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A cross-sectional study of teacher's motivational profiles during COVID-19 lockdown: relationship with teaching satisfaction, loneliness and affects

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Abstract

The study classified motivational teaching profiles and examined whether they differed significantly in terms of satisfaction, loneliness, and affects. The sample consisted of 315 teachers working in Spanish educational institutions during the COVID-19 pandemic (*Mage* = 41.95; *SD* = 10.18; 33% male), who completed the following online questionnaires: the Work Tasks Motivation Scale, the Teaching Satisfaction Scale for Teachers, the Affective Balance Scale, and the UCLA Loneliness Scale. The results revealed two profiles: (a) an average intrinsic motivation profile, characterized by average intrinsic motivation and identified regulation, and low levels of introjected regulation, external regulation, and amotivation; and (b) a high amotivation profile, characterized by low intrinsic motivation, low identified and introjected regulation, but high external regulation and amotivation. MANOVA analyses revealed significant differences between the profiles in terms of loneliness ($F = 29.76$; $\eta^2 = 0.80$), teaching satisfaction ($F = 102.75$; $\eta^2 = 0.24$), positive affect ($F = 12.28$; $\eta^2 = 0.30$), and negative affect ($F = 63.19$; $\eta^2 = 0.16$). Teachers in the average intrinsic motivation profile (a) reported higher levels of teaching satisfaction and positive affects, as well as lower levels of negative affects. However, contrary to previous findings, they also reported higher levels of loneliness. In conclusion, the study identified two distinct motivational profiles among teachers, associated with significant differences in loneliness, teaching satisfaction, and affective balance. The findings underscore the importance of further research and targeted interventions, particularly to support male and older teachers experiencing low motivation.

Keywords Teaching satisfaction, Loneliness, Affects, Cluster analysis

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The COVID-19 pandemic

The psychological and social effects of the home lockdown due to the COVID-19 pandemic revealed that the rates of depression, anxiety and substance abuse were higher in 2020 than in previous years [1–4]. Loneliness, resulting from isolation, would be at the root of the mentioned psychological problems [5]. In the educational context, existing research has examined the effects of the COVID-19 lockdown from the perspectives of its impact on students and teachers [6]. The findings reveal that the impact of COVID-19 lockdown on teachers' motivation was complex and multifaceted. While it created significant challenges such as burnout, emotional detachment from students, and inequities in access to resources, it also stimulated professional growth and resilience for many educators [7]. As such, the present study aimed to classify motivational teaching profiles and examine whether they differ significantly in terms of satisfaction, loneliness and experience of affect during a period of compulsory online teaching. To date, it seems that no research has assessed the impact of teacher motivation on these variables, which play a crucial role in the performance and well-being of educators.

Literature review

The self-determination theory

The Self-determination theory (SDT) is a motivational postulate that suggests individuals are naturally curious about their environment and tend to explore it for better comprehension [8–10]. This theory also assumes that individuals are interested in learning and progressing due to our human nature [11]. SDT focuses on five types of motivation (intrinsic motivation, identified regulation, introjected regulation, external regulation and amotivation) [12]. Intrinsic motivation (i.e., the inherent pleasure and interest towards an action or activity) and identified regulation (i.e., the conviction of the value and importance of a behavior) are featured by a sense of volition and approbation [13]. They are considered the most self-determined forms. Introjected regulation (i.e., internal pressure to avoid feelings of guilt) and external regulation (i.e., external pressure to obtain rewards or to evade criticism) are linked to feelings of pressure and obligation felt by an individual due to external sources [14]. Amotivation refers to a lack of motivation towards an action or activity someone is performing [13, 15].

Implications of the self-determination theory for teacher´s motivation

To date, most studies aiming to understand the mechanisms underlying motivation and teaching have adopted a bivariate approach, resulting in a relative scarcity of research using multivariate methods [16, 17]. While these bivariate studies have yielded valuable insights by examining dimensions such as intrinsic motivation, identified motivation, external and internal regulation, and amotivation separately, they often overlook the dynamic interplay among these motivational constructs [18].

In the present study, we adopt a person-centered approach to investigate teachers' motivational profiles. This methodology aligns with Self-Determination Theory, which emphasizes the qualitative differences in motivation. A person-centered approach allows for a more nuanced exploration of how different types of motivation interact and influence teacher functioning. It enables the identification of individual differences, combinations of motivational factors, and the emergence of distinct subgroups with specific motivational patterns. Furthermore, it supports the examination of motivational profiles across various educational settings and cultural contexts [18, 19].

Our study aims to explore the relationship between teachers' motivational profiles and their levels of satisfaction, loneliness, and affect. We also consider contextual and demographic variables, such as gender, age, years of experience, teaching modality (online/blended), and school type (public/private), which may significantly shape teachers' perceptions of their professional motivation [20]. Existing research generally reports higher motivation levels among female teachers, younger educators, those with less experience [21], and individuals working in blended learning environments or private institutions [22]. However, findings in this area remain inconsistent [23–25], underscoring the need for further investigation into how these variables relate to motivational profiles.

Finally, this study seeks to shed light on the composition of teachers' motivational profiles in Spain during an epidemic context. These findings may prove valuable for future public health crises or lockdown scenarios, offering a parsimonious framework to classify teacher motivation and inform targeted interventions. Additionally, the existence of a comparable pre-pandemic study offers a unique opportunity to examine changes in motivational patterns across different contextual conditions [16].

Job satisfaction among teachers

Job satisfaction can be described as the pleasant or positive emotional state that arises when a person values his/her job experience positively. However, there is no universally accepted definition of this construct [26–28]. Job satisfaction is counted among the most evaluated job attitudes [29] and its effectiveness in predicting organizational effectiveness and well-being in workers is widely established [30]. The research led by Shaver and Lacey's [31] determined two types of job satisfaction: the first one was described as a worker's immediate work environment and the second one as global career satisfaction. This construct has been associated with determined

features of the workplace: satisfaction with the supervisor, work, payment, advance opportunities and coworkers [32], as well as with work engagement [33], life satisfaction [34], service quality [35, 36], performance [37], demographic and personality characteristics [38]. It is supposed to be an intermediary between emotional intelligence and organizational responsibility [39].

Regarding teachers, the evaluation of teaching satisfaction would concern a cognitive and judgmental process beyond the exclusive evaluation of the affective state [34]. In their work, Lee and Nie [40] led their research among teachers in Singapore, focusing on the needs for competence and autonomy. Their results indicated that competence and autonomy need satisfaction to imply a greater level of job satisfaction. Another study that was conducted among Canadian teachers, showed that basic psychological need satisfaction was associated with greater job satisfaction, in addition to greater levels of autonomous motivation, work-related well-being and organizational commitment [41]. Several studies performed to identify motivational profiles among Physical education teachers showed that autonomous motivation for teaching positively predicted job satisfaction [42, 43], and negatively predicted emotional exhaustion [44] – [45]. It has also been described similar outcomes in job satisfaction in a group of Physical education teachers "relatively autonomously motivated" and another "autonomous-controlled motivated" group, but lower values of emotional exhaustion in the autonomous motivated group [46].

Loneliness and teaching

The feeling of loneliness derives from the difference between the expected levels of social relationships and the obtained ones [47]. Feelings of loneliness depend more on the quality of social relationships than on the number of maintained social relationships [48]. Loneliness has received increased attention in the last two decades due to its estimated high prevalence rate [49]. Loneliness may negatively affect the biological and cognitive level, worsening the person's ability for self-regulation [50, 51]. In complex cases, loneliness is related to the appearance of stress, reduced physical activity and a deterioration in the quality of sleep, as well as mental illnesses such as depression and alcoholism [52, 53].

Grounded in the SDT, the study by Chua & Koestner [54] to explore the relationship between solitary activities, loneliness and life satisfaction, concluded that negative outcomes of spending time alone only stem from controlled motivation. Another study, based on the mini-theory of Basic Psychological Needs, revealed that extraversion predicts loneliness in the workplace, which impacts job performance [48]. Among teachers, it has also been shown that high levels of loneliness can lead to weaker beliefs about professional competence. The same study reveals that teachers in a romantic relationship, those who studied at private colleges and those who teach in public schools are more likely to experience loneliness. Finally, it is concluded that the higher the level of loneliness is, the greater the teacher's dissatisfaction with their work is [48].

The importance of affects for teachers

Affects are critical in human decisions and behaviors related to emotions, moods and feelings. They are a fundamental aspect of human beings that influence: reflexes, cognition, perceptions, social judgements and human motivation [55]. Scientific evidence has established the role of positive affects on motivation and performance. Happy teachers are supposed to show better job performance and a more adapted motivational profile [18, 56]. Happiness triggers a knock-on effect on productivity in a teaching institution and individual teachers' well-being [57]. According to SDT, behaviors are better internalized if they lead to the satisfaction of basic psychological needs. As such, autonomously motivated teachers experience positive outcomes like enjoyment, interest, life satisfaction, and vitality [58].

The current work

This research work provides novelty in the study of the existing relationship between teachers' motivation and three factors that influence their well-being at the workplace: teaching satisfaction, loneliness, and affect, all of which are examined during the COVID-19 period. The study aimed to classify motivational teaching profiles and examine whether teaching profiles differed significantly in terms of teaching satisfaction, loneliness, and affect during this time. Regarding the objectives and proposed background of this work, the following hypothesis was established: Under conditions of lockdown due to the COVID-19 pandemic, teachers with a high or average intrinsic motivation profile will exhibit more adaptive profiles regarding loneliness, teaching satisfaction, and positive/negative affects compared to low-motivated and amotivated teachers.

Method

Participants

The sample was made up of 315 teachers ($M_{age} = 41.95$; $SD = 10.18$), 67% were female and 33% were male. The two criteria for including participants in our study were: being a teacher at the time of lockdown due to the COVID-19 pandemic and working for an educational institution in Spain. The sampling procedure was voluntary. Those participants who wished to participate in the study and who fulfilled the two inclusion criteria, responded to an online survey. The years of experience

in teaching were as follows: 30.2% fewer than five years, 17.8% between six and ten years, 14% between ten and fifteen years, 14.3% between fifteen and twenty years, and 23.5% more than twenty years. Participants' teaching types were: 9.5% online exclusively and 90.5% online and face. The most prevalent levels of teaching were: 36.4% University, 24.5% Secondary School and Professional Education, 16.8% Primary School and 22.3% others.

Measures

Assessment of Teaching Motivation. The Work Tasks Motivation Scale for Teachers (WTMST) by Fernet et al. [11] was used to examine teacher motivation. This scale is made up of 18 items preceded by the statement: "I get involved in teaching…." and distributed in five subscales of three items each: intrinsic motivation (e.g., "Because it is pleasant to carry out this task"), identified regulation (e.g., "Because it is important for me to carry out this task"), introjected regulation (e.g., "Because if I don't carry out this task, I will feel bad"), external regulation (e.g., "Because my work demands it") and amotivation (e.g., "I used to know why I was doing this task, but I don't see the reason anymore"). Responses are scored on a Likert scale with seven response options. Furthermore, previous studies have tested the reliability and validity of the aforementioned scale [59, 60]. In this work, the following Cronbach's alphas and McDonald's Omega were obtained in the different subscales: intrinsic motivation ($\alpha = .86$; $\Omega = .87$), identified regulation ($\alpha = .81$; $\Omega = .82$), introjected regulation ($\alpha = .87$; $\Omega = .88$), external regulation ($\alpha = .60$; $\Omega = .61$) and amotivation ($\alpha = .84$; $\Omega = .86$).

Evaluation of Teaching Satisfaction. Teaching Satisfaction Scale by Ruiz-Quiles et al. [16]. The scale consisted of 5 items grouped into a single factor (e.g., *"I am satisfied with my teaching work"*). The answers were valued through a Likert-type scale that ranged from 1 (totally disagree) to 7 (totally agree). The Cronbach Alpha obtained in the present study was 0.84 and the McDonald Omega was 0.85.

Affective Balance. The Affective Balance Scale by Warr [61] and the Spanish version by Godoy and Godoy-Izquierdo [62] were used. The scale consists of 18 items, in which the participants must indicate whether they have experienced the states listed in the last week. The scale is a Likert-type with 3 response alternatives (1 = "Little or never", 2 = "Sometimes", 3 = "A lot or generally"). The instrument directly measures both the experience of positive affect (9 items; e.g., "Have you ever felt really cheerful?") and negative affect (9 items; e.g., "Have you ever felt very worried?"). The Cronbach's alphas obtained in the study for the scales were 0.80 for negative affects and 0.86 for positive affects. Additionally, the McDonald Omega was found to have negative effects of 0.81 and positive effects of 0.87.

Loneliness Evaluation. The UCLA Loneliness Scale by Russell [57, 58] was used to evaluate loneliness. This scale consists of 10 items with four response options, designed to examine loneliness in diverse populations. Furthermore, the scale consists of a single factor for measuring loneliness. To cite some examples of items: "How often do you feel unhappy doing things alone?", "How often do you feel that you have no one to talk to?", etc. The scale has shown appropriate levels of reliability and validity in previous works [57, 58]. Furthermore, Cronbach's alpha coefficients of 0.80 and McDonald's Omega of 0.81 were obtained in this work.

Procedure

The work adhered to international ethical guidelines, and participant anonymity was maintained. Participation in the study was voluntary, as confirmed in the informed consent. Informed consent was obtained from all participants before they participated in the study. The sample taking was carried out through Google Forms software. Furthermore, it was emphasized that anonymity was maintained in the informed consent process. A cross-sectional study was designed to achieve the study's objectives. Firstly, the participants completed the informed consent. Then, they began with the comprehensive survey to complete all the scales: the *ad hoc* Sociodemographic questionnaire, UCLA, WTMST, EBA, and ESD. Once they had finished completing the questionnaires, the surveys were recorded in the Google Drive database. Data were collected online between May 2020 and December 2020.

Data analyses

SPSS 20 was the software used to conduct the analysis. Firstly, the data was filtered to seek multivariate outliers and multicollinearity of scales. Secondly, hierarchical and non-hierarchical analyses were performed using WTMST standardized scores to increase confidence in the stability of the cluster solution [63]. Specifically, a hierarchical cluster analysis was conducted using Ward's linkage method with squared Euclidean distance to identify teacher motivation clusters. Then, to analyze the differences in teacher motivation clusters regarding teaching satisfaction, affects, and loneliness, a MANOVA was performed. Partial Eta squared ($\eta 2$) was used to provide an effect size index in ANOVA analyses. In addition to analyzing sociodemographic cluster covariation, a series of chi-squares were conducted using qualitative variables: gender, type of teaching (online, face-to-face, blended), type of centre (public, private, and mixed), and participation in sports. Additionally, a MANOVA was performed to analyze quantitative variables and examine the impact of years in teaching and age on motivation profiles.

Results

Descriptive statistics

The descriptive statistics of the examined variables in the study were presented in Table 1. The results showed high scores in intrinsic motivation, identified regulation and teaching satisfaction. Besides, results revealed average scores in introjected regulation, external regulation and loneliness. On the other hand, results showed low scores in amotivation, positive affects and negative affects. Moreover, the results of the correlational analysis revealed no multicollinearity between the study variables, as correlations ranged from – 0.55 to 0.73.

Teaching motivation profiles

The agglomeration schedule coefficient and the dendrogram revealed that the most suitable solution was the presence of two distinct profiles. The non-hierarchical and hierarchical procedures revealed that the two clusters were almost identical within both methods. Subsequently, a MANOVAs analysis was run to detect significant multivariate effects between the two clusters on teaching motivation (Wilk's Lambda = 0.30, F (5) = 142.79, $p < .001$, $\eta 2 = 0.69$). The ANOVAs analysis indicated significant differences ($p < .01$) in: Intrinsic Motivation, Identified Regulation, Internal Regulation and Amotivation. However, only the Introjected regulation did not report significant differences. These outcomes provide evidence for the tenability and reliability of the cluster solution (Table 1). The descriptive labels that define each cluster are: (a) Average intrinsic motivation profile, which is characterized by average intrinsic motivation, average identified regulation, low introjected regulation, low internal regulation and low amotivation. (b) A high amotivation profile, characterized by low intrinsic motivation, low identified regulation, low introjected regulation, high external regulation, and high amotivation (Fig. 1).

Cluster group differences on loneliness, teaching satisfaction and affects

Results of MANOVA analyses revealed significant differences across teacher variables: loneliness, teaching satisfaction, balance of positive affects and balance of negative affects (Wilk's Lambda = 0.69, F (4) = 34.05, $p < .001$, $\eta^2 = 0.30$). In particular, results showed that teachers from the Average Intrinsic Motivation Profile (a) reported significantly higher scores in loneliness, teaching satisfaction, positive affects and lower levels in negative affects (Table 2). Besides, a high amotivation profile (b) revealed significantly lower scores in loneliness, teaching satisfaction, and positive affects, and higher levels in negative affects. (Fig. 2).

Cluster differences in demographic variables

The chi-square tests did not report significant differences across motivation profiles on teachers' type of centre (public or private) (χ^2 (2) = 0.1.40; $p > .05$), type of teaching (online or blended) (χ^2 (2) = 1.54; $p > .05$). However, the results revealed significant gender differences (χ^2 (2) = 5.12; $p < .05$). Particularly, the women pertained more to the (a) Moderate Intrinsic Motivation Profile (52.38%). Besides, the results of ANOVA reported significant differences in cluster pertinence in the quantitative variable "age" ($F = 294.11$; $p < .05$; $Eta^2 = 0.01$), in which profile (a) reported a lower score ($M = 41.38$) than profile (b) ($M = 43.60$).

Discussion

The current study aimed to classify motivational teaching profiles and examine whether teaching profiles significantly differed on teaching satisfaction, loneliness and affects. Results revealed that two profiles emerged from the teacher's sample: (a) Average intrinsic motivation profile, which is characterized by average intrinsic motivation, average identified regulation, low introjected

Table 1 Descriptive statistics and correlations among the variables

	1	2	3	4	5	6	7	8	9
1. Intrinsic Motivation	-								
2. Identified Regulation	0.73**	-							
3. Introjected Regulation	0.17**	0.20**	-						
4. External Regulation	−0.26**	−0.20**	0.14**	-					
5. Amotivation	−0.45**	−0.45**	0.09	0.39**	-				
6. Loneliness	0.34**	0.30**	−0.17**	−0.10	−0.32**	-			
7. Teaching Satisfaction	0.67**	0.60**	0.10	−0.16**	−0.42**	0.36**	-		
8. Positive Affects	−0.28**	−0.17**	0.20**	0.13*	0.22**	−0.55**	−0.35**	-	
9. Negative Affects	0.46**	0.37**	−0.07	−0.26**	−0.46**	0.44**	0.44**	−0.48**	-
Mean	6.12	6.02	3.28	3.55	1.98	2.99	5.61	1.75	2.26
Standard Deviation	0.97	1.05	1.74	1.33	1.30	0.43	1.07	0.36	0.44
Skewness	-1.63	-1.52	0.46	−0.08	1.51	−0.57	-1.16	0.11	−0.41
Kurtosis	3.53	3.02	−0.81	−0.60	1.57	0.64	1.44	−0.51	−0.39

Note. $p < .05^{*}$; $p < .01^{**}$

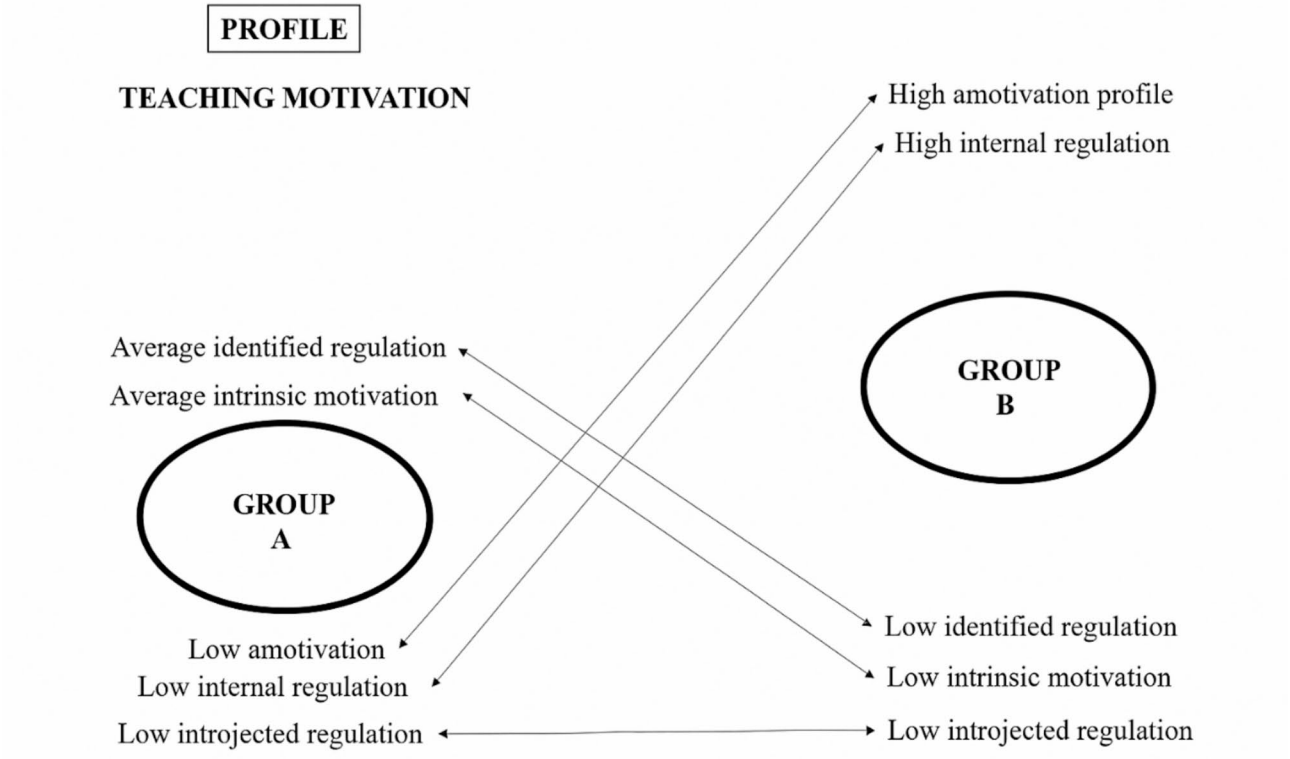

Fig. 1 Cluster combination in the motivation variables

Table 2 Cluster differences in motivation variables of teachers

Variables	(a) Average Intrinsic Motivation Profile ($n=234$) M (SD)	(b) High Amotivation Profile ($n=81$) M (SD)	F (142.79)	Eta^2
Intrinsic Motivation	0.39 (0.56)	-1.13 (1.11)	251.71**	0.44
Identified Regulation	0.39 (0.58)	-1.13 (1.08)	251.68**	0.44
Introjected Regulation	0.04 (1.01)	−0.14 (0.94)	2.27	0.00
Internal Regulation	−0.25 (0.91)	0.73 (0.86)	71.53**	0.18
Amotivation	−0.41 (0.53)	1.18 (1.08)	300.62**	0.50
Loneliness	3.06 (0.41)	2.77 (0.44)	29.76**	0.08
Teaching Satisfaction	5.92 (0.79)	4.71 (1.24)	102.75**	0.24
Negative Affects	1.70 (0.36)	1.87 (0.35)	12.28**	0.03
Positive Affects	2.37 (0.39)	1.95 (0.44)	63.19**	0.16

Note. ** $p<.01$

regulation, low internal regulation and low amotivation and (b) High amotivation profile, which is characterized by low intrinsic motivation, low identified regulation, low introjected regulation, high internal regulation and high amotivation. These results are contradictory to previous works that have examined motivation profiles using cluster analysis, because they revealed the existence of three profiles with different score combinations, which is different in comparison to the present work [16, 17]. It is noteworthy to highlight these differences, as the study by Ruiz-Quiles [16] utilized the same instrument and the sample was taken in the same country. However, the lockdown conditions may have modified the profile combinations, which could account for the differences between this study and the present one. As it has been described in previous works, all these individual differences in motivational profiles might impact teaching practice, which, in turn, can influence student learning [18, 63]. In fact, teachers' self-reported autonomous motivation for teaching has been found to promote self-reported

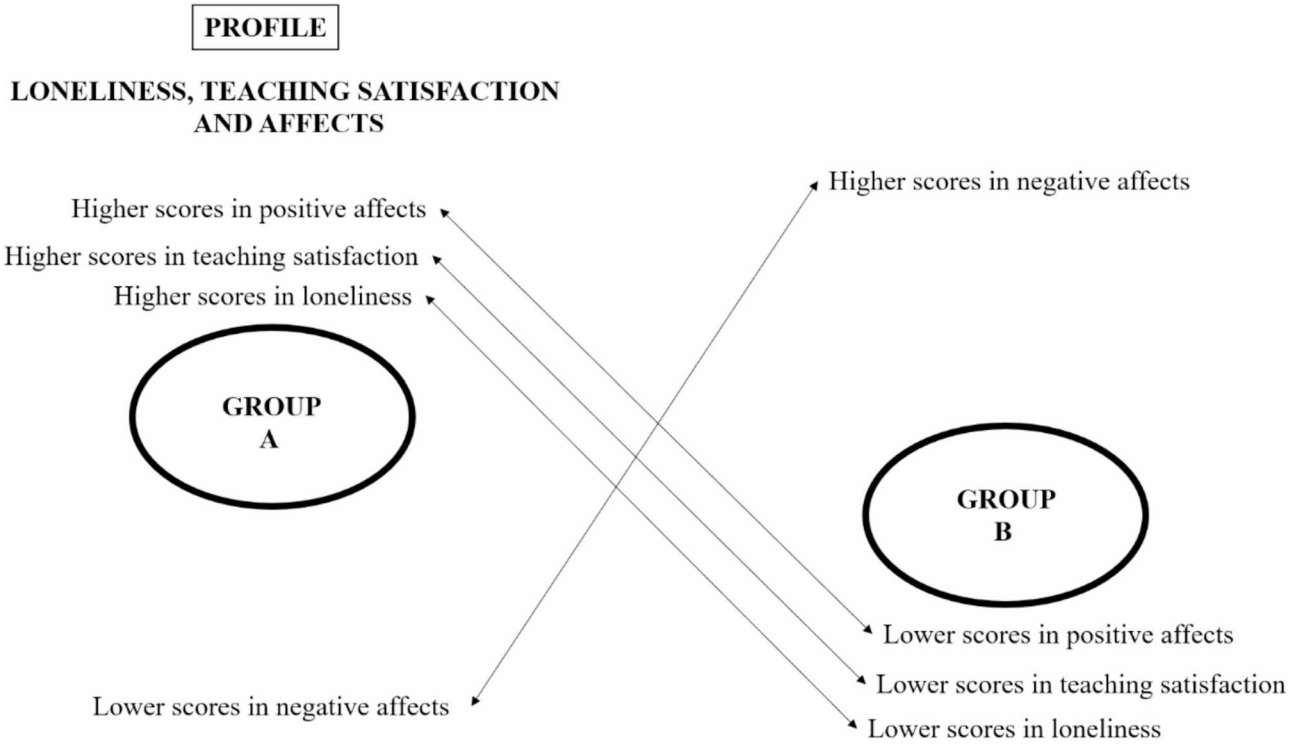

Fig. 2 Clusters differences on loneliness, teaching satisfaction and affects

autonomous motivation for learning in students [64]. On the other hand, it has also been showed that amotivation may cause a non-adaptative pattern of psychological functioning, including emotional exhaustion and low levels of job satisfaction [46] and result in negative psychological outcomes such as burnout and depression [8]. Amotivation among teachers usually emerges from a low perceived satisfaction of psychological needs (autonomy, competence, and relatedness) [46].

According to the second goal of the present work, our results revealed significant differences in teaching satisfaction, loneliness and affects depending on teaching profiles. Teachers from the average intrinsic motivation profile (a) reported significantly higher scores in teaching satisfaction, positive affects and lower levels in negative affects, these results agree with prior research [41–43]. However, in clear contradiction with previous studies [42–45, 54, 65], our findings revealed that the profile (a) average intrinsic profile, revealed higher loneliness levels. This finding could be partly explained by the isolation suffered by teachers during the COVID-19 lockdown, as well as by the workload generated by this unusual situation. In fact, it has been found that the fast shift from traditional to online educational methods and the changes in relationships had implications for teachers' mental health during the COVID-19 lockdown [66] – [67]. Health emergencies such as epidemics are known to produce higher rates of psychological distress [67]. The profile (a), as mentioned, also showed adaptive scores in teaching satisfaction, and the presence of positive affects. Subsequently, this profile would be the most suitable in terms of motivation and outcomes in teaching. The other profiles grounded in the sample revealed worst outcomes on all those previously mentioned variables. This finding would involve that the high amotivation profile (b) could be at risk of developing maladaptive outcomes in teaching, such as: dropout, burnout, stress, and emotional disorders [8, 18, 21, 68].

Furthermore, the covariation analyses reported significant differences between genders in which women pertained more frequently to the (a) Average Intrinsic Motivation Profile (52.38%). Differences in intrinsic motivation for teaching between sexes could be better explained by gender identity than by sex. A feminine identity would be more closely associated with different aspects of teaching activity (for instance, high verbal skills and a personal, aesthetic and moral global view) than a masculine identity [69, 70]. Besides, results reported significant differences in age, in which younger people pertained more frequently to the (a) Average Intrinsic Motivation Profile. It is worth noting that early motivation for teaching cannot predict the maintenance of the motivation for this career in the future [71].

As practical implications, our findings consistently support the theoretical claim that autonomy, competence, and relatedness are universal prerequisites for intrinsic

motivation and well-being among educators, particularly in the case of relatedness for males and older teachers. The practical implications derived from the current study focus on the need to develop personalized interventions aimed at preventing teachers from reaching a high amotivation profile and developing maladaptive teaching outcomes, such as negative affective states and teacher dissatisfaction. Thus, the (b) high amotivation profile could be at risk to engender maladaptive outcomes. On the other hand, the average intrinsic motivation profile (a) shows the most desirable results in our work, which can help psychologists to design interventions based on the common characteristics and circumstances of teachers with this profile to improve the situation of amotivated teachers. However, in our study, the average intrinsic motivation profile also showed a higher score in loneliness, which should be taken into account in future necessary studies.

As future proposal lines, using a person-centred approach to measure the pattern of the motivational profiles in teachers may be a promising design that could help to detect adaptive and maladaptive profiles of teachers and their possible outcomes related to teaching. Moreover, more studies might be grounded after the COVID-19 pandemic to analyse if profiles are still following the combination revealed in this study and the previous evidence [16]. Besides, it would be interesting to measure an ample number of teachers working in the diverse fields that will appear in the future because the number of studies is getting bigger as time passes, as well as using complementary research methods such as narrative interviews to examine their past teaching experiences and assess how these have influenced their levels of professional motivation [72]. Furthermore, evaluating more outcomes related to the teachers' well-being will be necessary to prevent those dysfunctional profiles from engendering maladaptive outcomes. Subsequently, more health variables related to teaching should be studied in the future, including the relationship between affective learning outcomes and self-regulation and different motivation profiles [17].

As limitation, the lockdown during the study period may hinder the generalization of the results to other studies before or after the COVID-19 pandemic. Moreover, the number of participants that could be included in the study was limited by participant access. This fact forced us to use the sample that was available, even though we recognise the significance of a predetermined sample size. Besides, the usage of self-report questionnaires may lead to some memory biases that should be considered. However, other more reliable measures were not taken due to the difficulty of taking the sample in lockdown and the possibility of reducing the number of participants. Another limitation is that the sample is a combination of teachers from different levels of education. This sample composition was made to generalise the results in other teachers' samples carefully. Furthermore, the need for more previous studies grounded on a person-centred approach methodology has hindered conceptualizing this study's theoretical framework. Nevertheless, the work will be a threshold point for future studies grounded on a person-centred approach.

In conclusion, two different profiles emerged from the sample: a high amotivation profile and an average intrinsic motivation profile. This combination explains the multivariate experience of teacher motivation and represents the way in which the different motivational factors are grouped. Taking into account the possible psychological disadvantages associated with being part of the high amotivation profile, interventions should be proposed to improve the lives of amotivated teachers. The characteristics exhibited by teachers with a profile of average intrinsic motivation can serve as a starting point.

Abbreviations

COVID-19	Coronavirus disease 2019
SDT	Self-Determination Theory
SD	Standard Deviation
F	F-statistic. Used in MANOVA to test group differences
η^2	Eta squared. A measure of effect size in ANOVA/MANOVA analyses
MANOVA	Multivariate Analysis of Variance. A statistical test used to compare group means on multiple dependent variables
UCLA	University of California, Los Angeles. Refers to the UCLA Loneliness Scale, a tool to measure subjective feelings of loneliness
WTMST	Work Tasks Motivation Scale for Teachers. A tool for assessing different types of motivation in teachers
ESD	Evaluación de Satisfacción Docente (Teaching Satisfaction Evaluation), a context-specific scale
EBA	Escala de Balance Afectivo (Affective Balance Scale). A tool to assess the frequency of positive and negative emotions
α	(Alpha) Cronbach's Alpha. A measure of internal consistency (reliability) of a scale
Ω	(Omega) McDonald's Omega. A more robust alternative to alpha for estimating internal consistency
SPSS	Statistical Package for the Social Sciences. A software program used for data analysis
M	Mean. The average value of a dataset
n	Sample size. Number of participants in a study or group
p	p-value. Indicates the statistical significance of results
χ^2	Chi-square test. A statistical test to examine relationships between categorical variables

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Author contributions
S.F. wrote the introduction and discussion; H.G-G. wrote the method section, conducted the statistical analysis and revised the whole manuscript; V.R. wrote the introduction, conducted the sample taking and participated in the protocol design.

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Data availability
The data will be available on reasonable request to the corresponding author.

Declarations

Ethics approval and consent to participate

The study was conducted in compliance with the Declaration of Helsinki and approved by the ethics board of the institution (Universidad Internacional de La Rioja: PI074/2022). Besides, informed consent was obtained from participants, detailing the conditions of participation and ensuring both their anonymity and voluntary involvement.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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