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Communicative teaching style as predictor of students' passion and dedication

Zuleica Ruiz-Alfonso[a,*], Lidia E. Santana-Vega[a], and Robert J. Vallerand[b]

[a] *University of La Laguna*
[b] *Université du Québec à Montréal, Laboratoire de Recherche sur le Comportement Social*

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ABSTRACT

The aim of this study was to analyse the relations between three different communicative teaching styles (gain-framing, loss-framing and amotivational style) and students' passion and dedication to study after school hours. We recruited 407 students and data was evaluated through path analyses. Results showed that teachers' communicative style that encouraged students to engage in an activity, highlighting the benefits of this engagement (gain-framing style), positively predicted students' passion; teachers' communicative style that emphasised the importance of avoiding failure and the cost of not being engaged in the activity (loss-framing style) negatively predicted students' passion; teachers' communicative style that underlined that there were no connections between students' behaviour and the results they obtained in class (amotivational framing style) was not related to students' passion. In turn, students' passion strongly predicted their dedication to study. Additionally, passion mediated the relation between teachers' communicative style and students' dedication. Findings evidence, for the first time in the literature, the effect of different teachers' communicative styles on students' passion and dedication. Results are discussed in terms of their implications for the academic context and educational practice.

El estilo comunicativo del profesorado como predictor de la pasión y dedicación del alumnado

Palabras clave:
Estilo comunicativo
Calidad didáctica
Análisis de senderos
Pasión
Dedicación

RESUMEN

El objetivo de este estudio es analizar en qué medida los diferentes tipos de estilo comunicativo del profesorado son un predictor importante de la pasión del alumnado y del tiempo que dedica a estudiar. Se utiliza una muestra de 407 estudiantes y los datos se analizan a través del análisis de senderos (*path analysis*). Los resultados muestran que el estilo comunicativo del docente que refuerza los beneficios de implicarse en la actividad (*gain framing*) predice positiva y significativamente la pasión del alumnado; el estilo comunicativo que refuerza el coste o los aspectos negativos de no implicarse en la actividad (*loss framing*) está negativa y significativamente relacionado con la pasión; el estilo comunicativo que enfatiza que no hay contingencias entre el comportamiento del alumnado y los resultados que obtiene (*amotivation framing*), no se relaciona de manera significativa con la pasión. A su vez, la pasión se relaciona de manera positiva y significativa con el tiempo dedicado a estudiar y media la relación entre el estilo comunicativo del docente y la dedicación. Estos resultados evidencian, por primera vez, el efecto de los distintos estilos comunicativos del docente en la pasión y la dedicación del alumnado. Los resultados se discuten en términos de su implicación en el contexto académico y la práctica educativa.

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* Corresponding author. Department of Teaching and Educational Research, University of La Laguna, Av. Trinidad s/n., Campus Central, 38204, La Laguna, Tenerife, Spain.
E-mail address: zruizalf@ull.edu.es (Z. Ruiz-Alfonso).

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Introduction

Teachers' behaviours in the classroom meaningfully affect students' learning and performance (Lazarides et al., 2021; Opdenakker, 2020). Through these behaviours, and the interactions they have with their students, teachers can lead students to reach their full academic functioning (Hornstra et al., 2021). As fostering students' academic potential has been a priority for educational policies, teachers and researchers, there is a growing body of literature on identifying the specific teachers' behaviours that improve students learning (Stroet et al., 2015).

The impact of teachers' communicative style on students' academic functioning is an emerging topic that has received some recent attention (Ntoumanis et al., 2018), especially in the subject of music and in relation to achievement-related variables such as passion for an activity and time devoted to study. Despite its novelty, some studies have shown promising results that reveal the important role of the type of messages that teachers use in the classroom. Specifically, previous studies have shown that teachers' messages affect the students' engagement (Nicholson & Putwain, 2020), self-efficacy (Putwain et al., 2016), motivation to learn (Santana-Monagas, Putwain et al., 2022), anxiety (Putwain & Best, 2011) and academic achievement (Santana-Monagas, Putwain et al., 2022), among other aspects. Thus, efforts to explore how teachers' communicative style affects students' academic functioning seem highly warranted. In addition, focusing on students' music learning could be especially relevant if we consider that this subject contributes to students' motivation (Oliveira et al., 2021), to cognitive processes such as memory or attention (Rodriguez-Gómez & Talero-Gutiérrez, 2022), and to satisfactory achievement in other subjects such as maths, history or foreign languages (Guhn et al., 2019).

In light of the above, in this study we aimed to explore the relationship between teachers' communicative style and their students' achievement-related outcomes, such as enthusiasm and dedication to study. To the best of our knowledge no previous study has specifically focused on the effect of teachers' communicative style on students' passion and dedication to study. To this end, in this study we explored how the different types of messages that teachers use in the classroom are related to students' passion, and how passion, in turn, affects the time that students spend studying after school hours.

Teachers' communicative style

The message teachers provide students in the classroom in terms of their students' educational outcomes can greatly affect their cognition, emotions and behaviours (Nicholson & Putwain, 2020). The most extended framework to study teachers' communicative style stems from the theory of message framing proposed by Tversky and Kahneman (1986), which has mainly been developed in the educational context by Putwain and colleagues (e.g.: Nicholson & Putwain, 2020; Putwain et al., 2016; Putwain et al., 2017; Symes & Putwain, 2016). This theoretical framework has been used to analyse the consequences of teachers' different types of messages —gain- and loss-framed— intended to promote their students' engagement in an upcoming activity. In this approach, it is considered that teachers use gain-framed messages when they encourage students to engage in a given task by highlighting the benefits of this engagement (e.g.: "If you regularly do your homework, you will practise and better understand the content of the subject"). On the contrary, when teachers emphasise the cost of not being engaged in the activity and they foster students' engagement by focusing on the importance of avoiding failure (e.g.: "If you do not do your homework, you will be punished or fail the exam"), they are using a loss-framed approach.

Previous research using the message framing approach in the educational context has accurately explored the impact of teachers' messages on students' learning outcomes such as engagement, academic achievement or self-efficacy (e.g.: Nicholson & Putwain, 2020; Symes & Putwain, 2016). However, these authors have mainly focused on the negative consequences of using loss-framed messages during class, and much less on exploring the positive results or benefits of using gain-framed messages. Hence, despite the prominence of studies in other areas exploring the different consequences of both types of messages (e.g.: Robbins & Niederdeppe, 2019; Zahid & Reicks, 2018), the research conducted concerning the effect of teachers' different types of messages on students optimal functioning is still limited (Santana-Monagas, Núñez et al., 2022).

In line with the above, studies in the educational context have mainly shown that loss-framed messages are related to negative outcomes such as students' higher anxiety (Putwain & Best, 2011) and lower academic performance (Putwain & Best, 2011), lower self-efficacy (Symes & Putwain, 2016) and lower intrinsic motivation (Putwain & Remedios, 2014). These studies have mainly been focused on exploring the consequences of teachers' loss-framing messages in secondary school students during maths class, but they have not analysed the impact of gain-framed messages.

In addition to research conducted under the Tversky and Kahneman (1986) theory of message framing, other authors guided by Self Determination Theory (SDT; Ryan & Deci, 2017) have also started to explore how teachers' communicative style affect students' learning. Overall, authors from this approach (e.g.: León et al., 2017; Moreno-Murcia et al., 2021; Ruiz-Alfonso et al., 2021) have mainly shown that teachers who use a non-controlling language foster students' learning outcomes such as autonomy, engagement and performance. The use of a non-controlling language means that teachers avoid the use of directive language and use an informational and soft tone when talking to students (León et al., 2017).

Moreover, Santana-Monagas, Putwain et al. (2022) have also recently advised the relevance of teachers' amotivation-framed messages. In an advance of integrating message framing theory and SDT, these authors suggested that the messages teachers use in the classroom can also be characterised by supporting a particular type of motivation. Thus, teachers can sometimes communicate their students that they will fail whatever they do, and that it does not matter if they engage in the activity or not. In this sense, in addition to promoting students' engagement by highlighting the benefits of the engagement or the cost of the non-engagement, teachers could also use messages that lead students to feel that there are no connections between their behaviour and the results they obtain (e.g.: 'My teacher tells me that I will still fail even if I try hard'). These messages are referred to as amotivation-framed messages.

As noted, there is still very little research on teachers' communicative style. Specifically, to our knowledge no previous research has analysed the consequences of teachers' gain-, loss- and amotivation-framed messages on students' outcomes such as passion and dedication. Exploring a variable amenable to being modified such as teachers' communicative style is especially important for researchers and educators, as it helps to design evidence-based interventions to improve students' learning outcomes. Accordingly, efforts to better identify how teachers' different types of messages in the classroom affect their students' academic functioning are still warranted.

Passion for an academic activity

Passion is defined as a strong inclination toward a self-defining activity that someone loves and in which they invest a lot of time and energy (Vallerand et al., 2003). Over the last decade there has been a booming body of literature in the educational context,

which has evidenced the influence of passion in students' outcomes such as academic performance (Bélanger & Ratelle, 2021), intellectual curiosity (Ruiz-Alfonso & León, 2018), self-regulation (Sverdlik et al., 2021), wellbeing (Bonneville-Roussy et al., 2013; Sverdlik et al., 2021), procrastination (Peixoto et al., 2021), creativity (Grohma et al., 2017) or dedication (Moeller et al., 2017).

So far, most studies conducted on passion have been carried out under the Dualistic Model of Passion (Vallerand, 2015; Vallerand et al., 2003). This model evidences the existence of two types of passion depending on the internalisation process of the activity into the person's identity. Specifically, harmonious passion comes from an autonomous internalisation of the activity and leads people to freely engage in it. In consequence, harmoniously passionate people feel that the activity they are passionate about is in harmony with their values and other aspects of their life (Bouizegarene et al., 2017; Vallerand et al., 2003). In contrast, obsessive passion comes from a controlled internalisation of the activity into the person's identity and leads people to engage in the task due to internal or external pressures (e.g.: social acceptance). Thus, obsessively passionate people feel conflictive about the activity and the other aspects of their life, and they usually feel an uncontrollable urge to engage in the activity (Vallerand, 2015; Vallerand et al., 2003).

Although a growing body of literature has explored the impact of passion in a wide range of contexts, previous studies have typically assessed the role of harmonious and/or obsessive passion without evaluating the passion criterion (Vallerand, 2015). Passion criteria assess the presence or absence of passion, and it is crucial to determine whether participants are passionate or not towards the activity (e.g.: if the person likes or loves the activity, the time and energy spent on the activity, the attributed value and importance, if the person feels identified with the activity, and if they consider the activity a passion). Most studies conducted in education have either focused on students who display high levels of passion or have overlooked the assessment of passion criteria and have assumed that participants were passionate toward the activity under study. In doing so, the impact of various factors on the presence or absence of passion has been neglected in general (Vallerand, 2015), and especially as pertains to teachers' communicative style (e.g.: Ruiz-Alfonso & León, 2017, 2018). Considering the benefits of passion in the educational context, efforts to better understand how teachers can enhance their students' passion are still highly warranted.

The present study

To date, no study has analysed the association between the communicative style of teachers and students' passion in general and dedication toward one's studies. The overall purpose of this study was to analyse the relationships between these constructs. Specifically, we aimed to answer the following research questions: (1) Do teachers' different types of messages predict the presence or absence of students' passion?; (2) Does passion predict dedication?; and (3) Does passion mediate the relation between teachers' communicative style and dedication? Thus, the first aim of the study was to identify whether teachers' different types of messages —gain-, loss-, and amotivation-framed messages— predict the presence or absence of students' passion. The second aim was to analyse whether students' passion predicts the time they devote to study. The third aim was to identify if passion mediates the relationship between teachers' communicative style and dedication.

Regarding the first aim, we hypothesised that passion will be positively predicted by gain-framed messages, but negatively predicted by loss-framed and amotivation-framed messages (Hypothesis 1). This is consistent with previous research suggesting that teachers' behaviours can promote students' passion (Ruiz-Alfonso & León, 2017, 2018), and studies suggesting that loss-framed messages are related to less adaptive outcomes (e.g.: Nicholson & Putwain, 2020; Putwain et al., 2016). Regarding the second aim, we hypothesised that students' passion will predict dedication (Hypothesis 2). This hypothesis is coherent with other studies evidencing the benefits of passion on students' learning outcomes (e.g.: Bélanger & Ratelle, 2021; Grohman et al., 2017; Ruiz-Alfonso & León, 2018; Sverdlik et al., 2021) and, specifically, on students' time devoted to study (e.g.: Moeller et al., 2017). Finally, regarding the third aim and according to previous studies evidencing the mediating role of passion between teachers' behaviours and students' learning outcomes (Ruiz-Alfonso & León, 2017, 2018), we hypothesised that passion would mediate the relation between teachers' communicative style and dedication (Hypothesis 3).

This study aims to contribute to the existing evidence on the importance of passion in the educational context, to extend the knowledge of how teachers' specific behaviours promote students' passion and achievement-related variables, and to explore, for the first time in the literature, the effect of different teachers' communicative style on students' passion and dedication.

Method

Participants

We recruited 407 students (232 females, 164 males, 11 not specified) enrolled in official music studies in Gran Canaria, Spain. Students were from second to sixth grades of basic and professional studies. Students belong to 24 disciplines and 75 classes, and their age ranged from 11 to 57 years ($M = 15.06$, $SD = 7.09$). All participants and families were informed of the data confidentially and participation was strictly voluntary.

Measures

Participants completed a questionnaire with demographic questions and measures of *passion*, *time devoted to study* and perception of their *teachers' communicative style*.

We used five items (e.g. "Playing my instrument is part of who I am") from the *Passion Criteria subscale* of the Spanish version (Chamarro et al., 2015) of the *Passion Scale* (Vallerand et al., 2003). The scale were rated on a 7-point Likert-type scale ranging from 1 = I do not agree at all to 7 = I strongly agree. Regarding the CFA, the model was just identified, so no fit indexes could be computed. Over 20 studies support the validity and reliability of the *passion* scale (see Vallerand & Rahimi, in press). In the present study, McDonald's Omega was .92, AVE was .72 and CR was .92. Cronbach's Alpha was .87.

We used 16 items from a scale developed by León et al. (2019) to assess *teaching communicative style*. We used six items (e.g. "My teacher tells me that if I study and work hard I will be proud of myself") to assess *gain-framed style*, six items (e.g. "My teacher tells me that if I don't make an effort, I will be punished") to assess *loss-framed style* and four items (e.g." My teacher tells me that even if I try hard, I will still fail") to assess *amotivational style*. The scale were rated on a 7-point Likert-type scale ranging from 1 = I do not agree at all to 7 = I strongly agree. Regarding the CFA, the χ^2 value and fit indexes were χ^2 (406, 99) = 451.765 ($p < .001$), RMSEA = .09, CFI = .95 and TLI = .94. The McDonald's Omega were .90 for *gain-framing*, .91 for *loss-framing*, and .97 for *amotivational style*. McDonalds' Omega for the whole scale was .99. AVE and CR were .60 and .90 for *gain-framing*, .67 and .92 for *loss-framing*, and .91 and .97 for *amotivational style*. Cronbach's alpha were .88 for gain-framing, .83 for *loss-framing*, and .93 for *amotivational style*.

Following Moeller and Grassinger (2013), we assessed *dedication* by an open question (How much time per week do you spend studying this subject?) in which participants reported estimates of time per week spent on study.

Procedure

We were requested by the high school principal to carry out a study to analyse the influence of the context and teaching practices on students' optimal functioning. We designed a project consisting of different studies that we explained to all the teachers and families, requesting their cooperation and explaining the procedure itself. The research was conducted in accordance with the ethical guidelines of the Declaration of Helsinki and it was approved by the University of La Laguna. The study is part of this research. The high school principal, teachers and parents authorised the students' participation in the study. The main researcher personally administered questionnaires, providing any support and help needed to complete the items. Participants were asked to complete the questionnaire as honestly as possible, and teachers were invited to wait outside the room during questionnaire administration. We informed them about the confidentiality of the data and the voluntary nature of their participation to diminish social desirability. The surveys were administered during the last semester, and they took about 20 minutes for the students to complete.

Data analyses

Statistical analyses were carried out using SPSS 24 and Mplus 8.3. First, we performed a Confirmatory Factor Analysis (CFA) in Mplus to examine the scales' structure and we used McDonalds's Omega (1999), Average Variance Extracted (AVE), Composite Reliability (CR), and Cronbach's alpha to examine reliability. Second, we calculated the means, standard deviations and correlations among major variables using Pearson's correlation in SPSS 24. We used this software because it facilitates the interpretation of significant correlations between the major variables. Third, to test the hypothesised effects, we used Mplus to run a path analysis in which students' perception of *teachers' communicative style* predicted *passion* and this, in turn, *dedication*. To accurately estimate the model, we considered that students were nested within classes (complex data). We used the Full Information Maximum Likelihood Method (Hayes & Enders, 2022) to estimate the missing values. This method uses all of the observed data to identify the optimal parameter estimates and fill in the missing values during the model estimation. In addition to chi-square (χ^2) and its associated probability (p), model fit was assessed using the comparative fit index (CFI), the Tucker-Lewis index (TLI) and the root mean square error approximation (RMSEA). The model fits well when CFI and TLI > .90, and RMSEA $\leq$ .08. Bearing in mind that variables were ordered categorically, for the estimation method we used the Weighted Least Squares Means and Variance Adjusted (WLSMV). Finally, to test the mediational effect of passion between teachers' communicative style and dedication, we followed the recommendations of Hayes (2018) and computed the indirect effects and standards errors using the delta method (Sobel, 1982).

Results

Preliminary analyses

Descriptive statistics and correlations between major variables are shown in Table 1. Means varied between 1.17 (*amotivation*) to 7.13 (*dedication*), and standard deviations varied between .546 (*amotivation*) and 9.02 (*dedication*). Regarding correlations, they ranged from -.223 (*gain framing* with *amotivation*) and .254 (*amotivation* with *loss framing*). Correlations between *loss-framing* and *gain-framing*, *passion* and *gain-framing*, *amotivation* and *loss-framing*, and *passion* and *dedication* were positive and significant. Correlations between *amotivation* and *gain-framing*, and *passion* and *amotivation* were negative and significant. The other correlations were not significant.

Test of the hypothesised structural model

We ran a path model to test if *teachers' communicative style* predicted *passion* which, in turn, would predict *dedication*. Based on the literature reviewed, we hypothesised a positive and significant relationship between *gain-framing* and *passion*, but a negative and significant association between *loss-framing* and *passion* and, to a lesser extent, between *amotivation-framed style* and *passion*. We also expected *passion* to positively predict *dedication.* The results indicated excellent fit indices for the model: χ^2 (406, 3) = 3.395 (p = .334), RMSEA = .01, CFI = .98, TLI = .97. As seen in Fig. 1, results indicated that the majority of the relationships between the variables were consistent with the hypotheses. First, *passion* was positively predicted by *gain-framing* (β = .333, *SE* = .053, p < .01), and negatively predicted by *loss-framing* (β = -.106, *SE* = .048, p < .05). A non significant relationship between *amotivation* and *passion* was obtained (β = .027, *SE* = .049, p = .572). Finally, as predicted, *passion* was positively and significantly related to *dedication* (β = .213, *SE* = .060, p < .01). These results indicate that only teachers' *gain-framing communicative style* positively led to students' *passion*, while *loss-framing* negatively led to students' *passion* and *amotivational style* did not significantly affect it. *Passion* was also found to contribute to *dedication*.

Mediation analysis

We looked at the mediational pathways of *passion* in the relationship between *teachers' communicative style* and *dedication* by computing unstandardised indirect effects and their standard errors. The direct effects from *teachers' communicative style* to *dedication* were not significantly different from 0, either for *gain-framing* (β = .000, *SE* = .044, p = .992), *loss-framing* (β = .072, *SE* = .037, p = .052) or *amotivational style* (β = -.022, *SE* = .041, p = .598). However, the unstandardised indirect effects in the fully mediated model were significantly different from zero for *gain-framing* (β = 1.504, *SE* = .341, p = .000) and *loss-framing* (β = -.415, *SE* = .194, p = .033). Results for unstandardised indirect effects between *amotivational style* and *dedication* were β = .090, *SE* = .162, p = .580. These data provide evidence of the mediational effect of *passion* in the relationship between *gain-* and *loss-framing* and *dedication*.

Discussion

Building on prior research that has evidenced the effect of teachers' behaviours during class time on students' different academic outcomes, in this study we attempted to analyse the role of teaching communicative styles in students' adaptive outcomes, such as passion and time devoted to study. This research extends previous literature on teaching practices that foster students' positive consequences, and also spreads the knowledge on the benefits of passion to the educational context. Moreover, the present results provide novel information on the relationships among the variables tested, as previous research has only focused on the negative consequences of using loss-framed messages and not on the benefits of gain-framed messages. In addition, the effect of communicative teaching style on passion and that of passion on dedication had never been ascertained before.

The first aim of this study was to test whether teachers' different types of messages —gain-, loss- and amotivation-framed

Table 1
Means, standard deviations, and correlations among major variables.

Variable	*M*	*SD*	1	2	3	4	5
1. Gain-framing	3.42	.930					
2. Loss-framing	1.68	.720	.241**				
3. Amotivation	1.17	.526	-.223**	.254**			
4. Passion	4.2	.727	.140**	-.073	-.117*		
5. Dedication	7.13	9.02	.026	.066	.011	.238**	–

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

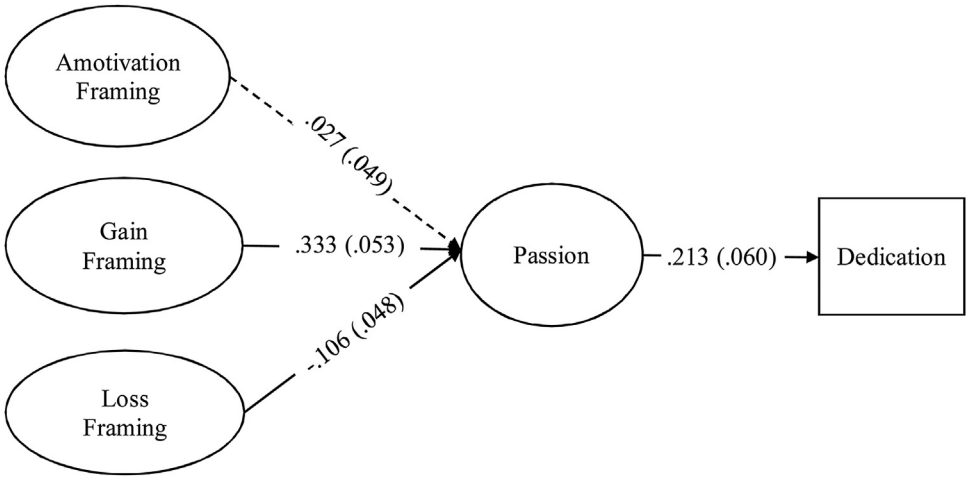

Fig. 1. Results of the path model. The standardised parameters are above the arrows; standard errors are between parentheses. Relations in dashed lines were found to be non-statistically significant.

messages— could predict the presence or absence of passion. The second aim was to analyse whether students' passion could predict dedication to one's study. Finally, the third aim of the study was to test whether passion mediates the relationship between teachers' communicative style and dedication. Our results partially supported the hypotheses tested. First, passion was positively predicted by gain-framed messages and negatively predicted by loss-framed messages (Hypothesis 1). However, the relationship between amotivation-framed messages and passion was not significant. Thus, although we hypothesised that passion would be negatively predicted by amotivational style, the path between both variables was practically non significant. This may be due to teachers' amotivation-framed messages underline that there are no contingencies between students' behaviours and their outcomes (e.g.: 'My teacher tells me that I will still fail even if I try hard'). These results show that only teachers' gain-framing communicative style positively predicts students' passion for music, while loss-framing negatively leads to students' passion. Amotivational style does not affect it.

These findings are consistent with past research on the relationship between teachers' behaviours during the classroom and students' passion (Ruiz-Alfonso & León, 2017, 2018). They are also consistent with previous studies that have shown that loss-framed messages are related to less adaptive outcomes, both in the educational context (e.g.: Nicholson & Putwain, 2020; Putwain et al., 2016) and outside of it (e.g.: Robbins & Niederdeppe, 2019; Zahid & Reicks, 2018). Specifically, previous studies in educational settings have shown that loss-framed messages are related to higher anxiety in students (Putwain & Best, 2011), lower intrinsic motivation (Putwain & Remedios, 2014), lower self-efficacy (Symes & Putwain, 2016) and lower academic achievement (Putwain & Best, 2011). The present study adds evidence on the negative effects of loss-framed messages, and also provides novel evidence on the benefits of teachers' use of gain-framed messages.

In this study, we also hypothesised that students' passion would predict dedication as measured with the time they devote to studying music (Hypothesis 2). In line with previous research, our results provide evidence on the positive relationship between both variables, showing that the greater the passion, the greater the dedication. Although prior research has specifically focused on the effect of the different types of passion —harmonious and obsessive— and less on assessing the effect of their presence or absence, our results are in line with other studies that have shown the benefits of both types of passion (harmonious and obsessive) in enhancing students' academic functioning, such as academic performance (e.g.: Bélanger & Ratelle, 2021), intellectual curiosity (Ruiz-Alfonso & León, 2018), and creativity (Grohman et al., 2017). Regarding dedication, our results are also in line with research in the educational context (e.g.: Moeller et al., 2017) and in other domains (e.g.: Verner-Filion et al., 2017) that has shown that passion in general positively predicts the time people devote to practising the activity they love.

Finally, to complete our model, we looked at the mediational pathways of passion in the relation between teachers' communicative style and students' dedication to their studies. In doing so, we observed a significant indirect effect in the relationships between teachers' gain- and loss-framing and dedication, so we can conclude that gain and loss-framed teachers' messages affect students' time devoted to study through passion. In this line, for example, if teachers promote students' engagement in an upcoming task by highlighting the benefits of the task instead of the cost of non-engagement (e.g.: 'If you do your homework, you will better understand the subject'), students may feel greater passion and they, in turn, devote more time to the activity. On the contrary, if teachers tend to promote students' engagement emphasising the cost of not being engaged (e.g.: 'If you do not study, you will fail the exam'), they could undermine students' passion and in turn, the time they spend studying.

In sum, and as expected, the present findings provide evidence for the first time on the relationship between teachers' communicative styles, passion, and dedication for one's studies. Our results provide novel information on the effect of three teachers' types of messages on students' passion and how, in turn, this leads to dedication. As such, this study extends the knowledge on the consequences of passion in the educational context, the role of specific teaching practices that promote students' passion and adaptive outcomes.

Limitations and future research

The present research had some limitations. First, we conducted a cross-sectional study, which prevented us from establishing causal relationships among variables. Therefore, future studies using longitudinal or even experimental designs are encouraged to determine if passion and dedication can be enhanced by repeated exposure to teachers' gain-framed messages. Moreover, it is also important for future research to test whether passion, as the mediating variable, can be understood as mechanism to establish a clear relationship between teachers' communicative style and dedication. Second, we used self-reported measures to assess teachers' perceptions of teachers' communicative style. Thus, objective measures should be used in future studies such as teachers' reports of behaviours and styles, observational methods or external ratings. Similarly, future research should try to use a more accurate measure of time, such as asking students to time themselves throughout a specific application or software each time they start and finish studying. Third, in our study we only assessed general passion. Future research should assess the potential effect of the different types of teachers' messages on students' harmonious and obsessive passion in addition to general passion. Such studies could also include different outcomes, such as wellbeing, academic engagement, or competence, for example. Finally, it could also be interesting for future research to use other samples (e.g.: university students) and to test what other features of teachers' behaviours in the classroom can help students develop their passion. Likewise, future studies could design, apply and test the effectiveness of programmes to show teachers how they can foster students' adaptive outcomes through their communicative style.

In sum, the present study highlights the importance of teachers' communicative style in the classroom to promote students' general passion and time devoted to study. Future research is necessary to more fully understand the effect of the three teaching communicative styles on students' general passion as well as on their harmonious and obsessive passion toward other school subjects. Furthermore, the use of longitudinal and experimental designs and interventions designed to improve passion through gain-framed teaching style should be the focus of future research.

Implications for practice

This study provides useful information for educational practice. Although our findings should be supported by future research to establish causal relations, they could be given some practical tools for teachers and researchers. To start, these findings could encourage teachers to be aware of the relevance of the type of messages they use during class time. Thus, given the effects of teachers' different types of messages on students' outcomes, the school staff needs to rely on gain-framed messages to promote their students' engagement in an upcoming activity. For example, when teachers aim for their students to be engaged in a given task, they could use messages such as 'If you do your homework, you will better understand the subject and feel better during the class time' or 'If you study for the exam, you will feel proud of your work'. On the contrary, teachers should avoid loss-framed messages such as 'If you do not do your homework, you will be punished' and amotivation-framed messages such as 'No matter what you do, you will still fail'. On the other hand, these findings could encourage the educational community to be aware of the benefits of passion to promote students' outcomes. Finally, focusing on a variable amenable to intervention such as teachers' communicative style could help educational researchers to develop evidence-based interventions to advise teachers about the messages they could rely on.

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