

RESEARCH ARTICLE

Investigating the Link between Flow, Perceived Feedback and Performance in Art

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Abstract

The current study set out to investigate the effect of flow experienced during artistic activities on performance. Furthermore, the study looked into how the relationship between flow and performance was affected by a moderating variable, namely the perceived feedback given by art teachers. Based on a non-experimental cross-sectional model, the research included a sample of 108 students of various art degrees. The results suggested that flow predicts performance in art ($AR^2 = .10, p < .001$), while perceived feedback acts as a moderator on the link between flow and performance ($F(3, 104) = 11.17, p < .001$), having a buffering effect and not an enhancing effect as this study initially proposed ($AR^2 = .057, \beta = -.24, p < .01$). Moreover, a separate moderation analysis was performed for each subscale of the perceived feedback measuring instrument. Some possible explanations of the buffering effect are presented based on the scientific literature.

Keywords

flow, perceived feedback, performance, art, artistic activities

Understanding the psychological factors that contribute to high levels of performance in a variety of activities is among the top priorities of applied psychology. One of the key constructs of positive psychology is flow, also known as “optimal experience” (Csikszentmihalyi, 1990), terms used almost interchangeably. Throughout time, flow has often been correlated with high levels of performance in various domains, such as work (Demerouti, 2006; Quinn, 2005), music (De Manzano et al., 2010; Wrigley, & Emmerson, 2011), some studies, particularly in sports, indicating that flow is a significant predictor of performance (Bakker et al., 2011; Stavrou et al., 2014). In the current research, artistic activities were investigated as flow-generating activities, in their numerous forms (plastic

arts, music, acting, film imaging, directing, design, etc.) found within a university setting. According to previous research (Csikszentmihalyi, 1990; 1997; Csikszentmihalyi, & Csikszentmihalyi, 1992), flow is very commonly experienced in such activities as they have the potential to fulfill the more or less necessary preconditions for the emergence of this phenomenon, a fact that is presented in more detail in the following section.

The majority of previous research conducted in the field of flow experienced during artistic activities sought to investigate the psychophysiological elements of flow (De Manzano et al., 2010) or to identify the psychological antecedents and correlates of flow in order to better understand the factors

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that can facilitate or, on the contrary, prevent the occurrence of this phenomenon (Hefferon, & Ollis, 2006; Martin, & Cutler, 2002; Wrigley, & Emmerson, 2011). Starting from already existing data which support the applicability of flow-related theories in domains such as sports (Jackson, 1992; 1995), an extension of these theories have been made to other domains, such as music (Wrigley, & Emmerson, 2011) and acting (Martin, & Cutler, 2002), increasing the validity and universality of both theories and measurement tools used until that point only in the fields of sports and work.

In order to obtain a high performance, another variable that has been identified to play an important role is the feedback provided by supervisors, namely the college teachers. Although the scientific literature presents numerous evidence on the beneficial effect of feedback on performance in fields such as sports and work, regardless of the feedback's nature (positive or negative; e.g., Choi et al., 2018; Koka, & Hein, 2005; 2006), no other study has sought to look into more detail to find out how feedback provided by art teachers, as perceived by students, can influence the relationship between the experience of flow and the quality of performance achieved.

Moreover, this research aims to increase the number of psychological studies conducted in the field of art and hopes to help teachers in their classroom practice, and young artists in their pursuit of excellence. Focusing on such positive states as flow can provide significant psychological benefits that can improve learning outcomes and teaching styles (Wrigley, & Emmerson, 2011).

Flow - conceptualization

Attributed to a valuable and intriguing phenomenon, the concept of flow denotes a "complete absorption in the present moment" (Nakamura, & Csikszentmihalyi, 2005, p. 89). Similar to an altered state of consciousness, the flow state is manifested by focused attention on the action currently being performed, loss of self-awareness by identifying the self with said action, temporal distortion, etc., this experience leading to intrinsic rewards that are not altered by

differences in culture, social class, gender, age or activity involved (Nakamura, & Csikszentmihalyi, 2005).

The name of this phenomenon was given by psychologist Mihaly Csikszentmihalyi. He studied the creative process in the 1960s, noting that an artist persists unceasingly in the conception of a painting, ignoring physical needs until its completion, at which point he loses interest (Getzels, & Csikszentmihalyi, 1976). Research on this phenomenon originates in the study of human motivation to devote a significant amount of time to certain types of activities (arts, sports, etc.), as it provides pleasant experiences simply by participating in the process. Known as intrinsic motivation, it is the main element of interest and starting point in the research of flow (De Manzano et al., 2010; Nakamura, & Csikszentmihalyi, 2005). Those in the flow state have an experience called "autotelic experience" (from the Greek "auto" meaning "self", and "telos" meaning "goal"), meaning that they are experiencing an intrinsically motivating activity. This activity becomes an end in itself, the ultimate goal becoming only an excuse for the process itself (Bakker et al., 2011; Csikszentmihalyi, 1990). The ability to experience flow appears to be universal, but people differ in the frequency and quality of experiencing this state (Csikszentmihalyi, & Csikszentmihalyi, 1998; Nakamura, & Csikszentmihalyi, 2005; Privette, & Bundrick, 1991; Stein et al., 1995), which may indicate the existence of individual and situational factors that can contribute to the emergence of flow.

According to Nakamura și Csikszentmihalyi (2005), the theoretical model of flow emphasizes interactionism, that is, the dynamic system made up of a person and their environment, rather than focusing strictly on individual characteristics detached from their context, therefore suggesting a focus on phenomenology rather than on personality. The goal here is to understand the dynamics of momentary experiences and the conditions in which they are optimal. Csikszentmihalyi (1985) also theorizes the concept of emergent motivation, a term that seeks to highlight the fact that motivation emerges from the actual interaction within the specific activity, instead of being dictated in

advance by a pre-existing intentional structure found in the person or in the environment.

It is important to note that flow is not considered to be an all-or-nothing peak experience, but rather is seen as a continuous variable that can be used to characterize the quality of experiences in everyday activities (Csikszentmihalyi, & Csikszentmihalyi, 1992). Flow was conceived in terms of degrees existing on a continuum, from low or light flow, attributed rather to automatic, uncomplicated and unstructured activities, such as doodling, smoking, etc., to deep flow, associated with activities with a higher level of complexity, such as chess, composing, surgery, leading to the so-called "peak performance" (Csikszentmihalyi, 1975). Flow appears spontaneously, however, and cannot be initiated intentionally because attempts in this direction will make the possibility of entering flow even smaller (Csikszentmihalyi, 1990; Jackson, & Csikszentmihalyi, 1999). Also, according to the empirical data Csikszentmihalyi's studies (1990; 1997), people tend to experience flow when they engage in active behavior as opposed to performing passive activities (such as watching TV, for example). This is self-evident, since in order to experience the state of flow, an important condition, although not necessary (Nakamura, & Csikszentmihalyi, 2005), is that a person invests time and energy, this only happening in case of encountering challenges. According to Csikszentmihalyi (1990), entering a state of flow depends on establishing a balance between the challenges of a situation and the self-perceived abilities to manage those challenges. This balance is fragile, however, because if the challenges encountered begin to exceed personal abilities, this will lead to vigilance, followed by stress and anxiety; instead, if the skills start to surpass the challenges, the person will start to relax, which will then lead to boredom. Moreover, researchers generally agree that flow is more likely to occur when the person perceives this balance to exist (e.g., Bakker, 2005; 2008; Csikszentmihalyi, 1990; Fullagar, & Kelloway, 2009), resulting in an optimal experience. Therefore, "the effortless absorption experienced by the practiced artist at work on a difficult project always is

premised upon earlier mastery of a complex body of skills" (Nakamura, & Csikszentmihalyi, 2005, p. 91).

Throughout time, it has been argued that flow, being a multidimensional concept, includes several components or conditions necessary for its emergence, such as the balance between abilities and requirements mentioned previously, the loss of self-awareness (the person no longer perceives himself as a social actor, no longer appeals to the reflexive capacity), the fusion between awareness and the activity carried out in the present moment (the central point of awareness, of attention, is reduced to the activity itself, people are no longer aware of themselves as separate from the activities carried out), clear goals, focus, a strong sense of control over one's actions, distortion of temporal experience (usually in the sense of time passing faster), immediate and clear, unambiguous feedback, and autotelic experience (Csikszentmihalyi, 1990; Csikszentmihalyi, & Csikszentmihalyi, 1992; Jackson, & Csikszentmihalyi, 1999; Jackson, & Eklund, 2002; Nakamura, & Csikszentmihalyi, 2005). Thus, the previously mentioned characteristics are frequently encountered within artistic activities, artists being free to choose a task in their field of activity that suits their level of abilities, the feedback being instantaneous and continuous, the activity itself depending on the fusion between action and state of consciousness, requiring a somewhat high degree of attention and concentration, offering the possibility of total control over one's actions, etc., which makes art stand out among activities with increased flow-generating potential.

In this research, flow was conceptualized as consisting of three key components, a fact found mainly in research of flow experienced in the organizational field (e.g., Csikszentmihalyi, 1997; Csikszentmihalyi et al., 1993; Larson, & Richards, 1994, as cited in Bakker, 2008). These components are absorption, enjoyment and intrinsic motivation. Absorption refers to a state of concentration and total immersion in the activity carried out, while enjoyment refers to a positive judgment on the quality of life during that activity (e.g., work; Veenhoven,

1984). Intrinsic motivation, discussed previously, refers to carrying out an activity with the aim of experiencing the pleasure and satisfaction inherent in it (Deci, & Ryan, 1985). For flow to occur, it is essential that the person is fully engaged in an activity that is both enjoyable and meaningful to them (Csikszentmihalyi, 1999). The reason behind choosing to operationalize flow as a three-dimensional experience made up of absorption, enjoyment and intrinsic motivation, similar to research in the field of organizational psychology (Bakker, 2005; 2008), derives from the fact that this study focuses on artistic activities in a university setting, which can be likened to work activities at the office, while feedback, a variable that will be detailed further, is being provided by people of a higher rank who hold more knowledge in the field than the participants, namely art teachers in this study, who can be likened to supervisors at work. The experience of flow through these three components is also of major importance in the case of artistic involvement, with Csikszentmihalyi (1993) suggesting that games, sports and artistic performances are expressly designed to facilitate flow.

The link between flow and performance

One of the most studied and desirable consequences of flow, because of its positive value, is performance. Studies across several activities, including chess, writing, sports, and the visual arts, have found a positive correlation between measures of flow and objective measures of performance quality (Csikszentmihalyi, & Csikszentmihalyi, 1992). Thus, it has been suggested that flow may function as a reward signal to promote practice in that activity (Csikszentmihalyi, 1997).

Referring back to the theoretical model of flow, an improved performance is expected from the very fact that the experience of flow prompts a person to persist in that activity due to the intrinsic rewards it promises, assimilating higher and higher levels of skills (Engeser, & Rheinberg, 2008; Nakamura, & Csikszentmihalyi, 2005). Being defined as a state of high functioning (Engeser, &

Rheinberg, 2008), based on the fact that it requires a high level of concentration and, moreover, the investment of all available energy resources towards specific elements in the environment, flow determines participants from various activities to set themselves greater and greater challenges as they come to master the requirements of the previous challenges. To continue to experience flow, they need to identify and engage in increasingly complex activities, suggesting that flow sustains growth itself by fostering skill improvement and encouraging people to come back to the same activities simply because they allow them to have pleasant experiences while performing them. This continuous return to activities in which people experience flow is justified by empirical data that flow has been associated with engagement, achievement (Carli et al., 1988; Mayers, 1978; Nakamura, 1988; Rivkin et al., 2018), while the quality of experience has been associated with persistence in an activity (Nakamura, & Csikszentmihalyi, 2005). Moreover, it has been proposed that flow is similar to an eudaimonic experience of well-being, since the two constructs show a number of similarities, such as the existence of common elements in their conceptualization (a sense of control and mastery over the task, clear purpose, the belief that one has the skills to perform the task optimally, engagement, and a sense of enjoyment; Csikszentmihalyi, & Csikszentmihalyi, 1988), and that both enhance human growth and potential (Jackson, & Wrigley, 2004; Ryan, & Deci, 2001).

According to Quinn (2005), flow is the experience of acting skillfully, through both intellect and physical action, as the achievement of a goal is desired. Relevant skills and information are applied within action in such a way as to facilitate movement in the desired direction towards achieving the desired end state, which is precisely why Quinn (2005) argues that flow is considered to be a high performance experience.

To summarize, flow has continued to be correlated with a high level of performance in various fields of activity over time, including sports, work (Demerouti, 2006; Eisenberger et al., 2005; Quinn, 2005) and music (De Manzano et al., 2010; Wrigley, & Emmerson,

2011). In several of these, empirical evidence has been found that flow is a significant predictor performance in a given activity, one of the most relevant fields for this relationship being sports (e.g., Bakker et al., 2011; Jackson et al., 2001; Landhäuser, & Keller, 2012; Stavrou et al., 2014). Noting a lack of such studies in the artistic field, the current research seeks to investigate the effect of flow experienced within artistic activities on resulting performance, therefore proposing the following hypothesis:

H1: Flow predicts performance in artistic activities.

The moderating role of perceived feedback on the link of flow and performance

The relationship between flow and performance can be moderated by a variety of factors, among which a considerable role may be attributed to perceived feedback.

Feedback is a valuable component in many fields because of the various effects it can have on the people to whom it was directed. It is also considered the central element of performance management, as it is able to guide, motivate, strengthen or reduce to the point of stopping a certain behavior, depending on its nature, whether it is beneficial or not (London, 1997). Despite all the implications of feedback, this study will consider only that type of meaningful feedback, provided for the purpose of improving individual performance, as indicated by a number of previous studies that have shown feedback to significantly influence performance in certain fields (Choi et al., 2018; Earley, 1986; Gershgoren et al., 2011). Also, the measurement will be carried out according to how this feedback is perceived by the participants, namely the art students, based on their supervisors' behavior, in this case the art teachers. Perceived feedback can be defined as students' perception of teachers' assertions about their performance, assertions that do not actually clearly inform students about what they have done well or not, but are rather used to encourage, in the case of a feedback perceived

as positive, or to criticize, in the case of feedback perceived as negative (Koka, & Hein, 2005; 2006). A number of researchers have noted that self-reported thoughts are more accurate predictors of student achievement than estimations provided by observers (Peterson, & Swing, 1982; Peterson, Swing, Stark, & Waas, 1984, as cited in Wittrock, 1986).

Feedback as a variable has received attention in a large number of studies in diverse fields such as education (Behets, 1997), sports (Gershgoren et al., 2011) and work (Choi et al., 2018; Earley, 1986). There is evidence to support that teacher interactions with students and the feedback they provide can affect students' motivation, perceptions, and willingness to continue making efforts to improve their performance (Amorose, & Weirss, 1998; Goudas et al., 2000). Goudas and collaborators (2000) studied the effect of positive and negative feedback on undergraduate students, concluding that positive feedback improves perceptions of competence, as opposed to negative feedback. However, these studies were concerned with the effect of actual feedback from teachers and not feedback perceived by pupils or students. Studies that have considered students' perspectives on teacher-provided feedback have consistently indicated that students value direct teacher-provided feedback, valuing it far more than other forms of feedback such as peer feedback or self-assessment (e.g., Saito, 1994; Yang et al., 2006, as cited in Lee, 2008).

Koka and Hein (2003) developed the Perceived Teacher's Feedback Scale (or PTF), which was revised 3 years later (Koka, 2006), to investigate the relationship between perceived teacher feedback and intrinsic motivation, one of the flow components also considered in this study. Although the tool has been applied in the sports field, based on the investigations carried out in the scientific literature, it has proven to be the most suitable for the artistic field as well. Physical education teachers' feedback-giving behaviors were considered similar to those of art teachers. These included both verbal and non-verbal forms of feedback, such as facial expressions (e.g., angry facial expressions, disapproving head nods) or physical contact (e.g.,

encouraging touching or patting on the shoulder). According to researchers, it is indicated that in order to give a clear and consistent message to students, it is important for teachers to use both verbal and non-verbal forms of communication (Martens, 1987; Yukelson, 1998, as cited in Koka, 2006), more so considering the fact that 70% of communication is non-verbal (Martens, 1997, as cited in Koka, 2006). Application of this scale on different student samples indicates that perceived positive general feedback is a valid predictor of intrinsic motivation and its components, such as perceived competence and enjoyment.

Analyzing students' self-reported data related to their teacher's feedback can provide important information in order to examine the effects of feedback itself on the psychological outcomes in students' lives, which is why this relationship (between feedback and psychological outcomes, such as intrinsic motivation) has received much attention in the scientific literature of sports. Numerous studies in this field have demonstrated that perceptions related to the coach's positive feedback are strong predictors of perceived competence, interest, enjoyment and intrinsic motivation (Koka, & Hein, 2005), the last two factors being also regarded as flow dimensions. However, a lower number of studies analyzes the effects of perceived teacher feedback, an important lack in the literature as institutionalized education is very different that practicing similar activities in other settings (artists evaluated by mentors/auditorium, etc.), where it is considered that those involved may already have a certain level of motivation due to the voluntary nature of their activity, this motivation eventually leading to performance. Thus, the present research will investigate the increment brought by art students' perceived teacher feedback on the relationship between flow and performance.

H2: Perceived feedback will moderate the link between flow and performance, in the sense that it will enhance flow's effect on performance.

Methodology

Design

This research is based on a non-experimental, cross-sectional design model, as the variables were investigated at a single point in time without controlling or manipulating them. The variables considered were flow as the independent variable, performance as the dependent variable, and perceived feedback as the moderating variable.

Data collecting procedure

Participant data was collected through a Google Docs form between January and April 2020, the form being addressed only to people who are currently studying or have graduated with an Art degree at the time of completion. The data was collected through the snowball method due to the limited accessibility to the target population. Volunteers filling out the form were therefore instructed to forward it to colleagues and other acquaintances in the artistic field after completion. Additionally, participants were informed about confidentiality of the data collected and they gave their consent for the data to be used exclusively for academic purposes.

Participants

The sample was made out of 108 Art degree students. This included 57 women (52.8%) and 51 men (47.2%), aged between 19 and 47 years old ($M = 23.85$, $SD = 5.76$). Respondents came from both state institutions (78.7%), as well as private institutions (21.3%), from various subfields of art (22.2% musical interpretation, 17.6% acting, 17.5% plastic arts – painting, graphic design, photo-video image processing –, 14.8% film imaging, 14.8% film direction, 4.6% design – interior design, scenography –, and a percentage of 8,3% from other specializations, such as architecture and puppetry). Among them, most were in the process of completing their Bachelor's degree (69.4%, out of which 20.4% were 1st year students, 26.9% were 2nd year students, and 22.2% were 3rd year students), a percentage of 12.9% was made up of students undergoing a Master's degree (out of which 4.6% were 1st year students and 8.3%

were 2nd year students), while the rest, consisting of 17.6%, were graduates.

Instruments

Flow. Flow was measured using an adaptation of The Work-Related Flow Inventory (WOLF; Bakker, 2008). In order to measure flow as experienced in artistic activities, the instrument was adjusted so that the study participants thought about their experience during art involvement instead of work.

The Work-Related Flow Inventory (Bakker, 2008) was translated into the Romanian language by Sîrbu (<http://www.researchcentral.ro/index.php?action=listateste&ID=435>) and adapted on a Romanian sample by Bădoiu and Oprea (2019). It contains three components, adapted accordingly to serve the current study (Absorption, Art Enjoyment instead of Work enjoyment, and Intrinsic Art Motivation instead of Intrinsic Work Motivation), each of them being made up of 4 items, respectively 5 for the latter one (e.g., Absorption: “When I am doing art, I think about nothing else.”; “I get carried away by my art activities.”); Art Enjoyment: “My artistic activities give me a good feeling.”; “I feel happy during artistic activities.”); Intrinsic Art Motivation: “I find that I also want to get involved in artistic activities in my free time.”; “When I am involved in artistic activities, I am doing it for myself.”), measured on a seven-point Likert scale (from 1 – Never, to 7 – Always).

Similar to the initial validation study by Bakker (2008) and the one based on a Romanian sample (Bădoiu, & Oprea, 2019), internal consistency indices were measured for each subscale of the instrument, indicating values similar to the previously mentioned studies: for the Absorption subscale – .86, for the Art Enjoyment subscale – .91, and for the Intrinsic Art Motivation subscale – .82.

Performance. Williams and Anderson’s Performance Scale (Williams, & Anderson, 1991) was translated to Romanian by Iliescu (<http://www.researchcentral.ro/index.php?action=listateste&ID=432>) and adjusted so as to serve the present study. The original scale (Williams, & Anderson, 1991) contained 21 items, divided into 3 different subscales. All

the items (7) that assess organizational citizenship behaviors that have a specific individual as target (OCBI) were kept (e.g., “I adequately complete assigned duties.”), as well as 3 of the in-role behaviors items (IRB) (e.g., “Attendance in artistic activities is above the norm.”), while the rest of the items, including the other 4 items of the IRB subscale and the all the items for the organizational citizenship behavior directed toward the organization (OCBO) subscale (e.g., “I take time to listen to colleagues’ problems and worries.”, respectively “I spend a great deal of time with personal phone conversations.”) were deemed inadequate for measuring behaviors in the art field. In this study, the scale consists of 10 relevant items to measure the performance of Art students. The items are measured on a four-point Likert scale (1 – Strongly Disagree, 2 – Disagree, 3 – Agree, 4 – Strongly Agree). The values of items 6, 7, and 9 were reversed to measure the construct correctly.

Perceived Feedback. The modified and revised version of the Perceptions of Teacher’s Feedback Scale (PTF; Koka, & Hein, 2005) was used to measure art student’s perceived feedback from their teachers. It contains 11 items in its final version, the rest of the items being eliminated due to them not fulfilling the validity condition following the confirmatory factor analysis (Koka, & Hein, 2005). The 11 items were divided into 4 distinct subscales, depending on their incremental value, namely the perceived positive general feedback (PPGF; e.g., “My work is frequently encouraged by the teacher.”), perceived knowledge of performance (PKP; e.g., “The teacher often gives me instructions/feedback.”), perceived negative nonverbal feedback (PNNVF; e.g., “In response to a poor performance, the teacher looks angry.”), and perceived positive nonverbal feedback (PPNVF; e.g., “In response to a good performance, the teacher pats me on the back.”) subscale. Some of the items dealing with nonverbal feedback were taken from the nonverbal feedback categories previously used in the questionnaire version of the CBAS (Coaching Behavior Assessment System; Allen, & Howe, 1998, as cited in Koka, & Hein, 2005). The measurement is

made on a five-point Likert scale (from 1 – Strongly disagree, to 5 – Strongly agree). The items of the PNNVF subscale were reversed to adequately measure the construct of perceived feedback.

After analyzing the data separately according to each subscale, similar to the validation study of Koka and Hein (2005), the Alpha internal consistency indices indicate values higher than .70 for all the subscales (for PPGF – .72, PKP – .76, and PNNVF – .82), with the exception of the PPNVF subscale which, posing the risk of any two-item scale, presents a value lower than .70 (= .59),

therefore not being able to be taken into account in the following analysis.

Results

The data were statistically processed using SPSS (ver. 18.0).

Descriptive statistics

First of all, the mean and standard deviation of the studied constructs were identified based on the sample data from the target population. These are presented in Table 1.

Table 1. *The influence of socio-demographic indicators on the investigated constructs*

Socio-demographic indicators	N	%	Flow		Perceived Feedback		Performance	
			<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
	108	100%	75.51	11.61	33.78	32.53	32.40	5.07
Gender								
1. Male	51	47.2%	77.90	9.04	32.63	6.10	32.16	4.87
2. Female	57	52.8%	73.37	13.22	34.81	6.76	32.61	5.27
Age								
1. 19-24	84	77.8%	75.02	12.41	34.98	6.13	32.42	5.02
2. 25-30	13	12%	77.85	8.20	29.92	7.67	31.15	6.41
3. 31-47	11	10.2%	76.45	8.56	29.18	4.16	33.73	3.55
Education level								
1. Bachelor's	75	69.4%	75.35	11.97	35.21	5.95	32.60	4.92
2. Master's	14	13%	76.93	9.85	31.71	7.38	32.43	2.76
3. Graduate	19	17.6%	75.11	11.88	29.63	6.13	31.58	6.83
Artistic subfield								
1. Film imaging	16	14.8%	75.75	11.12	35.13	5.31	34.81	3.69
2. Film direction	16	14.8%	77.50	10.03	30.94	4.37	29.81	6.89
3. Plastic arts	19	17.6%	75.63	11.12	36.63	6.19	32.16	4.87
4. Musical interpretation	24	22.2%	72.17	14.44	37.04	5.76	32.21	4.82
5. Acting	19	17.6%	80.11	6.03	32.05	6.47	33.68	3.75
6. Design	5	4.6%	75.60	6.38	30.80	8.46	32.80	2.68
7. Others	9	8.3%	70.44	16.83	27.00	5.74	30.78	6.41

Inferential statistics

Moving forward, differences were observed between levels of flow, perceived feedback and performance based on gender, age, education level and artistic subfield, with socio-demographic indicators acting as independent variables. Thus, it seems that male participants had higher scores in the case of flow ($M = 77.90$, $SD = 9.04$), compared to

female participants ($M = 73.37$, $SD = 13.22$), while in the case of the other two variables, female participants had higher scores (perceived feedback: $M = 34.81$, $SD = 6.76$; performance: $M = 32.61$, $SD = 5.27$), but not very different from those of male participants (perceived feedback: $M = 32.63$, $SD = 6.10$; performance: $M = 32.16$, $SD = 4.87$).

The age of the participants was divided into 3 groups (19-24, 25-30, 31-47), thus the

25-30-year-old group had the highest scores of flow ($M = 77.85, SD = 8.20$), followed by the 31-47-year-old group ($M = 76.45, SD = 8.56$), with the youngest group, the ones between 19-24 years old, ranking last ($M = 75.02, SD = 12.41$). In the case of performance, the highest scores were recorded in the 31-47-year-old group ($M = 33.73, SD = 3.55$), followed by the 25-30-year-old group ($M = 31.15, SD = 6.41$) and the 19-24-year-old one ($M = 32.42, SD = 5.02$). While for perceived feedback, the highest values belonged to the youngest group ($M = 34.98, SD = 6.13$), followed by similar values for the 25-30-year-old group ($M = 29.92, SD = 7.67$) and the 31-47-year-old group ($M = 29.18, SD = 4.16$).

Based on the educational level at the time of filling in the form, the highest Flow scores were found in Master's degree students ($M = 76.93, SD = 9.85$), especially those in the 1st year of their Master's ($M = 82.40, SD = 6.98$). The highest scores in the case of perceived feedback were found among Bachelor's degree students ($M = 35.21, SD = 5.95$), especially those in their 2nd year of Bachelor's ($M = 37.55, SD = 5.50$), while for performance the mean values are very similar, with Bachelor's students having the highest score ($M = 32.60, SD = 4.92$).

In terms of artistic subfields, the highest Flow scores were found in acting students ($M = 80.11, SD = 6.03$), followed by film direction students ($M = 77.50, SD = 10.03$), imagine de film ($M = 75.75, SD = 11.12$), plastic arts ($M = 75.63, SD = 11.12$), design ($M = 75.60, SD = 6.38$), musical interpretation ($M = 72.17, SD = 14.44$) and others ($M = 70.44, SD = 16.83$). Perceived feedback had the highest values in the case of musical interpretation students ($M = 37.04, SD = 5.76$), followed by plastic arts ($M = 36.63, SD = 6.19$), film imaging ($M = 35.13,$

$SD = 5.31$), acting ($M = 32.05, SD = 6.47$), film direction ($M = 30.94, SD = 4.37$), design ($M = 30.80, SD = 8.46$) and others ($M = 27.00, SD = 5.74$). Last but not least, the highest scores for Performances were found in film imaging students ($M = 34.81, SD = 3.69$), followed by acting students ($M = 33.68, SD = 3.75$), design ($M = 32.80, SD = 2.68$), musical interpretation ($M = 32.21, SD = 4.82$), plastic arts ($M = 32.16, SD = 4.87$), others ($M = 30.78, SD = 6.41$) and film direction ($M = 29.81, SD = 6.89$).

All the values were included in Table 1, along with the descriptive statistics.

Moving further to the moderation analysis and bearing in mind that the existence of such an effect is tested through two steps involving two different statistical tests, namely the Pearson correlation and the hierarchical linear regression, they will be presented in the following section.

To verify that the conditions for applying the regression analysis are met, a Pearson correlation test was applied to assess the association between the independent and the dependent variable, namely between flow ($M = 75.51, SD = 11.61$) and performance ($M = 32.40, SD = 5.07$). A statistically significant positive correlation was found between the two variables, with $R(108) = .32, R^2 = .10, p < .01$, thus verifying the first condition. Confidence interval limits (95%) were between .14 and .47. Likewise, a Pearson correlation was also used to test the association between the independent variable and the moderator variable, namely between flow and perceived feedback ($M = 33.78, SD = 6.52$). A statistically insignificant negative correlation was obtained between flow and perceived feedback, with $R(108) = -.00 (= -.008), R^2 = .00, p > .05$, thus verifying that the second condition is also met. Confidence interval limits (95%) were between -.19 and .18.

Table 2. Correlation test results in the link between flow, perceived feedback, and performance ($N = 108$)

		<i>M</i>	<i>SD</i>	<i>1</i>	<i>2</i>	<i>3</i>
1.	Flow	75.51	11.61	-		
2.	Perceived feedback	33.78	6.52	-.00	-	
3.	Performance	32.40	5.07	.32*	.27*	-

Note: * $p < .01$.

After the previous results showed that the two conditions (significant correlation between IV and DV and insignificant correlation between IV and Mo, according to Table 2), the hierarchical linear regression can be applied. The values of the two predictors (IV and Mo) were transformed into standardized z-scores so that their interaction variable (Flow*Perceived feedback) should not generate collinearity with any one of the two predictors. The interaction variable will be obtained then by the multiplication of the predictors' standardized z-scores.

In order to test the first hypothesis of the study (H1: *Flow predicts performance in*

artistic activities.), the IV (flow) was initially introduced by itself in the first step of the linear regression analysis. The results are presented in Model 1.1 (Table 3). For the second hypothesis of the study (H2), a second regression analysis was done in order to examine whether perceived feedback acts as a moderator in the link between flow and performance. Therefore, the perceived feedback variable was introduced alongside flow in the first step, while their interaction variable (Flow*Perceived feedback) was introduced in the second step of the model. The results are presented in Models 1.2 and 1.3 (Table 4).

Table 3. *Linear regression analysis for the predictor flow and the criterion performance (N=108)*

Predictor	Performance				
	<i>B</i>	<i>R</i>	<i>R</i> ²	ΔR^2	<i>F</i>
Model 1.1		.32**	.10**	.10	12.72
1. Flow	.14*				

Note: $p < .01^*$, $p < .001^{**}$.

Table 4. *Moderation analysis of perceived feedback in the link between flow and performance (N = 108)*

Predictors	Performance				
	<i>B</i>	<i>R</i>	<i>R</i> ²	ΔR^2	<i>F</i>
Model 1.2		.43**	.18**	.18**	12.03
1. Flow	.14**				
2. Perceived feedback	.21*				
Modelul 1.3		.49	.24	.05*	11.17
1. Flow*Perceived feedback	-1.07*				

Note: $p < .01^*$, $p < .001^{**}$.

Multicollinearity between variables was low (Tolerance = 1.00, VIF = 1.00). The Durbin-Watson test for autocorrelation of residuals was also used, indicating an appropriate value (= 1.70), thus no autocorrelation. It also met the assumption of non-zero variance.

The results show that Model 1.1 (Table 3) is statistically significant: $F(1, 106) = 12.72$, $p = .001$. Therefore, flow is a significant

predictor of performance ($\beta = .32$, $t = 3.56$, $p = .001$), supporting the first study hypothesis (H1). Flow accounted for 10% ($\Delta R^2 = .10$, $p < .001$) of the variance in performance. For each unit added to flow, performance value increases by .14 points ($B = .14$, $p < .001$), therefore if flow increases, performance will also increase.

The second linear regression indicates that Model 1.2 (without the interaction between VI

and Mo, see Table 4) is statistically significant: $F(2, 105) = 12.03, p < .001$. Similarly, Model 1.3 (with the interaction between VI and Mo, see Table 4) also proved to be statistically significant: $F(3, 104) = 11.17, p < .001$. No collinearity problems were reported in the interaction model between flow and perceived feedback either (Tolerance = .99, VIF = 1.00), with the Durbin-Watson test again indicating an appropriate value (= 1.94).

The results show that the effect of the interaction on performance adds .05 ($\Delta R^2 = .057, p < .01$) more than flow alone as a predictor, meaning that the interaction between flow and perceived feedback makes up 5% of the 24% belonging to the predictors introduced in Model 1.3 which explain the variance in performance. This supports the first part of H2 as perceived feedback is shown to be a significant moderator in the link between flow and performance. However, interpreting the unstandardized coefficient, which quantifies flow's effect on performance when perceived feedback changes by a unit, reveals that the moderation has a buffering effect on the relationship ($B = -1.07, p < .01$), as opposed to the enhancement effect we were expecting according to the second hypothesis (H2: *Perceived feedback will moderate the link between flow and performance, in the sense that it will enhance flow's effect on performance.*). This means that for any unit added to perceived feedback, increasing flow by one unit causes the performance value to decrease by 1.07 points – if the interaction increases, performance decreases. As based on previous research in this field (e.g., Koka, & Hein, 2005; 2006), an enhancement effect was to be expected rather than a buffering one, in

what follows we made some attempts in order to understand this unexpected result.

To better understand the way the moderation effect of perceived feedback manifested on the relationship between flow and performance, the variation of said relationship at different values of perceived feedback was analyzed (low values at 1 standard deviation below the mean, average values around the mean and high values at one standard deviation above the mean). This analysis was done using PROCESS (Hayes, 2012).

The analysis shows that, when the scores of perceived feedback are low, meaning around 1 SD below the mean, flow is a significant predictor of performance ($B = .22; t = 4.77, p < .001; CI\ 95\%: .1335 - .3231$). When perceived feedback scores are around the mean (between -1SD and +1SD), flow is again a significant predictor of performance ($B = .13; t = 3.63, p < .001; CI\ 95\%: .0618 - .2099$). However, at higher score values of perceived feedback, meaning over 1 SD above the mean, flow is not a significant predictor of performance ($B = .04; t = .84, p > .05; CI\ 95\%: -.0590 - .1458$). Therefore, only at low and medium levels of perceived feedback does flow have a statistically significant effect on performance. These results are presented in Table 5.

Depending on the level of flow scores and perceived feedback (low, medium, high), performance takes a certain value. For example, in the interaction between a low flow score (-11.61) and a low perceived feedback score (-6.52), performance takes a value of 28.28. There are a total of 9 possible interactions, which can be visualized in Figure 1.

Table 5. *The effects of flow on performance at different values of perceived feedback*

Moderator	Perceived feedback					
	Value	Effect	SE	t	LLCI	ULCI
Low score	-6.52	.22*	.04	4.77	.13	.32
Medium score	0	.13*	.03	3.63	.06	.20
High score	6.52	.04	.05	.84	-.05	.14

Note: $p < .001^*$.

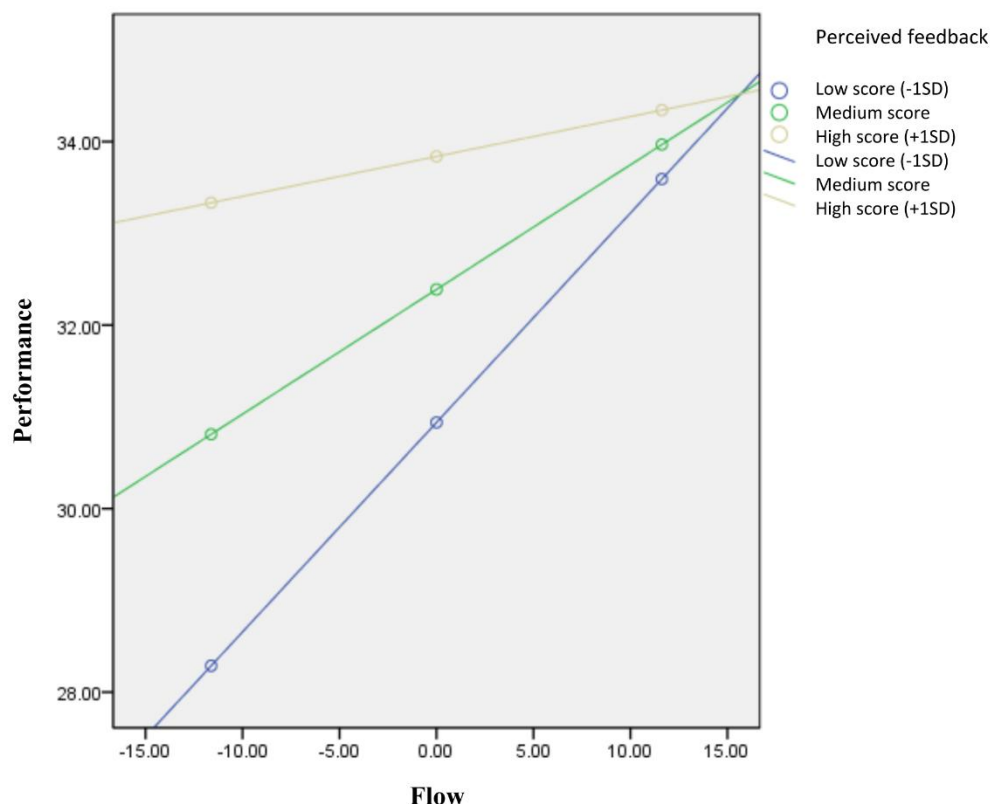


Figure 1. Simple slopes of flow which predicts performance at 1 SD below the mean of perceived feedback (low scores), at around the mean of perceived feedback (medium scores) and at 1 SD above the mean of perceived feedback (high scores)

According to the Johnson-Neyman technique included in the statistical analysis, a technique which presents the effect of flow on performance based at several values of perceived feedback, it was observed that the link between flow and performance is no longer significant starting with perceived feedback scores greater than 37.38.

Moreover, the moderating effect of perceived feedback was also analyzed according to the three subscales of the measuring instrument, represented by perceived general positive feedback (PPGF), perceived knowledge of performance (PKP) and perceived negative nonverbal feedback (PNNVF), with the perceived positive nonverbal feedback (PPNVF) subscale being removed from the statistical analysis due to it not meeting an adequate value of internal consistency, as previously mentioned. Thus, Table 6 shows the values of the Pearson

correlation coefficients resulted between flow, performance and the three subscales of perceived feedback.

Table 6 shows that the two conditions required for the application of hierarchical linear regression analysis are met, namely the statistically significant correlation between VI and VD (flow and performance) and the lack of statistically significant correlation between VI and the three subscales of the moderating variable, perceived feedback, taken separately. The values of the interactions between flow and each subscale of perceived feedback (Flow*PPGF; Flow*PKP; Flow*PNNVF) were transformed into standardized z-scores so that they would not generate collinearity with any of the two predictors involved. The interaction variable between the two predictors will then be obtained by multiplying the standardized z-scores resulted.

Table 6. Correlation test results for the link between flow, performance and the PPGF, PKP, and PNNVF subscales of perceived feedback (N = 108)

	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. Flow	75.51	11.61	-	-	-	-	-
2. Performance	32.40	5.07	.32**	-	-	-	-
3. PPGF	10.22	2.57	.15	.38**	-	-	-
4. PKP	12.32	2.49	-.00	.27**	.58**	-	-
5. PNNVF	11.23	3.29	-.13	.04	.26**	.42**	-

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

PPGF = Perceived positive general feedback; PKP = Perceived knowledge of performance; PNNVF = Perceived negative nonverbal feedback.

Next, the three subscales of perceived performance. The results are presented in Table 7. feedback were examined as moderating variables in the link between flow and

Table 7. Moderation analysis for the three subscales of perceived feedback (PPGF, PKP, PNNVF) on the link between flow and performance (N = 108)

Predictors	Performance							
	<i>R</i>	<i>R</i> ²	ΔR^2	<i>F</i>	<i>B</i>	<i>SE</i>	β	<i>t</i>
Model 2.1	.47***	.22***	.22***	15.08***				
1. Flow					.11**	.03	.27*	3.21
2. PPGF					.68***	.17	.34***	3.95
Model 2.2	.51*	.26*	.03*	12.35***				
1. Flow					.09*	.03	.22*	
2. PPGF					.66***	.16	.33***	2.50
3. Flow*PPGF					-.82*	.35	-.20*	3.92
								-2.36
Model 3.1	.42***	.18***	.18***	11.69***				
1. Flow					.14***	.03	.32***	3.72
2. PKP					.55**	.18	.27**	3.10
Model 3.2	.44	.19	.01	8.40***				
1. Flow					.13***	.03	.31***	3.61
2. PKP					.55**	.17	.27**	3.11
3. 1.Flow*PKP					-.53	.42	-.11	-1.29
Model 4.1	.33**	.11**	.11**	6.83**				
1. Flow					.14***	.04	.34***	3.66
2. PNNVF					.13	.14	.09	.97
Model 4.2	.42**	.18**	.06**	7.71***				
1. Flow					.16***	.04	.38***	4.25
2. PNNVF					.18	.13	.12	1.36
3. Flow*PNNVF					-1.42**	.48	-.26**	-2.91

Note: $p < .05^*$, $p < .01^{**}$, $p < .001^{***}$.

PPGF = Perceived positive general feedback; PKP = Perceived knowledge of performance; PNNVF = Perceived negative nonverbal feedback.

The results show that the interaction model of flow and PPGF is statistically significant: $F(3, 104) = 12.35, p < .001$. It explains 26% ($R^2 = .26, p < .05$) of the variance in performance, with the interaction variable increasing the explained variance by approximately 4% ($\Delta R^2 = .039, p < .05$). The B coefficient for the interaction effect of flow and PPGF on performance is significant ($B = -.82, t[108] = -2.36, p < .05$), again indicating a buffering effect on the dependent variable – with each unit added to this interaction, the value of performance is reduced by $-.82$.

In the second moderation, the model including the interaction between flow and PKP also turned out to be significant: $F(3, 104) = 8.40, p < .001$. However, the increment brought to the explained variance in performance was not significant ($R^2 = .19, \Delta R^2 = .013, p > .05$).

Moving forward, the interaction model between flow and PNNVF is also significant: $F(3, 104) = 7.71, p < .001$. It explains 18% ($R^2 = .18, p < .01$) of the variance in performance, with the interaction variable increasing the explained variance by approximately 7% ($\Delta R = .067, p < .01$). The same buffering effect on the link between flow and performance is observed in this case as well, based on the B coefficient ($B = -1.42, t[108] = -2.91, p < .01$).

As both the multicollinearity index values (tolerance index and VIF) and Durbin-Watson test results were within the recommended values in all three regression analyses, we understand that there were no problems with multicollinearity and independence of errors.

Discussion

The current study aimed to investigate whether flow experienced during artistic activities can predict performance in art students, while also looking to examine whether teacher's feedback as perceived by students can moderate this relationship, specifically by enhancing the effects flow has on performance. Based on the results of hierarchical regression analysis, the first research hypothesis was supported ($H1$), therefore flow experienced during artistic activities is a significant predictor of performance in art students ($p < .001$). More

specifically, flow explains 10% ($\Delta R^2 = .10$) of the variance in performance value, with the remainder explained by other variables that do not serve the purpose of this study. Although the result was a confirmatory one, it seems that the data collected in this study indicate a small percentage of the variance explained by the flow predictor on performance, so the results obtained should be interpreted with caution.

Several other studies have also previously shown that the flow people experience in various activities predicts performance, such as the series of research from Engeser and Rheinberg (2008), consisting of three separate studies. In two of them, they obtained similar results in the context of learning activities (of statistics and the French language), while in the other one, where flow was shown not to predict performance, the results could be easily explained by the chosen activity, namely Pac-Man game, as this is not attributed to a high functioning state that favors performance due to its intrinsic motivating nature and also, further engagement in the activity (which, depending on its frequency, can also favor performance) could not be accounted for, therefore the link was a weak one. Other similar results were obtained in domains such as sports, where we have examples such as the research of Jackson and his collaborators (2001), where performance was self-reported, as in the present study; the research of Bakker and his collaborators (2011) and Stavrou and his collaborators (2014), in the latter two performance being both self-reported (subjectively) and reported by the coach (objectively), with both obtaining significant results of a positive effect based on linear regression, thus supporting the fact that flows predicts performance.

Results of the second linear regression were also in favor of the second research hypothesis ($H2$), thus indicating that perceived feedback acts as a significant moderator in the relationship between flow and performance of art students ($p < .001$). The interaction between flow and perceived feedback makes up 5% out of the 24% of the variance explained by the predictors of performance alone, as seen in Model 1.3 (Table 4). Based on the second hypothesis, perceived feedback, as a moderator, was expected to enhance the link between flow and performance. However,

the moderator had a buffering effect on this relationship instead, meaning that the value of performance decreases if the value of perceived feedback increases (alongside the value of flow), thus the results showing partial support of *H2*.

Nonetheless, according to the scientific literature, the lack of a positive effect of feedback on performance in various activities is not as surprising as expected. For example, a literature review by Balcazar and collaborators (1985) based on 69 studies in the organizational domain, totaling 126 experiments, indicate that feedback does not have performance-enhancing effects uniformly. This could be explained by the fact that performance feedback has certain characteristics depending on which it can be more or less effective in improving performance, such as the source that provides it (e.g., supervisor), the transmission mechanism (e.g., verbal, non-verbal), the content of the message (e.g., comparison of individual performance with his past performance), its frequency (e.g., daily, weekly, monthly) and others. Balcazar and his collaborators (1985) concluded that adding behavioral consequences (reinforcement or punishment, e.g., performance-based pay, praise, time off, firing) and goal-setting procedures (e.g., discussing a desired performance outcome by the supervisor) improves the consistency of feedback effects.

The review's results indicate that the lowest level of consistency of effects (28%) and the highest proportion of combined effects (57%) were obtained in studies in which only feedback was given, without the other previously mentioned elements, these effects being defined by both increases and decreases in the level of performance statistically significant in some but not all participants in the experiments following the given feedback. However, similar to the present research, giving feedback unaccompanied by other elements was the most used procedure by researchers (37% of the total number of applications of feedback). Summarizing the results of this literature review, the highest levels of consistency in the effectiveness of feedback on performance were found when feedback was given by a supervisor

individually, publicly, daily, and through written or graphic mechanisms. This literature review related to feedback was replicated by Alvero and collaborators (2001), again indicating the importance of additional factors in giving feedback and its characteristics in achieving an improvement in performance.

A meta-analysis by Kluger and DeNisi (1996) also indicated the existence of feedback interventions that decreased performance (one-third of those studied), a finding that could not be explained by either sampling errors or the type of feedback (negative or positive), nor the existing theories, so the authors proposed a theory of feedback interventions (FIT), assuming that when giving feedback, this changes the locus of attention among three general and hierarchically organized levels of control: task learning, task motivation, and meta-tasks (including self-related processes such as self-directed attention, affect, etc.), with results indicating that the effectiveness of feedback decreases as attention moves up the hierarchy, reaching close to the self and away from the task, thus altering performance in a negative way.

Furthermore, the previous observation regarding the fact that the link between flow and performance is no longer significant starting with high values of perceived feedback (greater than 37.38) can be explained by the fact that giving feedback can have detrimental effects on intrinsic motivation (Henderlong, & Lepper, 2002). According to a considerable body of research (e.g., Birch et al., 1984; Gordon, 1989; Kohn, 1993, as cited in Henderlong, & Lepper, 2002), praise (positive feedback) can create excessive pressure to perform well, may discourage risk-taking and reduce perceived autonomy. Also, ironically, research has indicated that when praise is provided for low-difficulty tasks, it can lead to inferences of low ability (Graham, 1990, as cited in Henderlong, & Lepper, 2002). Therefore, we can say that, depending on the perceived difficulty of the task in which the art students were involved, the feedback might rather have a negative effect on their intrinsic motivation, which will therefore lead to a low level of performance.

Limitations

Taking into account both the suggestions of the previously mentioned authors and our own considerations, the main identified limits of the present research will be stated as follows.

Some of the main methodological limitations of this research were represented by the limited number of participants (108), which prevented us from making inferences regarding the possible differences in experiencing the studied constructs in each artistic subfield; and the sampling procedure, carried out through the snowball method due to the limited access to the target population, namely Art degree students. This procedure poses the risk of creating a tendency towards collecting similar data from respondents following the distribution of the questionnaire, as people from the same social group, degree, class may have similar experiences. This technique makes the collection of data less objective, and therefore, this needs to be considered both when interpreting the results and also in conducting future research.

Additionally, this study included students from several art subfields, such as plastic arts, music, acting, directing, and others. Each one of them might have different characteristics based on the factors that can lead to experiencing flow (e.g., a fact shown by research in the acting – Martin, & Cutler, 2010, or musical fields – Wrigley, & Emmerson, 2011, where flow's dimensions were studied) or different standards and methods of defining performance (e.g., the quality of an artistic performance can be evaluated from the creativity point of view, as in Byrne et al., 2003, where performance was defined by the degree of involvement and the completion of tasks received in the course, according to the scale created by Williams, & Anderson, 1991), but also different behaviors through which feedback can be given, even though measuring instruments with the most suitable items that can be adjusted to an artistic setting were chosen for the variables considered.

There is a possibility that retrospective self-report measurement of the three variables studied also leads to biased estimates of student experience (Brewer et al., 1991). For example, negative affect or cognitions about

the quality of their assessed performance could influence their recollection of the experience. An experimental design might be a more objective way to measure the desired variables, although this might alter the degree of ecological validity.

Another limitation is represented by the social factor, both interpersonal and intrapersonal, which this research did not emphasize much in the initial stage of establishing its design. Thus, it is important to note that some artistic fields are more favorable for practicing activities individually (e.g., plastic arts, design), while others bring students together in smaller or larger groups (e.g., acting, music). This fact requires special attention as significantly higher values of experiencing flow have been identified when activities are carried out in groups, as opposed to practicing them individually (Walker, 2010; Miell, & MacDonald, 2000; MacDonald, Miell, & Mitchell, 2002).

Continuing the previous idea regarding the significance of the intrapersonal social factor this time, it is worth noting that educational researchers have discovered the highly important role that perception has in processing feedback, thus assuming that its effectiveness depends to a large extent on the way in which students perceive and interpret it (Timmers, Walraven, & Veldkamp, 2015). Therefore, we can identify studies that indicate the fact that perceived feedback is more effective on performance if those who receive it trust its source (Earley, 1986; Huang, 2012) or if they perceive it as honest (Henderlong & Lepper, 2002). For this reason, the interpersonal and intrapersonal social factor plays a very important role in examining the variables involved in this research.

Implications and future directions

Several theoretical and practical implications arise from this study. Regarding the theoretical perspective, on the one hand, this research extended the already existing body of scientific literature focused on flow and one of its frequently studied outcomes, namely performance. On the other hand, upon investigating the literature, this relationship has been very little studied in the field of arts, an

activity with a high potential to generate flow due to its characteristics (Csikszentmihalyi, 1990; 1997; Csikszentmihalyi, & Csikszentmihalyi, 1992).

A less frequent investigated relationship in literature, however, was the moderation of perceived feedback in the link between flow and performance, thus by partially coming in support of the second hypothesis, the present findings can add to the academic literature. The buffering moderating effect of feedback on the previously stated relationship is a fact that deserves attention and further investigation in the characteristics of feedback and how it is most effectively delivered for the desired performance-enhancing effects and beyond. Based on the results of the present research we therefore understand that feedback does not have an effect of enhancing the relationship between flow and performance by giving it singularly, but, according to previous research (Alvero et al., 2001; Balcazar et al., 1985), it would be more effective in producing positive effects if given alongside certain additional elements.

In terms of practical implications, this study has particular significance for the improvement of the way teachers conduct their classroom activities, but also the way art students learn and perform tasks. Considering the limitations of the present research and some of their possible explanations stated previously (Alvero et al., 2001; Balcazar et al., 1985; Kluger, & DeNisi, 1996), it would be preferable for university teachers to include in their practice not only feedback, but also elements such as behavioral reinforcements, even rewards (not necessarily of a material nature) to avoid possible negative effects and to rather encourage its potential benefits related to performance, and maybe not only.

At the same time, this study can also help students who are looking for ways in order to improve their performance in artistic assignments. An often held belief in formal education is that students, once placed in a formal educational context to perform previously enjoyable tasks which made them experience intrinsic motivation, tend to lose these components of their experience due to the now being in a more evaluative setting, which can lead to poor engagement and completion in

their tasks. Therefore, having gained support for the fact that flow can predict performance in art, moving forward we can continue to better study the preconditions necessary to experience this phenomenon according to the specific characteristics of each artistic field.

As the scientific literature is marked by a lack of research conducted in the art field, an thus in the field of artistic performance, we can only urge this to be more studied in the future, as art poses a significant role in both the actual creation and in the consumption itself as a cultural product (films, music, painting, theater) based on its many beneficial effects on health, some examples being the improvement of psychological well-being (Pizzaro, 2004) and the decrease of burnout (Italia et al., 2008).

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