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# **In and out of control: Ballet dancers' self-perceptions of emotional intelligence and dispositional flow**

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**IN AND OUT OF CONTROL:  
BALLET DANCERS' SELF-PERCEPTIONS OF EMOTIONAL INTELLIGENCE AND  
DISPOSITIONAL FLOW**

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## Resumo

A psicologia positiva procura entender os fatores e os processos que conduzem ao funcionamento ótimo do ser humano. Assim, as chamadas variáveis positivas assumem relevo pelo papel que parecem desempenhar em diversas dimensões da realização humana, desde a qualidade das relações interpessoais até à otimização de performance. Contudo, o estudo da influência destas variáveis é escasso no domínio da arte. O presente estudo procurou perceber as dinâmicas do traço inteligência emocional (IE) e do estado de flow numa amostra de bailarinos portugueses, nomeadamente, se estas duas variáveis se correlacionam positivamente (H1) e se bailarinos mais experientes apresentam níveis mais elevados de traço IE e de flow (H2). A amostra foi composta por 152 bailarinos, na sua maioria mulheres (90.7%) e estudantes de ballet (87.4%). Os bailarinos responderam a 4 instrumentos de autorrelato: o TEIQue SF (relativo ao traço de IE), o DFS2 (relativo ao flow), uma medida de avaliação da prática de dança e um questionário sociodemográfico, ambos elaborados especificamente para este estudo. Os resultados confirmaram que o traço IE e o estado de flow se correlacionam positivamente ( $r = .43$ ). Também confirmam que bailarinos mais experientes apresentam maiores níveis de IE, em particular de autocontrolo. As autopercepções de flow parecem depender mais de fatores ambientais e situacionais que do fator experiência na atividade. Este estudo corrobora as associações até então verificadas entre variáveis positivas, e reforça, ainda, a necessidade de mais investigações focadas neste tipo de variáveis em contextos específicos de realização como promotores do desempenho ótimo do ser humano.

**Palavras-chave:** psicologia positiva; inteligência emocional; flow; ballet; bailarinos.

## Abstract

Positive psychology intends to understand the factors and the processes involved in human optimal functioning. Therefore, the so-called positive variables emerge as relevant due to the role they seem to play in diversified dimensions of human realization, from interpersonal relationship quality to optimal performance. However, research on the influence of such variables is scarce in the art domain. The present study aimed at understanding the dynamics of trait emotional intelligence (EI) and the state of flow in a sample of Portuguese ballet dancers, particularly, whether these variables correlate positively (H1) and whether more experienced dancers present higher levels of trait EI and flow (H2). The sample included 152 ballet dancers, of which the majority were females (90.7%) and ballet students (87.4%). The dancers answered to 4 self-report instruments: the TEIQue SF (regarding trait EI), the DFS2 (regarding flow), a measure for the evaluation of dance practice and a sociodemographic questionnaire, both designed specifically for this study. Results confirmed the positive correlation between trait EI and the state of flow ( $r = .43$ ). It was also confirmed that more experienced dancers present higher levels of emotional intelligence, particularly self-control. Self-perceptions of flow seem to depend more on environmental and situational factors than on experience in the task. This study corroborates the previously found associations between positive variables, and reinforces the need for more investigations focused on this type of variables in specific contexts of realization as privileged processes of human optimal performance.

**Keywords:** positive psychology; emotional intelligence; flow; ballet; dancers.

## Resumé

La psychologie positive cherche à comprendre les facteurs et les processus qui conduisent à un fonctionnement optimal chez l'humain. Ainsi, les dites variables positives semblent jouer un rôle dans diverses dimensions dans la réalisation humaine, de la qualité des relations interpersonnelles à l'optimisation de la performance. Cependant, l'étude sur l'influence de ces variables dans le domaine de l'art est rare. Cette étude a cherché à comprendre les dynamiques du trait d'intelligence émotionnelle (IE) et de l'état de *flow* dans un échantillon de danseurs portugais, à savoir, si ces deux variables sont corrélées de façon positive (H1) et si des danseurs plus expérimentés ont des niveaux plus élevés de IE et de *flow* (H2). L'échantillon fut composé de 152 danseurs, principalement des femmes (90,7%) et des étudiants de ballet (87,4%). Les danseurs ont répondu à 4 formulaires d'auto-évaluation: le TEIQue SF (concernant le trait de IE), le DFS2 (concernant le *flow*), une mesure d'évaluation sur la pratique de la danse et un questionnaire sociodémographique, tous deux conçus spécifiquement pour cette étude. Les résultats confirment que le trait de IE et l'état de *flow* sont positivement corrélés entre eux ( $R = .43$ ). Ils confirment également que les danseurs plus expérimentés ont des niveaux plus élevés d'intelligence émotionnelle, en particulier par rapport à la maîtrise de soi. L'auto-perception de *flow* semble dépendre davantage de facteurs environnementaux et situationnels, plutôt que du facteur d'expérience dans le domaine de la danse. Cette étude corrobore les associations précédemment observées entre les variables positives, et renforce également la nécessité de poursuivre les recherches sur ce type de variables en tant que promoteurs de l'optimisation de la performance, dans des contextes spécifiques à la réalisation optimal.

**Mots-clé:** Psychologie positive; intelligence émotionnelle; flow; ballet; danseurs.

## Introduction

Ballet, derived from the Italian “ballare”, is a highly technical dance modality practiced and appreciated all around the globe. Mastering ballet’s very idiosyncratic vocabulary, technique and stylistic nuances require constant and persistent practice.

It has been argued that ballet training, and the so-called ballet subculture, provide for specific personality shaping mechanisms. Such mechanisms are thought to derive from the dynamics of ballet training, such as the permanent emphasis given to technical flawlessness, emotional and physical endurance, and the rigid – yet mutable – aesthetic ideals, which should be achieved by the dancer (Chirban, & Rowan, 2017; Petrides, Niven, & Mouskounti, 2006).

As demonstrated in the next section of this paper, trait emotional intelligence and the state of flow seem to be both correlated to life satisfaction and general well-being. However, research suggests that ballet dancers are among the most unhappy and unsatisfied group of performing artists (Marchant-Haycox, & Wilson, 1992).

In this study, trait emotional intelligence, dispositional flow and its correlations to ballet practice were analysed in a sample of Portuguese ballet dancers.

### Emotional Intelligence

Emotional intelligence (EI) was first proposed in 1990 by Peter Salovey and John D. Mayer, who argued that there are adaptive, thought-favoring qualities in emotions and emotional states. The authors established EI as a set of mental skills which were divided into four general ability categories: Emotional expression and perception; Emotional assimilation; Emotional understanding; and emotional regulation, both in oneself and in others (Mayer, Salovey, Caruso, & Cherkasskiy, 2011; Salovey, & Mayer, 1990).

Five years later, Daniel Goleman’s best seller “Emotional Intelligence” brought the construct out of the scientific shadow: enormously successful among the general public, this book made EI widely known, discussed and speculated about (Mayer et al., 2011). Goleman was the first to consider EI as ultimately dependent on self-dispositions and self-perceptions. The author also considered EI to be the affective dimension of personality, despite the controversial emphasis given to other traits, such as self-control, motivation, resilience or empathy (Goleman, 1995; Locke, 2005; Mayer et al., 2011).



Following the early years of emotional intelligence, Bar-On's perspective on what he labeled as emotional-social intelligence (ESI) referred to a hierarchy of interrelated social and emotional skills and competencies which would promote intelligent, adaptive behaviors, such as independence, self-awareness or assertiveness (Bar-On, 1997).

Petrides and Furnham (2001) were the first to assimilate Goleman and Bar-On's views on the construct into what is now known as the trait – or mixed - model of emotional intelligence: This perspective perceives EI as a multidimensional, multifactorial and hierarchical personality dimension rather than a set of cognitive abilities, which can only be assessed through the subject's own perceptions and dispositions (Mayer et al., 2011; Petrides, & Furnham, 2001).

As demonstrated above, emotional intelligence evolved through the lens of two distinct phenomenological approaches: the ability model (i.e. Mayer, & Salovey, 1990) and the trait model (i.e. Petrides, & Furnham, 2001). Despite this apparent phenomenological conflict, authors from both perspectives are unanimous in the assertion that the EI theoretical framework employed is rather determined by the measure used to assess it than the other way around (Mayer et al., 2011; Petrides, Furnham, & Mavroveli, 2007; Petrides et al., 2016). In fact, the different theories of EI that emerged since 1990 must be perceived as complementary rather than contradictory (Costa, & Faria, 2014).

IQ-like, maximum performance tests, as established by Mayer and Salovey (1990) are questionable in this field of intelligence due to the fact that it is very difficult to establish objective, reliable criteria to evaluate emotional responses (Petrides et al., 2016).

Meanwhile, self-report measures (i.e. Bar-On, 1997 EQ-I; Petrides, & Furnham, 2001 TEIQue) rely exclusively on self-perceptions, and the biases of such kind of measurements are well-known, ranging from the insight ability of each individual to the role played by social expectancy (Mayer, Salovey, & Caruso, 2008; Mayer et al., 2011).

There is enough evidence to sustain that emotional intelligence is positively correlated and often a predictor of adaptive and desirable dispositions and behaviors (Mayer et al., 2011; Petrides et al., 2016). A systematic review by Petrides et al. (2016) concluded that high trait EI is positively correlated to health-promoting and prosocial behaviors, interpersonal relationship quality, romantic relationship self-satisfaction, positive parenting practices, job performance and satisfaction and leadership skills, as well as a strong predictor for adaptive behaviors in childhood and adolescence (Petrides et al., 2016). The same systematic review showed that emotional intelligence is positively correlated to self-perceptions of general well-being. This conclusion was also established

in a meta-analysis by Sánchez-Álvarez, Extremera and Berrocal (2016), who noted that this correlation was found more often in studies where self-report measures were used.

High levels of trait EI appeared to be negatively correlated to stress, anxiety and depressive symptoms in adults exposed to high levels of pressure (Martins, Ramalho, & Morim, 2010), as well as in athletes exposed to competition stress (Laborde, Brüll, Weber, & Anders, 2011; Laborde, Lautenbach, Allen, Herbert, & Achtzehn, 2014).

In summary, emotional intelligence is a positive variable strongly correlated to adaptive dispositions and behaviors. For this study, it is particularly relevant to highlight that trait EI is positively correlated to variables such as happiness, life satisfaction and general well-being (Austin, Saklofske, & Egan, 2005; Moutinho, Monteiro, Costa, & Faria, 2019; Petrides et al., 2016; Spence, Oades, & Caputi, 2004).

### Flow State

Flow is a mental state of total absorption in a pleasing task and disconnection with the surrounding environment. This state generates intense feelings of satisfaction and enjoyment, which are achieved regardless of extrinsic rewards (Csikszentmihalyi, 1990; Hefferon, & Ollis, 2006; Wilson, 2016).

Mihaly Csikszentmihalyi (1975, 1990) identified the nine characteristics of flow: Skill-challenge balance: the subject is aware of the hardships of the task, but is also aware of his/her abilities and skills; Merging of action and awareness: the surrounding environment is unified and diminished, and only the task remains as reality; Unambiguous feedback: the subject is completely aware of his/her performance quality while executing the task; Complete focus: the subject is unable to pay attention to anything but the task; Clear goals: the subject knows exactly what needs to be done; Loss of self-consciousness: self-awareness disappears, i.e. other physical and mental states (hunger, cold, pain, sadness or exhaustion) are no longer perceived; Paradox of control: the subject is perfectly aware of his/her actions but at the same time things seem to be happening spontaneously, automatically; Transformation of time: time seems to either slow down or to pass by faster than usual; Autotelic experience: the subject seems to achieve his/her very best performance. These nine characteristics of flow led some authors to label this state as a kind of normative dissociation (Butler, 2011; Thomson, & Jaque, 2012).

Experiencing flow, i.e. being often drawn in a pleasing activity, is part of what defines a satisfying life (Nakamura, & Csikszentmihalyi, 2014; Ross, & Keiser, 2014).

Research shows that certain individuals are more prone to experience flow: these individuals are referred to as *autotelic personalities*, and what seems to set them apart are the higher levels of motivation and happiness when faced with highly challenging, skill-demanding tasks, whereas non-autotelic subjects display the opposite pattern (Nakamura, & Csikszentmihalyi, 2014; Ross, & Keiser, 2014; Schmidt, Shernoff, & Csikszentmihalyi, 2014).

The experience of flow seems to rely more on personality factors than in constructs such as intelligence (Ullén et al., 2012). Research also suggests that personality factors extroversion and conscientiousness are facilitators and predictors of the autotelic experience, whereas factor neuroticism inhibits flow the most (Ullén et al., 2012). The nature and personal meaning of the flow-generating task or situation are extremely relevant as well (Baker, & MacDonald, 2013; Ullén et al., 2012; Zager Kocjan, & Avsec, 2017).

Despite what has been done in order to establish the personality correlates of the flow state, few studies have attempted to understand its correlations to trait emotional intelligence. Srinivasan and Gingras (2014) and Chirico, Serino, Cipresso, and Gaggioli (2015) found a positive correlation between high trait EI and self-perceptions of the state of flow. Marin and Bhattacharya (2013) argued that the experience of flow, especially assessed in professional pianists, is predicted by trait EI, as well as by the amount of practice in the task. Finally, in the Portuguese context, a recent study by Moutinho et al. (2019) found positive correlations between flow and trait EI, and concluded that both correlate positively to happiness.

Flow has been extensively investigated among musicians and competitive athletes and authors concluded that autotelic experiences are correlated to increases in performance achievement and self-satisfaction (Chirico et al., 2015; Norsworthy, Gorkzynski, & Jackson, 2017).

#### Ballet practice: Studies on EI and Flow

The practice of ballet seems to have an impact on personality development in children and adolescents (Bakker, 1991; Petrides et al., 2006). Some authors have theorized that certain personality profiles are attracted by ballet's dynamics, while others

speculate that ballet training itself does shape and promote certain personality dispositions (Bakker, 1991; Chirban, & Rowan, 2017). Impulsiveness is the most undesirable personality trait in ballet dancers (Bakker, 1988). A 1992 study concluded that ballet dancers are the most emotionally unstable group of performing artists, with significantly lower levels of self-esteem and trait happiness and higher levels of anxiety and hypochondriac symptoms (Marchant-Haycox, & Wilson, 1992).

Self-esteem is the most compromised personality factor in ballet dancers, especially females: this may be explained by the very strict aesthetic ideal of ballet, i.e. harmony, verticality and slenderness. Bettle, Bettle, Neumarker, and Neumarker (2001) concluded that female ballet dancers exhibit a pattern of distorted beliefs about their bodies similar to that of patients diagnosed with anorexia nervosa. A significant number of researches have classified ballet dancers as a group risk for the development of eating disorders, more so than other groups such as fashion models (Bettle et al., 2001; Cardoso, Reis, Marinho, Boing, & Guimarães, 2017; Pierce, & Daleng, 1998).

Petrides et al. (2006) analysed the correlations between the Big Five personality dimensions, trait emotional intelligence and dancing ability. Results showed a positive correlation between dancing ability and traits ambitiousness, emotional expressivity, self-motivation and sensitivity. Unsurprisingly, female ballet dancers scored lower on self-esteem and higher on neuroticism, achievement orientation and introversion, endorsing what previous studies had found (Bakker, 1988; 1991; Bettle et al., 2001; Marchant-Haycox, & Wilson, 1992).

It is important to note that male ballet dancers do not show significant differences in trait self-esteem when compared to controls, which gives us a sense of the influence of body image dynamics in female dancers (Bettle et al., 2001; Neumarker, Bettle, Neumarker, & Bettle, 2000).

In what concerns the experiences of flow among ballet dancers, Hefferon and Ollis (2006) concluded that dance provides for its own, specific facilitator and inhibitor factors for this experience: one of those unique facilitators is the story-telling and the mimicry involved in the act of dancing, i.e. the possibility to become someone else and to create and experience another reality (Flower, 2016; Hefferon, & Ollis, 2006).

Experiencing a mental state of flow does not necessarily correspond to a peak performance, and vice-versa. Hence the difficulty of assessing flow in subjective, highly personal contexts such as that of performing arts (Norsworthy et al., 2017; Wilson, 2016).

A recent study (Radell, Keneman, Mandradjieff, Adame, & Cole, 2017) concluded that beginner ballet students are more self-aware and self-conscious, and tend to engage more in comparative, self-depreciative thoughts in class. On the other hand, more experienced, advance-level dancers indicated that they prefer to focus on the movement and the music, thus avoiding negative and comparative thoughts and becoming less aware of anything but dance itself. These results suggested that more experienced dancers have a better knowledge of how to abstain from the surrounding environment and focus on the task, i.e. dancing, than their younger peers. However, the same study noted that both beginner and advanced ballet dancers show significantly lower levels of body image satisfaction (Radell et al., 2017).

At this point, the psychological constructs assessed in this study were presented and discussed, and it has been argued that both trait EI and the state of flow are correlated to general well-being and life satisfaction. There is also enough evidence that trait EI and flow are positively correlated. Moreover, it was argued that ballet dancers are particularly vulnerable in what concerns personality factors such as self-esteem, happiness and extroversion. Therefore, two hypotheses were established within this study:

H1: Trait emotional intelligence is positively correlated to experiences of flow in ballet dancers.

H2: More experienced ballet dancers present higher levels of trait EI and higher levels of flow.

## 1. Method

### 1.1. Participants

This study included 152 participants, of which 90.7% were females, and the majority of the sample belongs to the age group 15-18 (69.7%). In this study, 12.6% of participants identified themselves as professional ballet dancers, while 87.4% identified as students in either recreative or specialized ballet schools. Among the student group, 41.2% followed an articulated teaching regime<sup>1</sup> and 44.6% followed free dance courses. 30% of participants began ballet classes at age 3, and 60.7% has practiced ballet for more

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<sup>1</sup> The articulated teaching regime allows students to invest in their artistic or sports career by dividing the curriculum between official public schools and specialized, state-sponsored conservatories or centers.

than 10 years. The majority of the sample (37.2%) practices ballet from 7 to 10 hours per week, and 32.4% practices for more than 10 hours.

## 1.2. Instruments

- *Trait Emotional Intelligence Questionnaire short form* (TEIQue SF), a self-report scale developed by Petrides and Furnham (2006), adapted and validated for the Portuguese population by Carvalho, Neto and Mavroveli (2010). This scale comprises 30 items and a 7 items Likert answering scale (1=discordo totalmente; 7=concordo totalmente). The TEIQue SF covers 4 dimensions: Emotionality (i.e. «Expressar as minhas emoções com palavras não é um problema para mim.»); Sociability (i.e. «As pessoas que me são próximas queixam-se com frequência de que não as trato bem.»); Self-control (i.e. «Geralmente tenho dificuldade em controlar as minhas emoções.»); And well-being (i.e. «Geralmente não acho a vida agradável.»).

In previous studies the TEIQue SF presented excellent psychometric qualities, including strong incremental validity, and its subscales and factors show high internal consistency (Andrei, Siegling, Aloe, Baldaro, & Petrides, 2016; Cooper, & Petrides, 2010; Petrides, Pita, & Kokkinaki, 2007). In this study, the measure showed a good internal consistency (Cronbach's alpha =.81) and good correlations between the dimensions, varying from .17 (sociability x self-control) to .40 (well-being x self-control).

- *Dispositional Flow Scale adapted for physical activity* (DFS2), developed by Jackson and Eklund (2002), and translated, adapted and validated for the Portuguese population by Gouveia, Ribeiro, Marques, and Carvalho (2012). In this study, the Portuguese version of the original scale was used, including 36 items. The DFS2 includes a 5 items Likert type scale (1=nunca; 5=sempre), and concerns the 9 dimensions of flow proposed by Csikszentmihalyi (1990), for example: Skill-challenge balance (i.e. «Sinto-me desafiado/a mas acredito que as minhas capacidades estão à altura das exigências da situação.»); Clear goals (i.e. «Eu sei claramente o que quero fazer.»); and time transformation (i.e. «O tempo parece estar alterado (passa mais lento ou mais rápido).»). The DFS2 Portuguese version showed adequate psychometric qualities (Gouveia et al., 2012; Moutinho et al., 2019). In this study, the measure presented excellent internal

consistency ( $\alpha=.91$ ). the dimensions showed adequate correlations, varying from 16 (loss of self-awareness x clear goals) to .54 (time transformation x autotelic experience).

- Dance practice Questionnaire (cf. annex 1) - A 13 items independent scale designed to evaluate ballet practice, specifically developed for this study. This scale concerned individuals': years of practice (i.e. «Há quantos anos pratica dança clássica?»); time spent dancing weekly (i.e. «Atualmente, quanto tempo por semana dedica à dança clássica (aulas, ensaios, atuações)?»); and motivations to dance (i.e. «O que é que o/a motiva a praticar dança clássica atualmente?»).

- Sociodemographic Questionnaire (cf. annex 1) - a 4 items questionnaire pertaining to assess gender, age category, academic grade, and current living in the original city.

### 1.3.Procedure

The present study was analysed and approved by the Reitoria da Universidade do Porto (cf. annex 2) in order to guarantee that the objectives, method and data treatment of this investigation follow the Regulamento Geral sobre a Proteção de Dados (RGPD).

The data for this study was collected from April 2019 to June 2019. Initially, ballet schools and conservatories in Porto district, Portugal were contacted via e-mail, and every invitation to participate directed at schools was accompanied by a formal letter where the study was described, and all the ethical principles were assured (cf. annex 3).

Two informed consent documents were elaborated: one for underage participants and another for participants over 18 (cf. annex 4), and only individuals who presented the informed consent signed could participate in this study. Each participant was guaranteed confidentiality and anonymity of the data collected and the right to leave the study when desired, without any consequences. Participants were also given the author's personal e-mail address so that access to general data or exposure of any doubts or concerns could be guaranteed.

The criteria to participate in this study included: to practice ballet for at least 1 year by the time the study was being implemented and to be at least 15 years old, or complete 15 years old in the current civil year (2019).

The questionnaires were administered collectively after ballet classes, and the participants were met by the investigator and a University of Porto collaborator in their respective dance schools. The administrations took 20 minutes in average.

This study hypothesized that experienced dancers would display higher trait EI and higher flow. Therefore, in order to explore this possibility, it was established that more experienced dancers would be those who practice for more than 10 years, those who perform more often (i.e. at least once every three months) and those who engage in ballet-related activities for more than 10 hours per week. Ultimately, the participants who followed articulated dance courses must be regarded as more experienced than those who followed free dance courses, due to the daily amount of practice involved in professionalizing artistic teaching.

The statistical analysis was performed using SPSS for Windows, version 25. In terms of data analysis, preliminary analyses were conducted to obtain descriptive statistics to confirm the assumption of the variables' normal distribution. Cronbach's alpha was used to determine each instrument's internal consistency, and the Pearson product-moment correlation coefficient was performed to explore correlations between the main variables assessed. In order to explore differential analysis between groups, several ANOVA were conducted and the Bonferroni Post-hoc Test was performed when testing differences between three or more groups.

## 2. Results

The first conclusion met by this study was that trait emotional intelligence and dispositional flow were significantly correlated among ballet dancers (cf. annex 5, Table 1). The total scores of the TEIQue SF and the DFS2 showed a positive correlation ( $r = .43$ ), and every dimension of the TEIQue SF correlated to the total score of the DFS2 and to every dimension of the flow measure, except time transformation. The strongest correlation between the dimensions of the two instruments was found between well-being and challenge-skill balance ( $r = .36$ ).

In what concerns the differential analysis of the variables assessed in this study, differences were found regarding the academic level of participants (cf. annex 5, Table 2): college students or graduated individuals showed higher levels of trait EI ( $M=155.75$ ,  $SD=18.47$ ) compared to middle school ( $M=142.86$ ,  $SD=20.92$ ) and secondary school students ( $M=141.01$ ,  $SD=16.48$ ,  $F(2,145)=8.14$ ,  $p=.01$ ). Explicitly, college students



scored higher than secondary students in emotionality ( $M=5.27$ ,  $SD=1.00$  vs.  $M=4.86$ ,  $SD=.75$ ,  $F(2,145)=3.07$ ,  $p=.046$ ) and well-being ( $M=5.72$ ,  $SD=.75$  vs.  $M=5.20$ ,  $SD=.96$ ,  $F(2,145)=3.57$ ,  $p=.032$ ), and higher on self-control than middle school students ( $M=4.79$ ,  $SD=.92$  vs.  $M=4.13$ ,  $SD=1.17$ ,  $F(2,145)=5.69$ ,  $p=.019$ ).

Meanwhile, middle school students ( $M=132.49$ ,  $SD=15.87$ ) displayed higher levels of flow than secondary school students ( $M=123.50$ ,  $SD=16.55$ ,  $F(2,145)=4.99$ ,  $p=.012$ ; cf. annex 5, Table 2). Finally, secondary school students exhibited lower concentration on task ( $M=13.23$ ,  $SD=2.84$ ) than middle ( $M=14.58$ ,  $SD=2.43$ ,  $F(2,145)=5.28$ ,  $p=.039$ ) and college students ( $M=14.73$ ,  $SD=2.50$ ,  $F(2,145)=5.28$ ,  $p=.021$ ). This group displayed the same tendency in the dimension autotelic experience ( $M_{col}=18.08$ ,  $SD=1.68$ ,  $M_{sec}=16.45$ ,  $SD=3.39$ ,  $M_{mid}=18.32$ ,  $SD=2.22$ ,  $F(2,145)=7.19$ ,  $p=.017$ ) and in the dimension sense of control ( $M_{col}=13.63$ ,  $SD=2.16$ ,  $M_{sec}=13.38$ ,  $SD=2.37$ ,  $M_{mid}=14.81$ ,  $SD=2.40$ ,  $F(2,145)=4.69$ ,  $p=.009$ ; cf. annex 5, Table 2).

This investigation also concluded that participants who practice ballet for more than 10 years demonstrated higher levels of self-control when compared to less experienced dancers (i.e. those who dance for less than 10 years) ( $M=4.41$ ,  $SD=1.02$  vs.  $M=4.07$ ,  $SD=1.03$ ,  $F(1,148)=4.18$ ,  $p=.047$ ; cf. annex 5, Table 3). The same tendency was verified in the flow dimension unambiguous feedback ( $M=15.32$ ,  $SD=2.46$  vs.  $M=14.17$ ,  $SD=2.69$ ,  $F(1,148)=7.32$ ,  $p=.008$ ; cf. annex 5, Table 3).

Moreover, participants who spend 7 to 10 hours per week in ballet classes, rehearsals or performances showed higher levels of autotelic experience than those who practice for more than 10 hours per week ( $M=16.25$ ,  $SD=3.40$  vs.  $M=17.60$ ,  $SD=2.75$ ,  $F(2,123)=4.29$ ,  $p=.033$ ; cf. annex 5, Table 4).

Concerning stage performance frequency, participants who haven't performed for more than a year and participants who perform at least once every three months by the time of the study displayed higher levels of flow. Differences were present when the group of participants who haven't performed for more than 1 year ( $M=18.20$ ,  $SD=1.63$ ), at least once in a year ( $M=18.04$ ,  $SD=2.31$ ) and at least in each 3 months ( $M=18.02$ ,  $SD=2.42$ ) was compared to participants who perform at least twice every year ( $M=15.44$ ,  $SD=3.67$ ,  $F(3,141)=9.38$ ,  $p=.001$ ; cf. annex 5, Table 5) in autotelic experience. Participants who perform at least twice every year also scored lower on dimensions challenge-skill balance and time transformation (cf. annex 5, Table 5). Both groups (i.e. those who haven't performed for more than a year ( $M=130.61$ ,  $SD=10.11$ ) and those who

perform very often ( $M=130.66$ ,  $SD=17.08$ ) presented more perceptions of flow than participants who perform twice in a year ( $M=120.27$ ,  $SD=15.87$ ,  $F(3,141)=.006$ ,  $p<.005$ )

Participants who followed free dance courses revealed higher levels of trait EI well-being ( $M=5.52$ ,  $SD=.99$  vs.  $M=5.05$ ,  $SD=1.02$ ,  $F(1,125)=6.88$ ,  $p=.010$ ) and self-control ( $M=4.37$ ,  $SD=.91$  vs.  $M=3.91$ ,  $SD=1.07$ ,  $F(1,125)=6.88$ ,  $p=.010$ ; cf. annex 5, Table 6). The same group presented significantly higher levels of flow ( $M=130.83$ ,  $SD=14.14$  vs.  $M=123.30$ ,  $SD=16.93$ ,  $F(1,125)=7.34$ ,  $p=.008$ ), in the dimensions autotelic experience ( $M=18.61$ ,  $SD=1.72$  vs.  $M=16.10$ ,  $SD=3.53$ ,  $F(1,125)=25.32$ ,  $p<.001$ ), concentration on task ( $M=14.57$ ,  $SD=2.65$  vs.  $M=13.17$ ,  $SD=2.73$ ,  $F(1,125)=8.66$ ,  $p=.004$ ) and time transformation ( $M=16.22$ ,  $SD=3.19$  vs.  $M=14.38$ ,  $SD=3.21$ ,  $F(1,125)=10.48$ ,  $p=.002$ ), compared to participants who followed articulated dance courses.

Finally, significant differences were found in favour of the participants who are, were or intend to be ballet teachers in trait EI ( $M=149.70$ ,  $SD=18.45$  vs  $M=140.95$ ,  $SD=18.37$ ,  $F(1,149)=8.44$ ,  $p=.004$ ) and in self-control ( $M=4.54$ ,  $SD=.98$  vs  $M=4.06$ ,  $SD=1.02$ ,  $F(1,149)=8.63$ ,  $p=.004$ ; cf. annex 5, Table 7). Those participants also displayed higher levels of flow in every DFS2 dimension, except loss of self-consciousness ( $M=11.26$ ,  $SD=3.78$  vs.  $M=10.94$ ,  $SD=3.39$ ,  $F(1,149)=.30$   $p=.583$ ) and time transformation ( $M=15.75$ ,  $SD=2.91$  vs.  $M=14.88$ ,  $SD=3.42$ ,  $F(1,149)=2.81$ ,  $p=.096$ ).

### 3. Discussion

The present study intended to deepen the understanding of the trait emotional intelligence and flow's dynamics in a sample of Portuguese ballet dancers.

The first hypothesis established in this research was that trait EI and dispositional flow were positively correlated among ballet dancers. As expected according to the available literature, this hypothesis was confirmed by the results which showed a strong correlation between the TEIQue SF and the DFS2. This result is strongly corroborated by previous studies (Chirico et al., 2015; Marin & Bhattacharya, 2013; Moutinho et al., 2019; Srinivasan & Gingras, 2014).

It was also hypothesized that more experienced dancers would present higher levels of trait EI and dispositional flow. This hypothesis was supported by evidence that regular practice and experience in an activity are correlated to flow proneness (Marin &

Bhattacharya, 2013; Radell et al., 2017), and that trait EI is a predictor of flow (Marin & Bhattacharya, 2013; Moutinho et al., 2019).

In this study, experience as a dancer was indeed a differential factor of trait emotional intelligence: college or graduated students (i.e. elder participants) presented higher trait EI than their younger counterparts in three out of four dimensions (self-control, emotionality and well-being). Differences in self-control were also found in favour of participants who practice ballet for more than 10 years, and in favour of those who claimed a desire to teach ballet, or were ballet teachers at the moment. Finally, dancers who attended free dance courses revealed significantly higher levels of self-control and well-being in detriment of those who followed professionalizing courses.

Evidently, individuals practice in order to gain control over their skill and performance. Therefore, it seems reasonable to claim that any experienced athlete or artist possesses higher levels of control over the task than beginner counterparts. As previously analysed in this study, self-control is considered one of the personality dispositions shaped and endorsed through ballet training (Chirban & Rowan, 2017). Thus, impulsive individuals are more prone to withdraw from ballet (Petrides et al., 2006). As a result, higher levels of self-control must be expected from those who practice ballet for a long time.

College students, or dancers who have already graduated, displayed higher self-control, higher emotionality and higher well-being. This result may possibly be associated to the fact that these participants correspond to the older part of the sample, and, to some extent, to those who practice ballet for longer, and for the enjoyment of dancing as a recreative activity rather than a career ambition. Subsequently, it may be argued that older individuals possess higher insight capacity and higher self-concept than their younger counterparts.

Interestingly, dancers who follow free dance courses showed higher levels of well-being. This result may be explained by the amount of pressure and competition stress felt by articulated regime students, who might as well be classified as elite athletes and elite performers. Moreover, free dance courses demand personal investment, with lowered chances of achieving a professional career as a ballet dancer. Thus, it can perhaps be argued that those who follow free dance courses do it almost uniquely for the sake of dancing, as a pleasant activity, which more likely will elicit the sense of well-being.

Regarding the experience of flow, this study found that middle and secondary school students (i.e. the younger participants) exhibit more paradox of control. While the

academic level may suggest, to some extent, the age group of participants, age does not necessarily correlate to experience in ballet: for instance, 30% of participants began ballet at age 3 and 16% began at age 4. Therefore, it can be said that the present sample is very experienced over all, thus, it would be misleading to assume that middle school or secondary school participants are less experienced than college students.

The participants who practice for more than 10 years showed higher levels of unambiguous feedback, and this result meets the assumption that experience in an activity is a differential factor for the self-perceptions of flow.

Dancers who engage in ballet-related activities for 7 to 10 hours per week displayed more autotelic experience than those who practice for more than 10 hours or less than 7. It can be argued that those who dance for more than 10 hours tend to disengage from the true enjoyment of ballet due to stress, fatigue or simply the normalization of the act of dancing, i.e. it becomes part of dancers' daily routine. Meanwhile, to dance for less than 7 hours per week might be not enough for subjects to enter the zone, given the fact that certain dimensions of flow, such as unambiguous feedback or clear goals establish that there must be enough knowledge of the task in order to perform effortlessly.

It is interesting to note that dancers who haven't performed for an audience for a long time and dancers who perform very often both showed higher levels of autotelic experience than those who perform, on average, twice a year. One possible explanation for this result may be that the participants who haven't performed for more than 1 year are also those who have become ballet teachers. Thus, it can be speculated that participants who haven't stepped on a stage for a long time are just as experienced as those who perform very often.

Moreover, in this study dancers who follow free dance courses displayed higher levels of autotelic experience, concentration on task and time transformation than the articulated course students. Once again, the pressure and stress competition may be influencing the way dancers enjoy their dancing: Nakamura and Csikszentmihalyi (2014) proposed that challenge-skill balance, clear goals and unambiguous feedback are the antecedents and the proximal conditions for the experience of flow, and Heferon and Ollis (2006) argued on the particular relevance of the dimension challenge-skill balance for ballet dancers. It is clear that such proximal conditions may be either compromised or endorsed under stressor situations (Flower, 2016). In turn, when it comes to the autotelic experience of ballet dancers, the flow dimension loss of self-consciousness is defined as the disengagement of the individual from ego, which includes, necessarily,

disengagement from preoccupations regarding body image, self-depreciative or comparative thoughts. Besides, dancers who follow free dance courses must invest private money and large amounts of time in order to succeed in this artform, plus, free dance courses have primarily a recreative focus. Ultimately, this recreative enjoyment of the task with disregard for the rewards obtained are what may define and enhance dancers' possibility of experiencing flow.

This was the first study where trait emotional intelligence and dispositional flow were analysed in a specific sample of ballet dancers. It represents a significant step towards the growing need for further research on the ballet subculture, specifically on the affective and dispositional factors involved in the experience of dancing and how psychology may help improve well-being and satisfaction among this group of performing artists.

The present study had limitations that further research should continue to address. The biggest limitation of this research was the homogeneity of the sample: for instance, 90.7% of participants were females and 87.4% were ballet students. The present sample was too small and too undiversified to be considered representative of the ballet community in Portugal.

This study strengthens the need for further investigation on the associations between positive variables in the context of performing arts. Furthermore, the influence of ballet training on personality development isn't clear yet. This paper suggests the investment in longitudinal, cross-sectional large sample researches so that personality shaping mechanisms in ballet may be better understood. Moreover, longitudinal studies would allow researchers to perceive the predictive power of certain variables, such as trait emotional intelligence, on other psychological factors or even in career achievements.

The asymmetry of the sample unabled the researchers to analyse gender groups' specificities in the ballet subculture: gender differences are one of the most pertinent issues to investigate in this domain, thus, this paper suggests that further researches must make an effort to stick to a balanced and representative sample in terms of gender diversity. Differences between professionals and students and diversified age groups would be of interest as well. Additionally, differential analysis between distinct teaching modalities would be of interest, especially given the results of this research.

Finally, this article argues that the inclusion of objective measurement of performance achievements would be appealing, so that the influence of psychological variables such as trait EI or flow could be reported.

#### 4. Conclusion

This study's results reinforce that positive variables, such as trait EI and flow, are positively correlated. This study also concludes that more experienced ballet dancers display higher levels of trait emotional intelligence, especially self-control. Results regarding flow do not suggest the same tendency, however, it is concluded that the experience of the state of flow is more dependent on conditions and characteristics of the task and of the surrounding environment than on experience itself.

Associations between positive variables must help individuals and organizations to further understand how to improve psychological well-being and satisfaction through the experience of the absorption in pleasing activities.

Another conclusion of this research is that the proximal conditions for the experience of flow may be compromised in strict ballet articulated teaching regimes. Therefore, this study highlights the need for ballet conservatories and schools to guarantee masters and students adequate access to knowledge on the power, the mechanisms and the conditions that enable for the experience of flow.

Last, but not least, the verified association between flow and trait EI as positive variables must be translated into the need for positive emotional stimuli among the specific group of performing artists assessed in this study, but it must also be generalized to all the dimensions and aspects of day-to-day life. External factors, i.e. adequate, positive parenting practices, positive teaching styles and comprehensive, empathic communication in academic, sports and artistic environments are essential for the development of emotional intelligence and its multiple factors.

## References

- Andrei, F., Siegling, A. B., Aloe, A. M., Baldaro, B., & Petrides, K. V. (2016). The incremental validity of the Trait Emotional Intelligence Questionnaire (TEIQue): A systematic review and meta-analysis. *Journal of Personality Assessment, 98*, 261-276.
- Austin, E. J., Saklofske, D. H., & Egan, V. (2005). Personality, well-being and health correlates of trait emotional intelligence. *Personality and Individual Differences, 38*, 547-558.
- Baker, F. A., & MacDonald, R. A. (2013). Flow, identity, achievement, satisfaction and ownership during therapeutic songwriting experiences with university students and retirees. *Musicae Scientiae, 17*(2), 131-146.
- Bakker, F. C. (1988). Personality differences between young dancers and non-dancers. *Personality and Individual Differences, 9*, 121-131.
- Bakker, F.C. (1991). Development of personality in dancers: A longitudinal study. *Personality and Individual Differences, 12*, 671-681.
- Bar-On, R. (1997). *The Emotional Quotient Inventory (EQ-i): Technical manual*. Toronto, Canada: Multi-Health Systems.
- Bettle, N., Bettle, O., Neumarker, U., & Neumarker, K.J. (2001). Body image and self-esteem in adolescent ballet dancers. *Perceptual and Motor Skills, 93*, 297-309.
- Butler, L. (2011). Must dissociation be unusual? *Journal of Trauma & Dissociation, 12*, 454-456.
- Cardoso, A., Reis, N., Marinho, A., Boing, L., & Guimarães, A. C. (2017). Study of body image in professional dancers: A systematic review. *Revista Brasileira de Medicina do Esporte, 23*, 335-340.
- Carvalho, D., Neto, F., & Mavroveli, S. (2010). Trait emotional intelligence and disposition for forgiveness. *Psychological Reports, 107*(2), 526-534.

Chirban, S. A., & Rowan, M. R. (2017). Performance psychology in ballet and modern dance. In R. J. Schinke & D. Hackfort (Eds.), *Psychology in professional sports and the performing arts: Challenges and strategies* (pp. 259-274). New York, NY, US: Routledge/Taylor & Francis Group.

Chirico, A., Serino, S., Cipresso, P., & Gaggioli, A. (2015). When music “flows”. State and trait in musical performance, composition and listening: A systematic review. *Frontiers in Psychology, 6*:906.

Cooper, A., & Petrides, K. V. (2010). A psychometric analysis of the Trait Emotional Intelligence Questionnaire–Short Form (TEIQue–SF) using item response theory. *Journal of Personality Assessment, 92*, 449-457.

Costa, A., & Faria, L. (2014). Avaliação da inteligência emocional: Relação entre medidas de desempenho e de autorrelato. *Psicologia: Teoria e Pesquisa, 30*(3), 339-346.

Csikszentmihalyi, M. (1975). *Beyond boredom and anxiety*. San Francisco, Jossey-Bass.

Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. New York, Harper & Row.

Flower, L. (2016). “My day-to-day person wasn’t there; it was like another me”: A qualitative study of spiritual experiences during peak performance in ballet dance. *Performance Enhancement & Health, 4*, 67-75.

Goleman, D. (1995). *Emotional intelligence*. New York, NY: Bantam Books.

Gouveia, M. J., Ribeiro, J. L., Marques, M. M., & Carvalho, C. M. (2012). Validity and reliability of the Portuguese version of the Dispositional Flow Scale-2 in exercise. *Revista de Psicología Del Deporte, 21*(1), 81-88.

Hefferon, K. M., & Ollis, S. (2006). ‘Just clicks’: An interpretive phenomenological analysis of professional dancers’ experience of flow. *Research in Dance Education, 7*, 141-159.



Jackson, S. A., & Eklund, R. C. (2002). Assessing flow in physical activity: The Flow State Scale-2 and Dispositional Flow Scale-2. *Journal of Sport & Exercise Psychology*, 24, 133-150.

Laborde, S., Brüll, A., Weber, J., & Anders, L. S. (2011). Trait emotional intelligence in sports: A protective role against stress through heart rate variability? *Personality and Individual Differences*, 51, 23–27.

Laborde, S., Lautenbach, F., Allen, M. S., Herbert, C., & Achtzehn, S. (2014). The role of trait emotional intelligence in emotion regulation and performance under pressure. *Personality and Individual Differences*, 57, 43–47.

Locke, E. A. (2005). Why emotional intelligence is an invalid concept. *Journal of Organizational Behavior*, 26, 425-431.

Marchant-Haycox, S.E., & Wilson, G.D. (1992). Personality and stress in performing artists. *Personality and Individual Differences*, 13, 1061-1068.

Marin, M. M., & Bhattacharya, J. (2013). Getting into the musical zone: Trait emotional intelligence and amount of practice predict flow in pianists. *Frontiers in Psychology*, 4:853.

Martins, A., Ramalho, N., & Morin, E. (2010). A comprehensive meta-analysis of the relationship between emotional intelligence and health. *Personality and Individual Differences*, 49, 554–564.

Mayer, J. D., Salovey, P., & Caruso, D. R. (2008). Emotional intelligence: New ability or eclectic traits? *American Psychologist*, 63, 503–517.

Mayer, J. D., Salovey, P., Caruso, D., & Cherkasskiy, L. (2011). Emotional intelligence at 20 Years. In R. J. Sternberg, & S. B. Kaufman (Eds.), *The Cambridge Handbook of Intelligence*. Cambridge: Cambridge University Press.

Moutinho, H., Monteiro, A., Costa, A., & Faria, L. (2019). Papel da inteligência emocional, felicidade e *flow* no desempenho académico e bem-estar subjetivo em

contexto universitário. *Revista Iberoamericana de Diagnóstico y Evaluación Psicológica*, 52(3), 99-114.

Nakamura, J., & Csikszentmihalyi, M. (2014). The concept of flow. In M. Csikszentmihalyi (Ed.), *Flow and the foundations of positive psychology*. Dordrecht: Springer.

Neumarker, K.J., Bettel, N., Neumarker, U., & Bettel, O. (2000). Age and gender-related psychological characteristics of adolescent ballet dancers. *Psychopathology*, 33, 137-142.

Norsworthy, C., Gorkzynski, P., & Jackson, S. (2017). A systematic review of flow training on flow states and performance in elite athletes. *Graduate Journal of Sport, Exercise & Physical Education Research*, 6, 16-28.

Petrides, K. V., & Furnham, A. (2001). Trait emotional intelligence: Psychometric investigation with reference to established trait taxonomies. *European Journal of Personality*, 15, 425– 448.

Petrides, K. V., & Furnham, A. (2006). The role of trait emotional intelligence in a gender-specific model of organizational variables. *Journal of Applied Social Psychology*, 36(2), 552-569.

Petrides, K. V., Furnham, A., & Mavroveli, S. (2007). Trait emotional intelligence: Moving forward in the field of EI. In G. Matthews, M. Zeidner, & R. D. Roberts (Eds.), *Series in affective science. The science of emotional intelligence: Knowns and unknowns* (pp. 151-166). New York: Oxford University Press.

Petrides, K. V., Mikolajczak, M., Mavroveli, S., Sanchez-Ruiz, M. J., Furnham, A., & González, J. C. (2016). Developments in trait emotional intelligence research. *Emotion Review*, 8(4), 335-341.

Petrides, K. V., Niven, L., & Mouskounti, T. (2006). The trait emotional intelligence of ballet dancers and musicians. *Psicothema*, 18, 101-107.

Petrides, K. V., Pita, R., & Kokkinaki, F. (2007). The location of trait emotional intelligence in personality factor space. *British Journal of Psychology*, 98, 273-289.

- Pierce, E. F., & Daleng, M. L. (1998). Distortion of body image among elite female dancers. *Perceptual and Motor Skills*, 3(1), 66-70.
- Radell, S. A., Keneman, M. L., Mandradjieff, M., Adame, D. D., & Cole, S. P. (2017). Comparison study of body image satisfaction between beginning and advanced-level female ballet students. *Journal of Dance Medicine and Science*, 21(4), 135-143.
- Ross, S. R., & Keiser, H. N. (2014). Autotelic personality through a five-factor lens: Individual differences in flow-propensity. *Personality and Individual Differences*, 59, 3-8.
- Salovey, P., & Mayer, J. D. (1990). Emotional intelligence. *Imagination, Cognition, and Personality*, 9, 185–211.
- Sánchez-Álvarez, N., Extremera, N., & Berrocal, P. F. (2016). The relation between emotional intelligence and subjective well-being: A meta-analytic investigation. *The Journal of Positive Psychology*, 11(3), 276-285.
- Schmidt, J. A., Shernoff, D. J., & Csikszentmihalyi, M. (2014). Individual and situational factors related to the experience of flow in adolescents. In M. Csikszentmihalyi (Ed.), *Applications of flow in human development and education*. Dordrecht: Springer Nature.
- Spence, G., Oades, L. G., & Caputi, P. (2004). Trait emotional intelligence and goal self-integration: Important predictors of emotional well-being? *Personality and Individual Differences*, 37, 449-461.
- Srinivasan, N., & Gingras, B. (2014). Emotional intelligence predicts individual differences in proneness for flow among musicians: The role of control and distributed attention. *Frontiers in Psychology*, 5:608.
- Thomson, P., & Jaque, S. V. (2012). Dancing with the muses: Dissociation and flow. *Journal of Trauma and Dissociation*, 13, 478-489.
- Ullén, F., Manzano, O., Almeida, R., Magnusson, P. K., Pedersen, N. L., Nakamura, J., ... Madison, G. (2012). Proneness for psychological flow in everyday life: Associations with personality and intelligence. *Personality and Individual Differences*, 52(2), 167-172.

Wilson, E. (2016). Flow and performance competency in modern and ballet dancers (unpublished master's thesis). Available in Scripps Senior Theses (paper 725) [http://scholarship.claremont.edu/scripps\\_theses/725](http://scholarship.claremont.edu/scripps_theses/725).

Zager Kocjan, G., & Avsec, A. (2017). Bringing the psychology of situations into flow research: Personality and situation characteristics as predictors of flow. *Psihologijske Teme*, 26(1), 195-210.

# Annexes

## Annex 1 – Instruments

### **Instruções Gerais:**

O objetivo deste questionário é adquirir informações acerca do/a participante, importantes para a análise comparativa e estatística.

As respostas são absolutamente anónimas e confidenciais e jamais serão tratadas individualmente, isto é, os investigadores apenas trabalharão com os dados globais para posterior análise estatística e comparativa.

Para cada questão, por favor, assinale a resposta que mais se lhe adequa ou com a qual mais se identifica.

Não existem respostas certas ou erradas, pois o que importa é a sua opinião sincera e espontânea, pelo que deverá assinalar aquelas que crê mais se aproximarem da sua realidade.

Algumas das questões poderão implicar que assinale mais do que uma resposta (parte II do primeiro questionário).

Algumas questões exigem que escreva no espaço indicado.

**Muito obrigada pela sua importante colaboração!**

#### **I - Dados sociodemográficos**

1. Sexo/género: \_\_\_\_
2. Idade: 15-18 anos \_\_\_\_ 19-21 anos \_\_\_\_ 22-25 anos \_\_\_\_ 26-30 anos \_\_\_\_ 31-40 anos \_\_\_\_ 41-50 anos \_\_\_\_ 51-60 anos \_\_\_\_ 61-65 anos \_\_\_\_ mais de 65 anos \_\_\_\_
3. Atualmente resido na minha cidade-natal: Sim \_\_\_\_ Não \_\_\_\_
4. Grau de escolaridade:  
1º ciclo \_\_\_\_ 2º ciclo \_\_\_\_ 3º ciclo \_\_\_\_ Ensino secundário \_\_\_\_ Ensino superior \_\_\_\_

#### **II – Dados sobre a prática de dança**

1. Com que idade começou a praticar dança clássica? \_\_\_\_ anos

2. Há quantos anos pratica dança clássica?  
Há pelo menos 1 ano \_\_\_ pelo menos 3 anos \_\_\_ 4-6 anos \_\_\_ 7-10 anos \_\_\_ há mais de 10 anos \_\_\_ (especificar) \_\_\_
3. Enquanto bailarino/a identifica-se como: estudante \_\_\_ profissional \_\_\_  
a. [Estudante] frequenta: curso livre \_\_\_ ensino articulado \_\_\_ curso superior \_\_\_  
b. [Profissional] a dança é uma profissão: em *part time* \_\_\_ a tempo integral \_\_\_
4. Qual método segue atualmente? Método inglês (RAD) \_\_\_ método russo (Vaganova) \_\_\_ método italiano (Cecchetti) \_\_\_ método americano (Balanchine) \_\_\_ outro \_\_\_ (especificar) \_\_\_\_\_
5. Para além da dança clássica também pratica: dança contemporânea \_\_\_ jazz \_\_\_ hip hop \_\_\_ outra modalidade \_\_\_ (especificar) \_\_\_\_\_
6. Tem alguma doença ou condição física que influencia a forma como vivencia a dança? não \_\_\_ sim \_\_\_ (especificar) \_\_\_\_\_
7. Alguma vez se lesionou enquanto dançava? Não \_\_\_ Sim \_\_\_ (Especificar) \_\_\_\_\_
8. Atualmente, quanto tempo por semana dedica à dança clássica (aulas, ensaios, atuações)?  
1 hora por semana \_\_\_ 2-3 horas por semana \_\_\_ 4-6 horas por semana \_\_\_ 7-8 horas por semana \_\_\_ 9-10 horas por semana \_\_\_ mais do que 10 horas por semana \_\_\_ (especificar) \_\_\_\_\_
9. Atualmente, com que frequência atua num palco, para uma audiência?  
Pelo menos 2 vezes por mês \_\_\_ pelo menos 1 vez por mês \_\_\_ pelo menos 1 vez a cada 3 meses \_\_\_ pelo menos 2 vezes por ano \_\_\_ 1 vez por ano \_\_\_ não danço para um público há mais de 1 ano \_\_\_
10. Já participou ou participará em breve em competições nacionais ou internacionais de dança clássica? Não \_\_\_ Sim \_\_\_
11. Já deu, dá ou pretende dar aulas de dança clássica? Sim \_\_\_ Não \_\_\_
12. Na sua prática atual de dança clássica, em quais destes aspetos sente que se destaca? [Se escolher mais que uma resposta assinale os itens numericamente, atribuindo maior valor numérico ao item onde sente que mais se destaca]  
a. Musicalidade \_\_\_  
b. Expressão artística \_\_\_  
c. Técnica corporal (inclui a precisão dos movimentos, agilidade e flexibilidade) \_\_\_
13. O que é que o/a motiva a praticar dança clássica atualmente? [Se escolher mais que uma resposta assinale os itens numericamente, de modo a estabelecer uma hierarquia de motivações, atribuindo maior valor numérico ao item que mais o/a motiva]  
a. Quero tornar-me profissional e dançar numa grande companhia \_\_\_  
b. Quero tornar-me exímio/a na técnica de dança clássica, participar em competições nacionais e internacionais e obter reconhecimento a partir daí \_\_\_  
c. Quero dançar para o maior número possível de audiências e transmitir histórias e emoções com o movimento, através da música, independentemente das recompensas materiais \_\_\_  
d. Adoro dançar e encaro a dança, acima de tudo, como uma atividade de lazer prazerosa e satisfatória \_\_\_



## Annex 2 – Rectorate decision

Nome	Alexandra Rafaela Carneiro Martins
Nº Mecanográfico	201404827
Unidade Orgânica	Faculdade de Psicologia e de Ciências da Educação (FPCEUP)
Título	Não disponível
Nº de Ticket	2018121715000206

#### Sumário do Pedido

Para a realização da sua dissertação de Mestrado, no âmbito da frequência do Mestrado Integrado em Psicologia da FPCEUP, pretende a requerente aferir as relações entre dois constructos psicológicos – a autoeficácia emocional enquanto traço e o estado mental de *flow* – com a prática de dança clássica. Para tal, será solicitado o preenchimento de quatro questionários a participantes que preencham duas condições: ter idade igual ou superior a 15 anos e praticar dança clássica há pelo menos 1 ano.

Os dados a recolher serão, para além dos relativos à prática de dança, os seguintes: sexo/género; idade (solicitada por escalões); grau de escolaridade (solicitado por escalões); se o participante se encontra a dar seguimento à sua carreira numa cidade que não a de origem. Os dados terão como único intuito a realização de análises estatísticas através de comparações de valores médios entre variáveis, correlações, regressões, análises fatoriais e alfa de Cronbach.

Será solicitado o consentimento dos participantes (ou dos seus encarregados de educação no caso de menores de idade), nos termos dos artigos 6.º/1/a) e 7.º do Regulamento Geral sobre a Proteção de Dados.

#### Síntese do parecer da Encarregada de Proteção de Dados

Atentando ao exposto, somos do parecer que os riscos para os direitos, liberdades e garantias dos potenciais participantes no estudo se revelam baixos, seja pela natureza pouco intrusiva das questões que lhes são formuladas, seja pelas residuais probabilidades de estes serem identificados a partir dos dados recolhidos. Deste modo, somos do parecer que poderá ser realizado o tratamento de dados pessoais aqui descrito, uma vez que a requerente cumpra com as diretivas indicadas no parecer da Encarregada da Proteção de Dados.

#### Decisão Reitoral

Uma vez analisado o pedido em questão e tendo em consideração o parecer da Encarregada da Proteção de Dados da Universidade do Porto com a referência R-16/2019:

Autorizo

Não Autorizo

O Reitor

  
António de Sousa Pereira

**PARECER R-16/2019**

Nome	Alexandra Rafaela Carneiro Martins
Nº Mecanográfico	201404827
Unidade Orgânica	Faculdade de Psicologia e de Ciências da Educação (FPCEUP)
Título	Não disponível
Ticket Nº	2018121715000206

**Sumário do Pedido**

Para a realização da sua dissertação de Mestrado, no âmbito da frequência do Mestrado Integrado em Psicologia da FPCEUP, pretende a requerente aferir as relações entre dois constructos psicológicos – a autoeficácia emocional enquanto traço e o estado mental de *flow* – com a prática de dança clássica. Para tal, será solicitado o preenchimento de quatro questionários a participantes que preencham duas condições: ter idade igual ou superior a 15 anos e praticar dança clássica há pelo menos 1 ano. Os dados a recolher serão, para além dos relativos à prática de dança, os seguintes: sexo/género; idade (solicitada por escalões); grau de escolaridade (solicitado por escalões); se o participante se encontra a dar seguimento à sua carreira numa cidade que não a de origem. Os dados terão como único intuito a realização de análises estatísticas através de comparações de valores médios entre variáveis, correlações, regressões, análises fatoriais e alfa de Cronbach.

Será solicitado o consentimento dos participantes (ou dos seus encarregados de educação no caso de menores de idade), nos termos dos artigos 6.º/1/a) e 7.º do Regulamento Geral sobre a Proteção de Dados.

**Conclusões**

Atentando ao exposto, somos do parecer que os riscos para os direitos, liberdades e garantias dos potenciais participantes no estudo se revelam baixos, seja pela natureza pouco intrusiva das questões que lhes são formuladas, seja pelas residuais probabilidades de estes serem identificados a partir dos dados recolhidos. Deste modo, somos do parecer que poderá ser realizado o tratamento de dados pessoais aqui descrito, uma vez que a Requerente siga as seguintes diretivas:

- (1) Substituir o documento "Anexo\_II\_\_\_consentimento\_informado\_-\_2\_versões" pelo documento em anexo;
- (2) Armazenar a documentação em papel, em armários fechados à chave em locais de acesso restrito;
- (3) Manter os consentimentos num local geograficamente distinto das respostas aos inquéritos.

**Anexos**

Anexo 1	Consentimento_revisto
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a Encarregada da Proteção de Dados da  
Universidade do Porto

  
Doutora Susana Rodrigues Pereira

Annex 3 – Presentation letter directed at ballet schools

Porto, \_\_ de dezembro de 2018

Exmo. Sr.<sup>ª</sup>. Diretora,

Serve o presente documento para solicitar a participação da [nome da instituição] na investigação que me encontro a desenvolver, no quadro da dissertação do Mestrado Integrado em Psicologia (MIPSI) da Faculdade de Psicologia e de Ciências da Educação da Universidade do Porto (FPCEUP), sob a orientação da Prof.<sup>ª</sup> Doutora Luísa Faria e a coorientação da Doutora Ana Costa.

Neste estudo propomos-nos analisar dois constructos psicológicos em bailarinos de ballet clássico: a inteligência emocional enquanto traço e o estado de *flow* (fluxo).

Numa breve definição, a inteligência emocional traço ou autoeficácia emocional diz respeito às dimensões afetivas da personalidade, tais como a regulação emocional, a perceção emocional, a empatia ou o controlo de impulsos. Já o *flow* caracteriza-se por um estado psicoafetivo de absorção absoluta numa tarefa, na qual surgem fenómenos que tornam este estado idêntico à dissociação, tais como a distorção das perceções de tempo, espaço e “eu”, gerando no indivíduo sensações intensas de bem-estar, prazer e satisfação.

Ora, a investigação sugere que tanto a inteligência emocional como a experiência de *flow* se correlacionam positivamente com perceções de bem-estar, estando, ainda, amplamente correlacionadas com um melhor desempenho e satisfação nas atividades profissionais e académicas. O estado de *flow*, a título de exemplo, tem sido profusamente investigado no âmbito do desporto de alta competição, evidenciando elevada correlação com um desempenho otimizado em provas competitivas.

Para este estudo pretende-se solicitar a participação de todos os alunos de dança clássica, com idades iguais ou superiores a 15 anos, que pratiquem esta modalidade há pelo menos 1 ano, independentemente de praticarem outros estilos de dança em simultâneo. Adultos que correspondam a este último critério também poderão participar, assim como os professores de ballet.

O presente estudo utilizará uma metodologia quantitativa, pelo que serão aplicados quatro questionários: uma medida de inteligência emocional (TEIQue SF), uma medida de *flow* (DFS2), ambos traduzidos, adaptados e validados para a população portuguesa; um breve questionário sociodemográfico e um questionário sobre a prática de dança, ambos construídos de raiz. Considerando que cada questionário não terá muitos itens, o respetivo preenchimento deverá ser breve e acessível.

Os dados recolhidos serão utilizados única e exclusivamente para a realização de análises estatísticas, na sua generalidade correlações, regressões, comparações de valores médios entre variáveis e análises psicométricas dos instrumentos utilizados (p. ex. análises fatoriais e alfa de Cronbach).

Após as análises estatísticas, apenas serão divulgadas as médias totais do grupo, no contexto de defesa da minha dissertação de Mestrado e, eventualmente, sob forma de

publicação em revistas científicas ou apresentação em eventos científicos (congressos ou conferências).

A confidencialidade dos dados recolhidos será rigorosamente respeitada: a academia enquanto entidade, bem como os participantes (ou seus encarregados de educação, se for o caso) deverão assinar o consentimento informado, o que nos permitirá utilizar os dados obtidos com o maior rigor e respeito pela confidencialidade e anonimato dos participantes, bem como da própria instituição.

Os questionários são de carácter absolutamente anónimo e confidencial. Uma vez recolhidos, serão guardados em armário com chave em gabinete da FPCEUP, e destruídos 3 anos após a recolha.

O nosso objetivo final é submeter o presente estudo para publicação e divulgação à comunidade científica. Assim, dispomo-nos a disponibilizar a cada entidade participante acesso ao artigo final, não nos sendo permitido, no entanto, fornecer dados ou resultados discriminados relativos a determinados indivíduos ou entidades.

Finalmente, as recolhas de dados deverão ter lugar entre janeiro e março de 2019. Solicita-se, assim, que, caso aceitem colaborar connosco, nos enviem a confirmação para o seguinte e-mail: [alexandracarneiromartins@gmail.com](mailto:alexandracarneiromartins@gmail.com)

Solicitamos, ainda, que junto da confirmação nos seja indicado o número estimado de participantes.

Certas de que V. Ex<sup>ª</sup>. dará a melhor atenção a este pedido de colaboração, agradecemos antecipadamente, e ficamos ao dispor para esclarecer quaisquer dúvidas que possam surgir.

Grata pela atenção e disponibilidade.

Cordiais cumprimentos,

As investigadoras,

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(Dr.<sup>ª</sup> Alexandra Martins)

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(Doutora Ana Costa)

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(Prof. Doutora Luísa Faria)

## Annex 4 – Informed consent documents

## INTELIGÊNCIA EMOCIONAL E ESTADO DE FLOW EM BAILARINOS CLÁSSICOS

No âmbito da minha dissertação de Mestrado em Psicologia, gostaria de contar com a colaboração do seu educando num projeto de investigação cujo objetivo é analisar as variáveis da inteligência emocional e as experiências de *flow* (estado de concentração total numa atividade), em relação à prática de dança clássica, em estudantes e profissionais desta modalidade.

Os participantes neste estudo deverão corresponder a 2 pré-requisitos: ter idade igual ou superior a 15 anos e praticar dança clássica há pelo menos 1 ano. A participação do seu educando é de carácter voluntário e consiste no preenchimento de breves questionários, destinados a avaliar as auto percepções relativas às diversas dimensões da inteligência emocional e, posteriormente, à percepção de experiências do estado mental denominado “flow”. As recolhas de dados serão efetuadas nas respetivas entidades (academias, conservatórios ou companhias de dança), não envolvendo nenhuma deslocação ou qualquer outro tipo de custo. Os dados recolhidos nesta investigação serão exclusivamente utilizados para a realização de análises estatísticas. Os respetivos resultados apenas serão divulgados no contexto da defesa da minha dissertação de Mestrado e, eventualmente, sob a forma de publicação em revistas científicas ou apresentação em eventos científicos (congressos ou conferências).

Será assegurado o anonimato de cada participante e em momento algum discriminaremos ou divulgaremos os resultados individuais ou à escala de cada entidade participante. O facto de todos os questionários serem anónimos implica, no entanto, que uma vez preenchidos e entregues à investigadora, não será possível excluir a participação do seu educando, nem solicitar o acesso posterior às suas respostas. Poderá, no entanto, solicitar acesso às conclusões globais da investigação via e-mail.

Qualquer observação ou dúvida relativa aos pontos apresentados neste documento poderá ser remetida para o e-mail da investigadora [alexandracarneiromartins@gmail.com](mailto:alexandracarneiromartins@gmail.com). Em caso de dúvidas relacionadas com tratamento de dados pessoais poderá contactar a Encarregada de Proteção de Dados da Universidade do Porto – [dpo@reit.up.pt](mailto:dpo@reit.up.pt).

Agradecemos, desde já, a sua disponibilidade!

A investigadora,

Dr.ª Alexandra Martins

### CONSENTIMENTO

Autorizo a participação do meu educando no estudo acima referido

**Nome do educando:** .....

**O/A Encarregado(a) de Educação:** ..... **Data:** .....



## INTELIGÊNCIA EMOCIONAL E ESTADO DE FLOW EM BAILARINOS CLÁSSICOS

Caro(a) participante,

No âmbito da minha dissertação de Mestrado em Psicologia, gostaria de contar com a sua colaboração num projeto de investigação cujo objetivo é analisar as variáveis da inteligência emocional e as experiências de *flow* (estado de concentração total numa atividade), em relação à prática de dança clássica, em estudantes e profissionais desta modalidade.

Os participantes neste estudo deverão corresponder a 2 pré-requisitos: ter idade igual ou superior a 15 anos e praticar dança clássica há pelo menos 1 ano. A sua participação é de carácter voluntário e consiste no preenchimento de breves questionários, destinados a avaliar as autopercepções relativas às diversas dimensões da inteligência emocional e, posteriormente, à percepção de experiências do estado mental denominado “flow”. As recolhas de dados serão efetuadas nas respetivas entidades (academias, conservatórios ou companhias de dança), não envolvendo nenhuma deslocação ou qualquer outro tipo de custo. Os dados recolhidos nesta investigação serão exclusivamente utilizados para a realização de análises estatísticas. Os respetivos resultados apenas serão divulgados no contexto da defesa da minha dissertação de Mestrado e, eventualmente, sob a forma de publicação em revistas científicas ou apresentação em eventos científicos (congressos ou conferências).

Será assegurado o anonimato de cada participante e em momento algum discriminaremos ou divulgaremos os resultados individuais ou à escala de cada entidade participante. O facto de todos os questionários serem anónimos implica, no entanto, que uma vez preenchidos e entregues à investigadora, não será possível excluir a sua participação, nem solicitar o acesso posterior às suas respostas. Poderá, no entanto, solicitar acesso às conclusões globais da investigação via e-mail.

Qualquer observação ou dúvida relativa aos pontos apresentados neste documento poderá ser remetida para o e-mail da investigadora [alexandracarneiromartins@gmail.com](mailto:alexandracarneiromartins@gmail.com). Em caso de dúvidas relacionadas com tratamento de dados pessoais poderá contactar a Encarregada de Proteção de Dados da Universidade do Porto – [dpo@reit.up.pt](mailto:dpo@reit.up.pt).

Agradecemos, desde já, a sua disponibilidade!

A investigadora,

Dr.ª Alexandra Martins

### CONSENTIMENTO

Aceito participar no estudo acima referido

Assinatura: .....

Data: .....

## Annex 5 – Results' tables

Table 1 – Correlations between Trait EI and Flow total score and dimensions.

	Descriptive Analysis	Correlations														
		<i>M</i> (SD)	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. TEIQ total	145.05 (18.98)	1														
2. TEIQ emotionality	5.02 (.82)	.73**	1													
3. TEIQ self-control	4.28 (1.03)	.69**	.30**	1												
4. TEIQ well-being	5.35 (.98)	.78**	.39**	.41**	1											
5. TEIQ sociability	4.45 (.66)	.55**	.30**	.17*	.37**	1										
6. Flow total	127.46 (15.58)	.43**	.32**	.27**	.37**	.20*	1									
7. Flow action awareness	12.69 (2.62)	.26**	.20*	.02	.34**	.26**	.60**	1								
8. Flow autotelic experience	17.32 (2.92)	.32**	.17*	.17*	.35**	.10	.68**	.25**	1							
9. Flow challenge skill balance	13.56 (2.40)	.37**	.14	.26**	.36**	.22**	.69**	.49**	.52**	1						
10. Flow clear goals	14.92 (3.35)	.34**	.32**	.32**	.19*	.08	.62**	.27**	.18*	.38**	1					
11. Flow concentration on task	13.92 (2.72)	.19*	.16	.16*	.14	-.06	.64**	.20*	.49**	.32**	.38**	1				
12. Flow loss of self- consciousness	11.11 (3.57)	.24**	.27**	.09	.18*	.13	.45**	.22**	.17*	.17*	.16*	.14	1			
13. Flow sense of control	13.81 (2.38)	.29**	.21*	.29**	.17*	.16*	.62**	.34**	.24**	.40**	.49**	.39**	.10	1		
14. Flow time transformation	15.27 (3.21)	.10	.10	-.03	.11	.08	.57**	.28**	.55**	.21*	.03	.36**	.26**	.18*	1	
15. Flow unambiguous feedback	14.86 (2.59)	.26**	.16	.22**	.23**	.17*	.63**	.31**	.35**	.48**	.48**	.29**	.02	.44**	.20*	1

Note: \*  $p < .05$ ; \*\*  $p < .001$ .

Table 2 – ANOVA Differential analysis according to ballet dancers' academic level.

	Academic grade	N	M (SD)	Anova			Bonferroni Post-hoc Test
				F	df	p	
TEIQ total	1	36	142.86(20.92)	8.14	2	.001	3 > 1 p = .01 3 > 2 p = .01
	2	78	141.01(16.48)				
	3	34	155.75(18.47)				
TEIQ emotionality	1	36	5.04(.74)	3.07	2	.049	3 > 2 P=.046
	2	78	4.86(.75)				
	3	34	5.27(1.00)				
TEIQ self-control	1	36	4.13(1.17)	5.69	2	.004	3 > 1 p=.019
	2	78	4.14(.95)				
	3	34	4.79(.92)				
TEIQ well-being	1	36	5.24(1.14)	3.57	2	.031	3 > 2 p=.032
	2	78	5.20(.96)				
	3	34	5.72(.75)				
TEIQ sociability	1	36	4.38(.70)	1.77	2	.175	n/s
	2	78	4.41(.58)				
	3	34	4.64(.73)				
Flow total	1	36	132.49(15.87)	4.99	2	.008	1 > 2 p=.012
	2	78	123.50(16.55)				
	3	34	129.87(10.81)				
Flow action awareness	1	36	12.64(3.10)	.212	2	.809	n/s
	2	78	12.57(2.49)				
	3	34	12.93(2.55)				
Flow autotelic experience	1	36	18.32(2.22)	7.19	2	.001	1 > 2 p=.004 3 > 2 p=.017
	2	78	16.45(3.39)				
	3	34	18.08(1.68)				
Flow challenge skill balance	1	36	13.78(2.61)	1.96	2	.144	n/s
	2	78	13.17(2.46)				
	3	34	14.07(1.93)				
Flow clear goals	1	36	15.31(3.42)	1.10	2	.337	n/s
	2	78	14.49(3.79)				
	3	34	15.32(2.00)				
Flow concentration on task	1	36	14.58(2.43)	5.28	2	.006	1 > 2 p=.039 3 > 2 p=.021
	2	78	13.23(2.84)				
	3	34	14.73(2.50)				
Flow loss of self-consciousness	1	36	11.68(3.86)	1.22	2	.298	n/s
	2	78	11.05(3.65)				
	3	34	10.36(2.89)				
Flow sense of control	1	36	14.81(2.40)	4.69	2	.011	1 > 2 p=.009
	2	78	13.38(2.37)				
	3	34	13.63(2.16)				
Flow time transformation	1	36	15.88(3.06)	1.97	2	.144	n/s
	2	78	14.72(3.38)				
	3	34	15.60(2.89)				
Flow unambiguous feedback	1	36	15.50(2.21)	2.33	2	.101	n/s
	2	78	14.45(3.00)				
	3	34	15.17(1.83)				

Note: 1) Middle school, N=36; 2) Secondary school, N=78; 3) College, N=34.

Table 3 – ANOVA Differential analysis according to dancers' years of ballet practice.

	Dance Experience	N	M (SD)	Anova		
				<i>F</i>	<i>df</i>	<i>p</i>
TEIQ total	Less 10 yrs	59	141.41(21.13)	3.16	1	.077
	More 10 yrs	91	146.99(17.09)			
TEIQ emotionality	Less 10 yrs	59	5.00(.86)	.02	1	.900
	More 10 yrs	91	5.02(.80)			
TEIQ self-control	Less 10 yrs	59	4.07(1.03)	4.18	1	.047
	More 10 yrs	91	4.41(1.02)			
TEIQ well-being	Less 10 yrs	59	5.22(1.02)	1.48	1	.227
	More 10 yrs	91	5.42(.96)			
TEIQ sociability	Less 10 yrs	59	4.35(.64)	2.11	1	.149
	More 10 yrs	91	4.51(.66)			
Flow total	Less 10 yrs	59	124.62(17.06)	3.21	1	.075
	More 10 yrs	91	129.27(14.42)			
Flow action awareness	Less 10 yrs	59	12.61(2.55)	.06	1	.804
	More 10 yrs	91	12.72(2.70)			
Flow autotelic experience	Less 10 yrs	59	16.80(3.20)	3.13	1	.079
	More 10 yrs	91	17.67(2.72)			
Flow challenge skill balance	Less 10 yrs	59	13.37(2.65)	.51	1	.475
	More 10 yrs	91	13.66(2.25)			
Flow clear goals	Less 10 yrs	59	14.55(3.79)	1.29	1	.257
	More 10 yrs	91	15.19(3.03)			
Flow concentration on task	Less 10 yrs	59	13.53(2.74)	2.26	1	.134
	More 10 yrs	91	14.21(2.68)			
Flow loss of self- consciousness	Less 10 yrs	59	11.37(3.56)	.63	1	.427
	More 10 yrs	91	10.89(3.58)			
Flow sense of control	Less 10 yrs	59	13.49(2.19)	1.81	1	.180
	More 10 yrs	91	14.03(2.48)			
Flow time transformation	Less 10 yrs	59	14.72(3.26)	2.56	1	.112
	More 10 yrs	91	15.58(3.16)			
Flow unambiguous feedback	Less 10 yrs	59	14.17(2.69)	7.32	1	.008
	More 10 yrs	91	15.32(2.46)			

Table 4 – ANOVA Differential analysis according to ballet dancer's hours of weekly practice.

	Weekly dance practice	N	M (SD)	Anova			Bonferroni Post-hoc Test
				F	df	p	
TEIQ total	1	25	143.44(13.29)	.70	2	.501	n/s
	2	54	142.40(20.57)				
	3	47	146.84(20.39)				
TEIQ emotionality	1	25	4.94(.747)	.23	2	.794	n/s
	2	54	5.06(.76)				
	3	47	4.97(.94)				
TEIQ self-control	1	25	4.00(.95)	.99	2	.372	n/s
	2	54	4.27(1.05)				
	3	47	4.37(1.13)				
TEIQ well-being	1	25	5.47(.86)	1.06	2	.351	n/s
	2	54	5.16(1.07)				
	3	47	5.39(1.00)				
TEIQ sociability	1	25	4.46(.58)	1.62	2	.202	n/s
	2	54	4.34(.63)				
	3	47	4.57(.69)				
Flow total	1	25	130.32(13.01)	1.69	2	.189	n/s
	2	54	124.19(16.25)				
	3	47	128.60(16.05)				
Flow action awareness	1	25	13.13(2.17)	.57	2	.569	n/s
	2	54	12.57(2.65)				
	3	47	12.45(2.93)				
Flow autotelic experience	1	25	18.12(2.43)	4.29	2	.016	2>3 p=.033
	2	54	16.25(3.40)				
	3	47	17.60(2.75)				
Flow challenge skill balance	1	25	14.00(1.78)	1.31	2	.275	n/s
	2	54	13.13(2.62)				
	3	47	13.72(2.61)				
Flow clear goals	1	25	15.08(3.15)	.24	2	.790	n/s
	2	54	14.88(3.79)				
	3	47	15.35(3.09)				
Flow concentration on task	1	25	14.52(2.77)	1.23	2	.296	n/s
	2	54	13.46(2.97)				
	3	47	13.87(2.60)				
Flow loss of self-consciousness	1	25	10.32(3.75)	.64	2	.528	n/s
	2	54	11.28(3.30)				
	3	47	10.84(3.73)				
Flow sense of control	1	25	13.71(2.27)	.44	2	.648	n/s
	2	54	13.72(2.53)				
	3	47	14.13(2.28)				
Flow time transformation	1	25	15.84(3.61)	2.81	2	.064	n/s
	2	54	14.36(3.24)				
	3	47	15.66(2.92)				
Flow unambiguous feedback	1	25	15.60(2.24)	1.41	2	.247	n/s
	2	54	14.53(2.68)				
	3	47	14.98(2.81)				

Note: 1) between 4-6 hours practice a week, N=25; 2) between 7-10 hours practice a week, N=54; 3) more than 10 hours practice a week, N=47.

Table 5 – ANOVA Differential analysis according to ballet dancers' stage performance frequency.

	Stage Performance Frequency	N	M (SD)	Anova			Bonferroni Post-hoc Test
				<i>F</i>	<i>df</i>	<i>p</i>	
TEIQ total	1	27	153.81(17.39)	2.83	3	.041	n/s
	2	27	141.11(16.84)				
	3	42	143.48(17.75)				
	4	49	142.57(20.24)				
TEIQ emotionality	1	27	5.36(.815)	2.15	3	.097	n/s
	2	27	4.91(.689)				
	3	42	4.92(.799)				
	4	49	4.94(.843)				
TEIQ self-control	1	27	4.62(.864)	2.89	3	.038	n/s
	2	27	4.05(.965)				
	3	42	4.42(.917)				
	4	49	4.01(1.16)				
TEIQ well-being	1	27	5.72(.794)	1.65	3	.180	n/s
	2	27	5.22(1.018)				
	3	42	5.30(1.02)				
	4	49	5.26(1.00)				
TEIQ sociability	1	27	4.49(.766)	.37	3	.777	n/s
	2	27	4.36(.652)				
	3	42	4.39(.510)				
	4	49	4.49(.727)				
Flow total	1	27	130.61(10.11)	4.35	3	.006	1>3 <i>p</i> =.039 4>3 <i>p</i> =.009
	2	27	129.09(14.67)				
	3	42	120.27(15.87)				
	4	49	130.66(17.08)				
Flow action awareness	1	27	12.58(2.45)	2.42	3	.069	n/s
	2	27	13.28(2.21)				
	3	42	11.86(2.57)				
	4	49	13.16(2.93)				
Flow autotelic experience	1	27	18.20(1.63)	9.38	3	.001	1>3 <i>p</i> =.001 2>3 <i>p</i> =.001 4>3 <i>p</i> =.001
	2	27	18.04(2.31)				
	3	42	15.44(3.67)				
	4	49	18.02(2.42)				
Flow challenge skill balance	1	27	14.32(1.84)	4.27	3	.006	1>3 <i>p</i> =.020 4>3 <i>p</i> =.024
	2	27	13.13(1.63)				
	3	42	12.60(2.70)				
	4	49	14.03(2.55)				
Flow clear goals	1	27	15.55(2.08)	.77	3	.512	n/s
	2	27	15.30(2.98)				
	3	42	14.66(3.51)				
	4	49	14.49(3.98)				
Flow concentration on task	1	27	14.55(2.44)	.19	3	.138	n/s
	2	27	14.44(2.89)				
	3	42	13.19(2.38)				
	4	49	13.86(2.97)				
Flow loss of self-consciousness	1	27	11.37(2.62)	2.14	3	.098	n/s
	2	27	9.85(3.91)				
	3	42	10.83(3.48)				
	4	49	11.93(3.83)				
Flow sense of control	1	27	13.88(1.83)	.23	3	.875	n/s
	2	27	13.62(2.47)				

	3	42	13.62(2.42)				
	4	49	13.98(2.63)				
Flow time transformation	1	27	15.01(3.55)	4.90	3	.003	2>3 $p=.032$ 4>3 $p=.003$
	2	27	16.07(2.95)				
	3	42	13.92(3.38)				
	4	49	16.22(2.60)				
	1	27	15.14(1.81)				
Flow unambiguous feedback	2	27	15.37(2.20)	1.46	3	.229	n/s
	3	42	14.16(2.54)				
	4	49	14.96(3.22)				

Note: 1) Less than 1time a year, N=27; 2) at least once a year, N=27; 3) at least 2 times a year, N=42; 4) at least once in each 3 months, N=49.



Table 6 – ANOVA Differential analysis according to ballet dancers' teaching regime.

	Dance Course	N	M (SD)	Anova		
				<i>F</i>	<i>df</i>	<i>p</i>
TEIQ total	free	61	145.28(16.13)	3.79	1	.054
	articulated	66	139.08(19.47)			
TEIQ emotionality	free	61	4.87(.83)	.61	1	.436
	articulated	66	4.98(.76)			
TEIQ self-control	free	61	4.37(.91)	6.88	1	.010
	articulated	66	3.91(1.07)			
TEIQ well-being	free	61	5.52(.99)	6.88	1	.010
	articulated	66	5.05(1.02)			
TEIQ sociability	free	61	4.39(.62)	.01	1	.970
	articulated	66	4.38(.66)			
Flow total	free	61	130.83(14.14)	7.34	1	.008
	articulated	66	123.30(16.93)			
Flow action awareness	free	61	12.81(2.91)	.05	1	.824
	articulated	66	12.70(2.52)			
Flow autotelic experience	free	61	18.61(1.72)	25.32	1	.000
	articulated	66	16.10(3.53)			
Flow challenge skill balance	free	61	13.77(2.26)	2.19	1	.142
	articulated	66	13.12(2.66)			
Flow clear goals	free	61	15.07(2.99)	.50	1	.482
	articulated	66	14.63(3.94)			
Flow concentration on task	free	61	14.57(2.65)	8.66	1	.004
	articulated	66	13.17(2.73)			
Flow loss of self-consciousness	free	61	10.54(3.90)	1.43	1	.234
	articulated	66	11.33(3.51)			
Flow sense of control	free	61	14.03(2.38)	1.72	1	.192
	articulated	66	13.48(2.37)			
Flow time transformation	free	61	16.22(3.19)	10.48	1	.002
	articulated	66	14.38(3.21)			
Flow unambiguous feedback	free	61	15.21(2.29)	2.88	1	.092
	articulated	66	14.40(3.00)			

Table 7 – ANOVA Differential analysis according to ballet dancers' teaching experience.

	Dance Teaching experience	N	M (SD)	Anova		
				<i>F</i>	<i>df</i>	<i>p</i>
TEIQ total	No	84	140.95(18.37)	8.44	1	.004
	Yes	67	149.70(18.45)			
TEIQ emotionality	No	84	4.90(.82)	3.21	1	.075
	Yes	67	5.14(.80)			
TEIQ self-control	No	84	4.06(1.02)	8.63	1	.004
	Yes	67	4.54(.98)			
TEIQ well-being	No	84	5.26(.97)	1.28	1	.259
	Yes	67	5.44(.99)			
TEIQ sociability	No	84	4.41(.64)	.76	1	.384
	Yes	67	4.50(6.73)			
Flow total	No	84	122.90(14.72)	17.23	1	.000
	Yes	67	132.97(14.93)			
Flow action awareness	No	84	12.26(2.46)	4.92	1	.028
	Yes	67	13.21(2.74)			
Flow autotelic experience	No	84	16.72(3.10)	8.51	1	.004
	Yes	67	18.08(2.51)			
Flow challenge skill balance	No	84	13.04(2.23)	8.68	1	.004
	Yes	67	14.17(2.48)			
Flow clear goals	No	84	14.23(3.48)	8.08	1	.005
	Yes	67	15.76(3.04)			
Flow concentration on task	No	84	13.24(2.79)	12.50	1	.001
	Yes	67	14.76(2.40)			
Flow loss of self-consciousness	No	84	10.94(3.39)	.30	1	.583
	Yes	67	11.26(3.78)			
Flow sense of control	No	84	13.30(2.23)	8.75	1	.004
	Yes	67	14.42(2.43)			
Flow time transformation	No	84	14.88(3.42)	2.81	1	.096
	Yes	67	15.75(2.91)			
Flow unambiguous feedback	No	84	14.30(2.61)	9.25	1	.003
	Yes	67	15.56(2.43)			