Emotions in response to teaching online: Exploring the factors influencing teachers in a fully online university

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Abstract

The aim of this paper is to understand the emotions associated with the experience of teaching online in an online university and the factors that influence these emotions. Nine hundred and sixty-five (965) online teachers at the Universitat Oberta de Catalunya (www.uoc.edu) were surveyed. Three emotions linked to teaching online were identified: satisfaction, relief and pleasure. Multiple regression analyses were used to make inferential judgments and test the effects of the teachers' demographic and professional variables. Findings suggest that satisfaction is associated with the instructional design and learning support roles and with the knowledge building approach; relief is inversely related to the content acquisition approach; and pleasure is linked to variables such as academic background and amount of online teaching hours, as well as the knowledge building approach. The practical implications of these results are discussed.

Keywords: emotions in teaching online; approaches to teaching online; teacher roles in teaching online; online learning environments; fully online university.

Acknowledgement

Introduction

How teachers feel about teaching has been a key topic in educational psychology for the last ten years (Schutz, Aultman, & Williams-Johnson, 2009). There is now enough evidence to support the idea that the emotions university teachers undergo when teaching face to face are strongly related to their cognition, motivation and work performance (Badia, Meneses, & Monereo, 2014; Trigwell, 2012). Nevertheless, although both online and face-to-face teaching in higher education are equally demanding emotionally, the latter has been under-researched as an educational topic.

Identifying the relationships between emotions and online teaching and other related issues will allow us to better understand the matter. Having knowledge of how the factors impacting on the online teaching experience and the emotional response teachers have to that experience interact will aid educational institutions in supporting their online teachers and encouraging positive emotions, which could result not only in personal satisfaction on the part of teachers but also in an improvement in student learning (Rowe, Fitness, & Wood, 2013).

The aim of this paper is to provide a comprehensive overview of the emotions teachers experience in response to teaching online and the factors that affect the different emotions that arise. According to Badia, Garcia, and Meneses (2017), some possible main factors include certain socio-professional characteristics, academic background, online teaching experience, studies taught at university, teachers' roles, and teachers' approaches to teaching.

Types of emotions involved in teaching in higher education

In our literature review we have found few classifications of the types of emotions involved in teaching at university level. However, of those found, most distinguished between positive and negative emotions. Following this traditional classification of human feelings, Trigwell (2012) considered two ways that teachers experience the context of teaching on an emotional level, classifying the emotions into positive and negative forms: motivation, embarrassment, frustration, anxiety and pride. Considering only positive emotions, Rowe, Fitness and Wood (2013) explored themes and situations experienced by academics and identified joy/happiness, interest/excitement, love, self-

awareness and relief as perceptions of positive emotions in learning. In another study, Löfström and Nevgi (2013) used a classification system for emotional responses to teaching comprised of three categories: positive, neutral and negative.

More recently, Badia, Meneses and Monereo (2014), using an exploratory factor analysis based on a differential technique, identified a three-factor structure of emotions in regard to teaching in higher education. The three categories of teaching emotions were considered as affective dimensions of teaching and included motivation for teaching, evaluation of oneself as a teacher, and teaching accomplishment.

Nevertheless, few studies have focused on the emotions involved in teaching online at university level. Wickersham and McElhany (2010) indicated that online instructors have various concerns related to the quality of online teaching, such as the amount of time needed to design and develop an online course, the possible lack of social interaction during the course, the fear of the popularity of online courses with administrators, the lack of preparation by students as regards technology, and their ability to be self-disciplined in learning. Regan et al. (2012) went a step further and showed that some of the emotions teachers experienced in regard to teaching online were indeed negative. They felt restricted (technology restricts how they can teach); stressed (frustrated, apprehensive or unsure); and devalued (helpless and insecure). However, they also felt several positive emotions: validated (pleased, proud, assured and satisfied) and rejuvenated (convenient, intrigued and liberated). It has also been detected that, in virtual learning environments, when online instructors move from a student-centred learning environment to a direct instructional approach, there is a risk of their self-esteem becoming vulnerable (Santilli & Beck, 2005).

Factors influencing teachers' emotions in teaching
Research has shown that the experience of teaching influences the emotions felt in regard to it. Novice teachers often experience feelings of anxiety due to the complexity involved in learning how to teach and the uncertainty teachers feel about being able to achieve the goals set, but teachers feel increasingly more at ease with teaching as they gain experience (Åkerlind, 2003). The more professional experience they obtain, the less effort they need to put into their teaching and, consequently, their confidence as teachers grows.

Furthermore, several contributions have found that teachers' pedagogical knowledge also influences their emotions in regard to teaching. For example, teachers with a more developed understanding of teaching experience a broader and more complex range of emotions, such as confusion and anxiety, when faced with educational changes (Martin & Lueckenhausen, 2005). Moreover, teachers' perception of how much knowledge they hold is significantly and positively influenced by their level of confidence when it comes to teaching (Sadler, 2013).

Approaches to teaching are another type of teacher characteristic related with the emotions felt when teaching. As shown by Postareff, Lindblom-Ylänne and Nevgi (2007), teachers who perceive themselves as being efficient in their teaching adopt a student-centred approach. Likewise, in a recent study, Kordts-Freudinger (2017) demonstrated the emotional components of the approaches to teaching by confirming the relationship between positive emotions and the student-oriented approach. He also suggested that the cultural-educational context affects emotions and approaches as well. In a study of university lecturers' affective dimensions regarding their teaching, Badia, Meneses and Monereo (2014) found a significant and positive correlation between motivation to teach, pride, and self-evaluation as a teacher with the adoption of a student-focused approach, while embarrassment and anxiety were positively associated with the adoption of a teacher-focused approach to teaching (Trigwell, 2012).

Finally, perceptions of teaching performance are associated with the emotions involved in teaching. Several sources of positive emotions are related to the way in which the curriculum is delivered and to supportive student/staff relationships. In particular, promoting the achievement of learning goals caused joy, happiness and pride in being a teacher, and developing a suitable process of teaching and learning was a source of interest and excitement for both teachers and students (Rowe, Fitness & Wood, 2013).

So far, experience, knowledge, approaches and teaching performance have all been shown to have relationships with teachers' emotional responses to teaching. In addition, other potential aspects of teachers' characteristics that have been widely studied, such as teachers' roles in teaching online (Baran, Correia & Thompson, 2011), and particular teachers' features will be taken into account for the purpose of our study.

Aim of the study

The current study was conducted to identify the types of emotions online teachers feel in response to the experience of teaching online in an online university and the relationships between different factors and each type of teacher emotion. With this aim in mind, two research questions were posed:

Research Question 1. What type of emotions do teachers feel in response to the experience of teaching online in an online university?

Research Question 2. Are teachers' emotions about teaching online related to their approaches to teaching, their teaching roles at university or their individual characteristics?

Method

Context of the study

The Open University of Catalonia (Universitat Oberta de Catalunya, UOC) was established in 1994 and is currently the largest fully online university in Spain. It offers lifelong education to working adults through undergraduate, graduate and non-degree programmes across seven faculties. It also has a doctoral school and a research centre called the Internet Interdisciplinary Institute (IN3).

Teaching is delivered through the UOC's Virtual Campus and the online classroom, which supports all virtual activity for online teachers and students, using several tools for communication, planning, content resources, assessment and administration services.

Procedure

The data collection procedure was carried out simultaneously for the online teachers' demographic and professional information, their emotions, teaching approaches and roles. The research team sent an email to invite all UOC online teachers to participate in the study, asking them to anonymously complete an online questionnaire, which could be accessed via a link embedded in the message itself. The research was carried out between 2012 and 2016. This study complied with the UOC's ethics requirements, and standard

informed consent procedures were followed throughout the process.

The authors are aware that the data was gathered using surveys, and as such it is not sensitive enough to reflect real teaching practices. In addition, we also believe that our study cannot be used to generalize results, because the participants came from just one fully online university. As shown by Kordts-Freudinger (2017), the cultural-educational context affects emotions, so it is likely that some of the institutional characteristics of this online university have influenced our findings.

Participants

There was a total of 965survey respondents, reflecting a response rate of 46.13% of all online teachers at the university. All the participants held posts as course instructors, that is, academic staff whose main focus was essentially teaching.

Data collection

The demographic and professional information of all the participants in the study was collected, as well as the details of their roles in the online university and their approaches to online teaching.

Participants' information

Participants were asked to provide basic demographic and professional information. The overall individual information about the online teachers is shown in Table 1.

Table 1. Participants' information (N = 965)

		Mean	SD
Age		42.7	7.61
		N	**%**
Gender	Male	543	56.3
	Female	422	43.7
Education	Bachelor's degree	234	24.3
	Master's degree	347	36
	PhD	384	39.7
Academic background	Social Sciences	578	59.9
	Health Sciences	67	6.9
	Engineering	150	15.5
	Sciences	61	6.2
	Humanities	110	11.4
Online teaching experience	< 3 years	323	33.5

	3-10 years	450	46.6
	> 10 years	192	19.9
Studies taught at university	Undergraduate	825	85.5
	Graduate/PhD	140	14.5
Online teaching hours (in percentage of time)	< 25%	245	25.4
	26% - 50%	203	21
	51% - 99%	217	22.5
	100%	300	31.1

The information 'Online teaching hours' shown in Table 1 reflects the percentage of time that course instructors devoted to online teaching in relation to their total number of teaching hours. All course instructors at the UOC have their main occupation in other institutions. Some of them are experienced professionals, while others are teachers at on-site universities. Currently, the teachers who dedicate all of their time to online teaching come from the professional sphere.

Measures

Emotions in response to teaching online

To collect data related with emotions in response to teaching online, the differential semantic used in this work was adapted from an instrument previously developed by Badia, Meneses and Monereo (2014). The requirements of this type of measuring tool were taken into consideration (Osgood, Suci & Tannenbaum, 1957), as were the results of other contributions on teachers' emotional experiences in teaching online (Regan et al., 2012).

In the study, eleven bipolar adjectives were employed to report on teachers' emotions, using a seven-point Likert scale: negative-positive, bad-good, anxious-relaxed, tiresome-lightweight**,** passive-participatory, secondary-important, inappropriate-appropriate, stressful-peaceful, difficult-easy, fixed-adaptable, and slow-quick. Semantic differential scores were transformed to fit a scale ranging from -3 to +3, which was easier to interpret with a middle or neutral point at zero (0).

Teachers' approaches to teaching online

The scale of approaches to teaching online included twelve items and was developed previously by Badia, Garcia and Meneses (2017), taking into account descriptions of approaches to teaching online from the literature (Gonzalez, 2009). The teachers were

asked about their level of agreement with each item using a five-level ordinal response scale, ranging from 'strongly disagree' to 'strongly agree'. Principal component analysis (PCA) showed an acceptable three-component structure (KMO=0.834 and a significant Bartlett's test, p=0.000) explaining 59.30% of the total variance: content acquisition approach (CAA) (33.98%), collaborative learning approach (CLA) (13.30%), and knowledge building approach (KBA) (11.75%).

The first approach (CAA) focuses on being able to use the best technology to transmit the content and presenting content in such a way that learning is promoted. Teachers who use a CAA feel that, in order to help students access content in a fast, easy and safe way while also allowing teachers to track students' individual study, multimedia technology with interrelated digital content must be used. The second approach (CLA) emphasizes promoting learners' participation in collaborative learning activities to share knowledge in virtual learning environments. Finally, in the third approach (KBA), teaching mainly focuses on ensuring that the processes of knowledge construction take place, such as designing educational scaffoldings and learning supports, solving content doubts and supervising the correct application of learning skills and adequate task resolution. The rotated solution (Oblimin with Kaiser's normalization) provided component loadings ranging from 0.739 to 0.827, from 0.723 to 0.756, and from 0.569 to 0.781, respectively. The three components showed an acceptable reliability, with a Cronbach's α of 0.762, 0.812, and 0.682, respectively.

Teachers' roles in teaching online

The scale used to assess teachers' roles in teaching online was also previously developed by Badia, Garcia and Meneses (2017) and includes twenty items selected from qualitative studies on teachers' roles in teaching in virtual learning environments (Álvarez, Guasch & Espasa, 2009; Baran, Correia & Thompson, 2011). Overall, the items reflect different ways in which teachers act while teaching online. Instructors assessed each teacher action, selecting one of five alternatives ranging from 'not important' to 'very important'. PCA showed an acceptable five-component structure (KMO=0.853 and a significant Bartlett's test, p=0.000), explaining 62.07% of the total variance in the following teachers' roles: the social interaction role (SIR) (29.78%), the instructional design role (IDR) (10.91%), the technology use role (TUR) (9.22%), the learning assessment role (LAR) (6.65%), and the learning support role (LSR) (5.52%).

The SIR consists of promoting relationships of trust and mutual commitment among students, and between students and the teacher, resolving group conflicts and enhancing mutual communication among participants. In the IDR, teachers set objectives and define skills, select and adapt content and design learning and assessment activities. With regard to the TUR, teachers design technological learning tools, incorporate new tools into the online classroom, guide students in the use of the virtual learning environment and provide aids to promote the use of specific technological tools. In general, the tools whose use is encouraged are those for creating digital presentations, RSS readers, tools for organizing content on the network through markers, blogs, and wikis. The LAR consists mainly of conducting formative and summative assessments, such as answering students' questions about the content, correcting mistakes in student understanding, monitoring and evaluating the individual or group learning activities, and communicating assessment information to students. Finally, in the LSR, the current teaching task consists of monitoring, guiding and evaluating student participation in social interaction activities, guiding individual study processes, controlling and monitoring the learning pace, explaining the study methodology and organization, and presenting and sequencing learning activities.

The five components showed an acceptable reliability, with a Cronbach's α of 0.807, 0.743, 0.837, 0.72, and 0.763, respectively. The rotated solution (Oblimin with Kaiser's normalization) provided component loadings ranging from 0.726 to 0.864, from 0.726 to 0.768, from 0.795 to 0.827, from 0.664 to 0.781, and from 0.679 to 0.820, respectively.

Data analysis
All measures were tested for distribution and to fulfil the statistical requirements of the procedures used. As a first step, descriptive and initial bivariate correlations of measures were calculated in order to detect relationships between variables. Secondly, a multivariate regression analysis was used to take a closer look at every explanatory variable and each particular type of emotion linked to teaching online, testing for separate effects and controlling for the other variables included in the models.

Results
Research Question 1. What type of emotions do teachers feel in response to the

experience of teaching online in an online university?

Three types of emotions in regard to teaching online in an online university have been identified, which we have named satisfaction, relief and pleasure with teaching online. PCA showed an acceptable three-component structure (KMO=0.775 and a significant Bartlett's test, p=0.000) explaining 52.15% of the total variance (satisfaction accounted for 26.53%; relief explained 15.98%; and pleasure explained 9.64% of the total variance). The rotated solution (Oblimin with Kaiser's normalization) provided component loadings ranging from 0.686 to 0.757, from 0.662 to 0.812, and from 0.500 to 0.796, respectively. The three components showed an acceptable reliability, with a Cronbach's α of 0.701, 0.712, and 0.50, respectively (see Table 2).

Table 2. Rotated component matrix (component loadings) and descriptive statistics for emotions in teaching online (N = 965)

	M	SD	F1	F2	F3
Satisfaction with teaching online	**1.71**	**0.79**			
Secondary-Important	1.08	1.18	**0.757**	0.046	0.188
Bad-Good	1.88	0.95	**0.737**	0.241	0.420
Inappropriate-Appropriate	1.77	1.04	**0.724**	0.294	0.273
Negative-Positive	2.11	1.15	**0.686**	0.067	0.208
Relief with teaching online	**0.34**	**0.80**			
Stressful-Peaceful	0.13	1.18	0.167	**0.812**	0.103
Anxious-Relaxed	0.66	1.17	0.198	**0.752**	0.191
Tiresome-Lightweight	0.32	0.94	0.164	**0.685**	0.162
Difficult-Easy	0.24	1.06	0.031	**0.662**	0.011
Pleasure with teaching online	**1.11**	**0.87**			
Fixed-Adaptable	1.36	1.24	0.149	0.117	**0.796**
Passive-Participatory	1.01	1.48	0.276	0.034	**0.681**
Slow-Quick	0.98	1.11	0.249	0.146	**0.500**

Satisfaction with teaching online describes how a teacher feels in respect to fulfilment, pleasure or interest. Relief with teaching online refers to the emotions related to the comfort or stress of teaching online, and pleasure with teaching online alludes to the flexibility of teaching in a virtual learning environment.

Research Question 2. Are teachers' emotions about teaching online related to their approaches to teaching, their teaching roles at university or their individual

characteristics?

Three multiple regression models applied to the emotions involved in teaching online provide relevant information about the extent to which teachers' individual characteristics influence each type of emotional response to teaching online. Taking into account the global adjustment of the three regression models, findings indicate that all three provide a degree of explanation: adjusted R^2=0.163, adjusted R^2=0.014, and adjusted R^2=0.110, respectively (see Table 3).

Table 3. Results of multiple linear regression analysis predicting all three types of emotions in teaching online

	Satisfaction with teaching online				Relief with teaching online				Pleasure with teaching online			
	B	S.E.	Beta	t	*B*	S.E.	Beta	t	*B*	S.E.	Beta	t
Intercept	-1.403	0.308		-4.561[c]	-0.394	0.338		-1.165	-0.845	0.309		-2.738[b]
Gender												
Female	-	-	-	-	-	-	-	-	-	-	-	-
Male	-0.022	0.05	-0.014	-0.047	-0.069	0.055	-0.043	-1.262	0.098	0.050	0.063	**1.950[a]**
Age	-0.002	0.003	-0.023	-0.709	0.004	0.004	0.034	0.942	-0.004	0.003	-0.037	-1.073
Education level												
Bachelor's degree	-	-	-	-	-	-	-	-	-	-	-	-
Master's degree	-0.012	0.065	-0.007	-0.190	0.015	0.071	0.009	0.213	0.043	0.065	0.027	0.671
PhD	-0.131	0.072	-0.081	-1.819	0.023	0.079	0.014	0.296	-0.083	0.072	-0.053	-1.147
Academic background												
Social Sciences	-	-	-	-	-	-	-	-	-	-	-	-
Health Sciences	-0.064	0.095	-0.021	-0.674	-00172	0.105	-0.055	-1.637	0.052	0.096	0.017	0.540
Engineering	0.032	0.071	0.015	0.447	-0.084	0.078	-0.038	-1.074	-0.023	0.071	-0.011	-0.322
Sciences	0.127	0.100	0.039	1.267	-0.015	0.110	-0.005	-0.140	0.214	0.100	0.067	**2.128[a]**
Humanities	-0.088	0.077	-0.077	-1.144	-0.082	0.085	-0.032	-0.965	0.032	0.077	0.013	0.408
Online teaching experience												
Less than 3 years	-	-	-	-	-	-	-	-	-	-	-	-
From 3 to 10 years	0.120	0.056	0.076	2.157	0.069	0.061	0.043	1.124	0.015	0.056	0.009	0.26
More than 10 years	0.128	0.075	0.065	1.714	0.127	0.082	0.063	1.546	-0.017	0.075	-0.009	-0.226
Studies taught												
Undergraduate	-	-	-	-	-	-	-	-	-	-	-	-
Graduate/PhD	0.057	0.069	0.025	0.0829	-0.125	0.076	-0.054	-1.652	0.126	0.069	0.057	1.830
Online teaching hours												
Less than 25%	-	-	-	-	-	-	-	-	-	-	-	-
From 26% to 50%	0.095	0.070	0.049	1.351	-0.070	0.077	-0.036	-0.900	0.124	0.071	0.066	1.753
From 51% to 99%	0.094	0.073	0.049	1.284	-0.136	0.080	-0.071	-1.702	0.138	0.073	0.075	1.896
100%	0.109	0.073	0.064	1.498	-0.019	0.080	-0.011	-0.236	0.151	0.073	0.091	**2.058[a]**
Teachers' roles												
Social Interaction	0.064	0.041	0.062	1.559	0.003	0.045	0.003	0.065	0.090	0.041	0.091	**2.193[a]**
Instructional Design	0.128	0.050	0.088	**2.559[a]**	-0.040	0.055	-0.027	-0.732	0.100	0.050	0.070	**1.986[a]**
Technology Use	0.044	0.039	0.042	1.135	0.084	0.043	0.080	**1.973[a]**	0.018	0.039	0.018	0.472
Learning Assessment	0.094	0.059	0.059	1.585	0.118	0.065	0.074	1.825	-0.022	0.059	-0.015	-0.380
Learning Support	0.128	0.045	0.113	**2.862[b]**	0.086	0.049	0.075	1.756	0.141	0.045	0.128	**3.143[b]**
Approaches to teaching												
Content Acquisition	-0.011	0.042	-0.010	-0.269	-0.092	0.046	-0.080	**-1.976[a]**	-0.001	0.042	-0.001	-0.029
Collaborative Learning	-0.045	0.050	-0.037	-0.908	0.033	0.055	-0.026	-0.596	-0.020	0.050	-0.016	-0.391
Knowledge Building	0.351	0.057	0.232	**6.158[c]**	0.030	0.063	0.019	0.472	0.226	0.057	0.154	**3.963[c]**
Model summary												
R^2 (Adjusted R^2)	0.182 (0.163)				0.037 (0.014)				0.130 (0.110)			
F for the model	9.494[c]				1.634[a]				6.378[c]			

| Sample size | 960 | 960 | 960 |

Only the academic background (teachers that have studied sciences) and online teaching hours (100% of time devoted) appear to be related to satisfaction. On the contrary, all teachers' roles as well as CAA and KBA are related to at least one type of emotion in teaching online.

There are a number of factors that positively influence the appearance of emotions associated with satisfaction. The IDR has a weak weight (Beta=0.088, p<0.05), the LSR has a moderate weight (Beta=0.113, p<0.01), and the KBA has a high weight (Beta=6.158, p<0.001). Relief is positively and weakly influenced by the TUR (Beta=0.080, p<0.05) and negatively and weakly influenced by the CAA (Beta=-0.080, p<0.05). Finally, pleasure is positively and weakly influenced by gender (Beta=0.063, p<0.05), where males show a higher level than their female counterparts, an academic background in the sciences (Beta=0.067, p<0.05), the '100%' online teaching hours (Beta=0.091, p<0.05), the SIR (Beta=0.091, p<0.05), and the IDR (Beta=0.070, p<0.05). It is also positively and moderately influenced by the LSR (Beta=0.128, p<0.01), and positively and highly influenced by the KBA (Beta=0.154, p<0.001).

Conclusions

The first research question explored what type of emotions teachers feel in response to the experience of teaching online in an online university. These results provide a new categorization of emotions in teaching, which may be useful for classifying a large number of the emotions related to university teaching found in previous contributions. Two emotions identified by Trigwell (2012), pride and anxiety, could be subsumed into broader categories. Pride can be included in the emotions grouped under satisfaction, and anxiety can be included in the emotions related to relief. Emotions identified by Löfström and Nevgi (2013), such as enjoyment of and satisfaction and contentment with teaching, could be included in the category of satisfaction, and feelings of finding teaching threatening, burdensome and unpleasant could fit into relief. As regards the emotions identified by Badia, Meneses and Monereo (2014), superficial-deep, bad-good and inopportune-timely would be related with satisfaction, and difficult-easy and heavy-light,

with relief.

Finally, emotions identified by Regan et al. (2012) are linked easily with categories included in our classification: satisfied, convenient, pleased or proud, in the category satisfaction; anxious, apprehensive, assured, communication anxiety, helpless, insecure or unsure, in that of relief; and restricted, disconnected, liberated, intrigued or connected, in that of pleasure.

In response to the second research question, the principal factors influencing teachers' emotions towards their teaching are individual characteristics mainly related to teaching online, such as teachers' roles and approaches to teaching online, as shown in the research by Kordts-Freudinger (2017). Overall, the teachers' roles of learning support and instructional design have a greater influence, but social interaction and technology use also influence at least one type of teaching emotion. These findings support previous studies (Hagenauer & Volet, 2012; Rowe, Fitness & Wood, 2013), which found a positive relationship between learning support and the emotions of happiness/sadness in teaching.

Findings also show a significant and positive relationship between the KBA and both satisfaction and pleasure, and a significant and negative relationship between the CAA and relief. These findings are consistent with the contributions of Postareff and Lindblom-Ylänne (2007), Trigwell (2012), Badia, Meneses and Monereo (2014) and Kordts-Freudinger (2017), who found a positive relationship between the adoption of a student-focused approach and a higher positive evaluation of teaching.

Only pleasure is affected by other factors, such as gender, academic background and online teaching hours. Contrary to other previous studies (Åkerlind, 2003), our results do not support that in online teaching greater teaching experience is associated with more comfort and confidence in teaching.

Our research suggests that the emotions linked with teaching satisfaction are particularly associated with the instructional design and learning support roles. In a way, the functions related to establishing objectives, selecting content and designing activities, and monitoring and guiding students in their learning processes affect whether teachers feel satisfied or unsatisfied. In addition, teachers' relationship with

technology plays a key role in them feeling relaxed or stressed, which is quite understandable in an online teaching and learning environment. Moreover, the emotions which prompt teachers to report teaching online as something pleasant (adaptable, participatory) are influenced not only by their roles as instructional designers and student guides, but also by their commitment to promoting positive social relationships among students and among themselves.

Teachers who believe that they must provide scaffolding for students and ensure that they are properly applying their skills and learning the content well may feel that teaching online is satisfactory and pleasant. On the contrary, teachers who feel that teaching online consists mainly of providing students with technological environments in which to carry out their learning tasks correctly and access content feel anxious and stressed about teaching online.

Despite its strengths, this study has several limitations. The degree of explanation obtained from the results of three multiple regression models leads us to conclude that, in future studies, new factors with a greater explanatory potential should be included. According to Hagenauer and Volet (2012), Regan et al. (2012), and Rowe, Fitness and Wood (2013), other factors should be taken into consideration, such as the ways in which the curriculum is delivered, the characteristics of the students, the social relationship between the teacher and the students, and the level of student achievement.

Nevertheless, the relationships between emotional responses to teaching online and factors that influence these emotions help to explain the potential emotional barriers that could hinder the adoption of new online teaching strategies. Further studies should be conducted to extend and corroborate these relationships in a particular course setting, while taking into account contextual aspects.

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