be mistaken.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
2. I put myself in other colleagues' shoes in order to understand their thoughts on teaching and why.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
3. I am aware of colleagues' opinions regarding teaching, although they might differ from mine, through empathy.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
4. I enjoy thinking about how colleagues from different disciplines experience teaching.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Dimension B. LEARNING (extent to which faculty acquire knowledge, skills, attitudes, or values, through study, experience, or teaching, which bring about a behavioural change that is persistent, measurable, and specified).				
5. I discuss faults with authors' articles and books that I read regarding teaching.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
6. I am interested in knowing what colleagues say and believe about pedagogic and teaching ideas.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
7. I enjoy listening to colleagues from other disciplines express their opinions on teaching.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
8. Acquiring knowledge and skills from colleagues has been the most important aspect of my higher education experience.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Dimension C. DISCUSSION (extent to which faculty use a method of interaction and position representational arguments about teaching).				
9. I point out my colleagues' teaching weaknesses to help them clarify their educational rationale.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
10. I strengthen my own teaching stance by discussing my ideas with colleagues who have different ideas from mine.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
11. In evaluating what a colleague says, I only consider what he or she says about teaching and not who he or she is.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
12. I enjoy being the devil's advocate, arguing for the opposite viewpoint of what a colleague says about teaching.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Dimension D. NEGOTIATION (extent to which faculty agree with others on courses of action to take for teaching).				
13. I share odd opinions on teaching with colleagues.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
14. I agree with colleagues when they talk about teaching instead of personally evaluating them.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
15. I reason and compromise with colleagues on teaching concepts instead of quarreling with them.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
16. I feel that the best way to get my own professional teaching identity is by interacting and bargaining with colleagues from disciplines different to mine.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Dimension E. EVALUATION (extent to which faculty determine the merit, worth, and significance of teaching).				
17. I regard teaching as a problem situation because I carefully keep in mind results and evidences of my subject.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
18. In examining teaching problems, I place more value on the use of logic and rationale than on my own personal interests.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
19. I have pedagogic approaches and models that I use to assess arguments about teaching.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
20. I stay objective when I analyze and measure teaching.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree