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RESEARCH ARTICLE

Crafting Flow: The Role of Acting Extraverted, Conscientious, and Emotionally Stable

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Abstract

The present study aimed to investigate experimentally how flow, as a state, is influenced by inducing behaviors specific to conscientiousness, extraversion, and emotional stability in daily activities for ten days. Informed by prior research, an intervention was developed, requiring participants to adopt behaviors associated with these three dimensions. The methodology used was to randomize participants into two groups, one group benefiting from intervention and the other being a control group. Initial measurements were taken using a dispositional flow scale and a personality inventory. Subsequently, a flow state scale was applied on the 4th, 7th, and 10th days. The main findings indicated a significant increase in the flow of experience and subjective happiness for the experimental group compared to the control group. The study's conclusions suggest that it is possible to act more extraverted, conscientious, and emotionally stable in daily life, and doing so can potentially lead to an enhancement in the flow state. We discussed the practical implications in organizations.

Keywords

flow state, subjective happiness, personality, extraversion, conscientiousness, emotional stability

1. Introduction

Over time, we have noticed an increase in studies in the literature that analyze concepts such as happiness, well-being, or life satisfaction. In line with this trend, our study aims to enhance individuals' happiness by providing them with a way to introduce 'flow' into their daily experiences. How can we find fulfillment that is not contingent upon and should not be strengthened by additional extrinsic motivation? Studies in the field have highlighted several key elements characterizing the flow state. These include self-forgetfulness or forgetting personal worries, intense concentration, clear goals, immediate feedback, and a distorted sense of time, control, and pleasure (Csikszentmihalyi, 2008). Flow state also requires a balance between challenges and skills. The person can become anxious if the challenge goes far beyond the ability. Boredom can be installed if the ability surpasses the challenge (Nakamura & Csikszentmihalyi, 2014). In other words, as illustrated by Csikszentmihalyi (2008), flow can be

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described as what a painter feels when he paints, what an athlete feels in a competition, and what a musician feels when he composes. A specialized interpretation focusing on flow within the workplace has been formulated. Because flow is experienced more during working time than in leisure time, it is essential to invest time and energy to experience flow at work (Bakker, 2008).

Expanding upon the multi-faceted understanding of flow, a more nuanced exploration of its relationship with happiness is paramount. The literature in positive psychology acknowledges a connection between flow states and happiness, but empirical findings confirm that they are not mutually inclusive experiences (Engeser et al., 2023; Tappolet, 2022). This aligns with Csikszentmihalyi's (2008) predictions, indicating that the attainment of a flow state precedes the experience of happiness. Thus, initial engagement in flow can serve as a launchpad for individuals to enhance their happiness levels.

Given that initiating engagement in flow can serve as a potent launching pad for heightening levels of happiness, a universal aspiration, it becomes crucial to explore in depth the underlying mechanisms and attributes of the flow experience. Indeed, the prospect of having such a valuable resource at one's disposal raises pivotal questions: Who can readily access this launching pad to happiness? What are the prerequisites enabling individuals to harness this state at will? The exploration of these queries necessitates a deeper look into the mechanisms and characteristics intrinsic to the flow experience, as outlined by the theory of optimal experience. This theory, grounded in Csikszentmihalyi's (1990) concept of flow, posits that an individual who feels in control during an activity attains a state of intense concentration and can set clear goals and forget about personal worries, is likely experiencing a state of flow at that moment. It also stipulates that while the experience of flow appears to be a universal phenomenon, its occurrence varies from one individual to another. The flow quality or intensity may vary as well (Asakawa, 2010; Csikszentmihalyi & Csikszentmihalyi, 1992, 2008; Moneta, 2004; Nakamura & Csikszentmihalyi, 2014). Given this variation, Csikszentmihalyi (1990) notes that there are individuals who can find enjoyment and satisfaction even in challenging situations, terming them as having an "autotelic personality". But beyond personality traits, considered stable, experiencing flow also takes into account the conscious effort made to experience more flow (Csikszentmihalyi, 1990). But how stable these personality traits really are? What about the moments when the same person behaves totally differently in two similar moments? Here arises the problem of the differentiation between personality traits and personality state. If the first is considered more stable over time, the second can be influenced more easily and depends on the effort and desire of the person. However, the principle of state–trait isomorphism argues that states share many properties and consequences with traits. Moreover, the same principle holds that a trait mainly comprises states and that state changes can lead to traits over time (Fleeson et al., 2002).

Early studies in the literature initially conceptualized the autotelic personality by associating it with specific attributes, including curiosity, persistence, low self-centeredness, intrinsic motivation, enjoyment of challenges, and attentional control (Csikszentmihalyi et al., 1993; Nakamura & Csikszentmihalyi, 2002). Building on these initial studies, subsequent studies tried to capture the autotelic personality through the lens of more well-known and extensively studied models, such as the Big Five model (Costa & McCrae, 1992). This model postulates the existence of five core personality dimensions or traits—openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism (or emotional stability) — and suggests that individuals can be positioned along a spectrum for each of these traits (Costa & McCrae, 1992).

Analyzing the literature, it seems that personality traits are related to the flow state. Neuroticism tends to be negatively associated with the flow state, as negative emotions can disrupt its components (Ullén et al., 2012; Ross & Keiser, 2014; Vorkapić & Gović, 2016). In contrast, conscientiousness is

positively linked to experiencing flow, with individuals high in conscientiousness being more likely to dedicate time to flow-generating activities and excel in mastering challenging tasks (Ullén et al., 2012; Ross & Keiser, 2014; Vorkapić & Gović, 2016). Extraversion is also positively related to flow state, the positive affect component central to experiencing the extraversion (Ross & Keiser, 2014). A low level of neuroticism and increased conscientiousness, followed by increased extraversion, produced the greatest effects in experiencing flow (Ross & Keiser, 2014). As an exception, in addition to extraversion, consciousness, and neuroticism, Tatalović Vorkapić and Gović (2016) found a positive relationship between flow and openness to experience. Also, a recent meta-analysis that analyzed the connection between personality and flow at work identified an association between flow at work with conscientiousness, openness to experience, and extraversion but not with neuroticism (Liu et al., 2023). A possible explanation is the conceptual difference between flow state and flow at work. To summarize, the consistent finding across most studies is a relationship between the state of flow and three of the Big Five dimensions, namely extraversion, conscientiousness, and emotional stability.

Starting from the studies mentioned above and from the idea that beyond the elements related to personality, the flow experience is also about the effort made, we wonder if a person can adopt behavioral manifestations following certain personality traits. Understanding how personality traits manifest in everyday behavior is essential for the present study. Studies in the literature have investigated the behavioral manifestations of several personality traits, including the Big Five traits (Funder & Sneed, 1993; Margolis & Lyubomirsky, 2019). For example, a behavioral manifestation for extroverts is that they are often seen in group settings and are comfortable in such environments (Funder & Sneed, 1993). The literature on positive psychology showed that well-being, positive affects, and flow can increase if people adopt specific behaviors to extraversion (Jacques-Hamilton et al., 2018; Margolis & Lyubomirsky, 2019) and conscientiousness traits (Margolis & Lyubomirsky, 2019; Stieger et al., 2020; Stieger et al., 2021). These studies conclude that changing the behavior associated with personality is possible and may increase well-being and associated concepts, including flow. More than that, even those who do not possess the traits at the level associated with flow can increase the frequency of experiencing flow if they behave in a way that is consistent with those who do have the levels of traits that facilitate flow.

Moreover, the more effort a person puts in (e.g., adopting more behavioral manifestations specific to extraversion, conscientiousness, and emotional stability), the more chances he has to internalize the respective traits (Fleeson et al., 2002). Also, using several measurements during the intervention, we can observe how the behavioral change occurs regarding the three analyzed personality traits. Usually, it takes time for someone to act differently or to implement other behaviors than those they are used to. It can vary significantly depending on several factors, including the complexity of the behavior, the individual's motivation, the resources available, and their level of commitment to the activity. It is also important to note that behavior change is gradual and not always linear (Grimley et al., 1994). Various behavior change models, such as the trans-theoretical change model, suggest that individuals go through stages when changing behavior, including pre-contemplation, contemplation, preparation, action, and maintenance. The time spent in each stage can vary widely (Prochaska & DiClemente, 1983). Studies from the literature that addressed the induction of certain personality-specific manifestations and analyzed the impact on well-being also used at least one week (Jacques-Hamilton et al., 2018; Margolis & Lyubomirsky, 2019).

Building upon the foundational work of previous studies and identifying avenues for refinement, our study makes notable advancements by incorporating comprehensive instructions complete with examples of behaviors or activities for participants to follow. For instance, while studies like Margolis and Lyubomirsky (2019) have primarily encouraged participants to embrace talkativeness, assertiveness, or spontaneity, our approach delves deeper, capturing the entire scope of extraversion. By

embracing detailed instructions that consider all six facets of the concept, we not only provide clearer guidance to participants but also potentially pave the way for realizing more substantial effects.

Taking into account the literature studies previously mentioned, we can say that there is a relationship between personality traits, such as extraversion, conscientiousness, and emotional stability, and the state of flow (Ullén et al., 2012; Ross & Keiser, 2014; Vorkapić & Gović, 2016). Also, the studies by Margolis and Lyubomirsky (2019) and by Stieger et al. (2020, 2021) have shown that behavioral manifestations of several personality traits are possible and lead to an increased state of flow, which over time leads to an increase in general happiness (Engeser et al., 2023; Tappolet, 2022). Thus, based on experimental design, this study adds empirical evidence about the causal relationships between behavioral aspects of personality traits and experiencing the flow, based on behavioral change intervention.

2. The present study

Addressing noted gaps and extending the literature, the present study brings forward the following: Firstly, we investigate the relationship between personality traits (extraversion, neuroticism, and conscientiousness) and flow state, reinforcing the existing studies (Ullén et al., 2012; Ross & Keiser, 2014; Heller et al., 2015; Tse et al., 2021). Secondly, we propose an intervention encompassing behavioral manifestations related to increased extraversion, conscientiousness, and decreased neuroticism to examine whether individuals striving to adopt such behaviors experience enhanced flow and subjective happiness in their everyday lives. Using an experimental design, with an experimental group and a control group, we want to test the effectiveness of the intervention. Thirdly, using several measurements during the intervention, we can observe how the behavioral change occurs regarding the three analyzed personality traits. Lastly, we want to investigate if there is a relationship between how much effort the participants put in, how many behavioral manifestations they implement, and the flow level.

Taking into consideration what we mentioned above, we formulate the hypothesis:

H1: The flow state will be higher for the experimental group compared to the control group.

H2: A gradual increase in flow state will be reported during the intervention for the experimental group.

H3: The number of activities performed by the experimental group will positively correlate with the level of flow state.

H4: The subjective happiness reported on day ten will be significantly higher for the experimental group compared to the control group.

3. Method

3.1. Procedure

The study's design is experimental, with a duration of ten days and randomization being present. The present study was carried out through a prior registration in which the participants were notified about the purpose, duration, conduct of the study, confidentiality of data, and benefits obtained from participating in this research. The objective of the study presented to the participants was to investigate how the flow level (the flow representing a state of total involvement in an activity is specific) is influenced by certain behavioral manifestations following certain personality traits. Regarding the duration and conduct of the study, participants were informed that it would take place over ten days and that they have to complete, on specific days, a series of questionnaires and possibly follow particular instructions sent by the researcher. The informed consent also included details on the confidentiality of the data and their use only for research purposes. Also, to stimulate participation in the study, we held a raffle for one shopping voucher worth 200 lei (approx. 40 euros). To win this award, the participants had to take part in all stages of the research during the ten days and then present themselves with the extracted code (code consisting of the initial name and surname, day, and month of birth). At the end

of this form, participants had to give their consent and provide their e-mail addresses to send them the questionnaires and instructions on the following days. Subsequently, the participants were randomized into two groups: experimental and control.

The experimental procedure for the experimental group and the control group took place as follows:

Experimental Group

On the first day, participants were administered a questionnaire to assess the dispositional experience of flow. Subsequently, after a few hours, they received instructions for their behavioral change (See Appendix 1). The participants were told that they had to try to change their behavior and do some activities for the next ten days. The activities were divided into three categories, one for each of the three personality traits, and the participants were guided to do exercises from each type. The intervention was created and adapted to include all 18 facets of the three personality dimensions demonstrated in previous studies that strongly correlate with the flow: increased extraversion, conscientiousness, and low neuroticism. They were described as general advice (e.g., "Be organized"), accompanied by a specific action (e.g., "Plan your activities for the current week, over time intervals").

On days 4, 7, and 10, participants were given a scale to measure the flow state. It was accompanied by a reminder about the need to follow the instructions and a self-report checklist to analyze their activities. The participants were informed that the number of declared activities would not influence their participation in the raffle, and they were encouraged to answer as honestly as possible.

Control group

Participants in the control group were given the questionnaire to assess the dispositional experience of flow but did not receive the intervention. Subsequently, similar to the experimental group, they were given the flow state scale on days 4, 7, and 10 without the reminder or the checklist. The data collection and the transmission of the information related to this study were carried out online (Google Forms and e-mail) without the need to travel to the laboratory.

3.2. Participants

The initial sample consisted of 136 participants. However, 35 participants dropped out, failing to complete the 10-day tasks. The study analyzed data from 101 participants (56 in the experimental group and 45 in the control group), selected from the general population, aged between 18 and 52 years (M = 23.1). Figure 1 presents an experiment overview based on CONSORT Flow Diagram (Moher et al., 2001).

Of these 101 participants, 75 were women (74.3%) and 26 - men (25.7%). The reported environment was 68.3% for urban areas and 31.7% for rural areas. In terms of participants' occupation, most of them were students (87.1%) belonging to 19 different fields of study, followed by a much lower percentage of employees (11.9%) and unemployed (1%).

We calculated using G*Power for a large effect of .80, and this study needs 126 participants (Faul et al., 2009). However, we concluded that a sample size of 101 participants is sufficient to detect medium effect sizes in an ANOVA analysis.

3.3. Measures

Dispositional flow was measured with Dispositional Flow Scale-2 (DFS-2; Jackson & Eklund, 2002). The scale has nine subscales: challenge-ability balance (e.g., "I face challenges, but I think my skills allow me to cope with them."), merging of action and awareness (e.g., "I perform daily tasks correctly without thinking about doing so."), clear goals (e.g., "I know clearly what I want to do."), unambiguous feedback (e.g., "I'm really clear about the level of my daily performance."), concentration on the task at hand (e.g., "My attention is fully focused on what I do."), control sense (e.g., "I have a sense of control over what I do."), loss of self-consciousness (e.g., "I don't care what others might think of me."), transformation of time (e.g., "Time seems to change, either slow down or accelerate.") and autotelic experience (e.g., "I like my daily experiences."). DFS-2

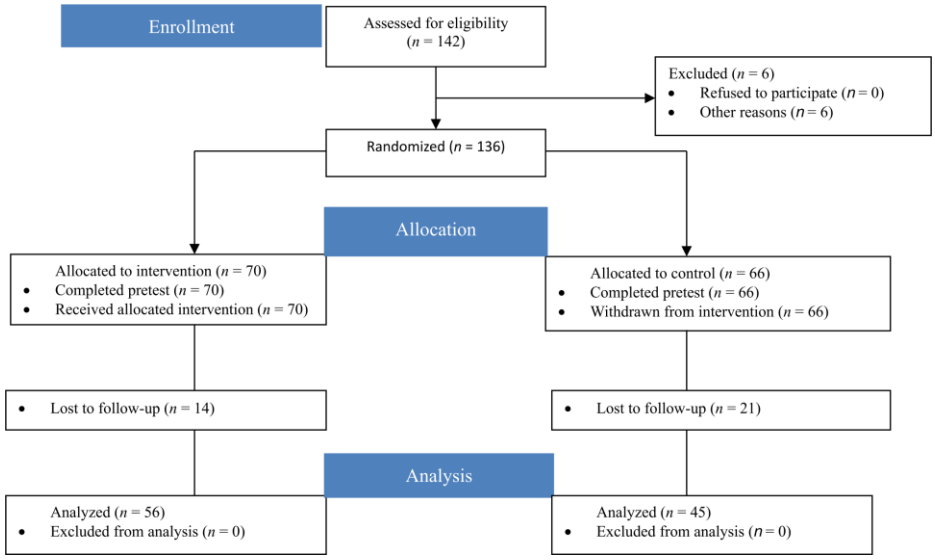

Figure 1. CONSORT Flow Diagram

was typically designed to analyze flow in a particular field of activity, for example, sports, music, or art. However, the scale can be easily adapted to assess general dispositional tendencies, i.e., everyday life (Johnson et al., 2014). In this sense, the scale used in the present study was translated into Romanian and adapted to relate to the daily experience. The scale consists of 36 items, four for each of the nine subscales of flow. The responses were coded using a 5-point Likert scale ranging from 1 - *never* to 5 - *always*, assessing how often respondents experience the flow state. Thus, the overall score of the participants will be in the range of 36 -180. In addition to this overall score, DFS-2 provides a score for each of the nine subscales of the flow. The internal consistency for DFS-2 used in the present study was high (α = .93). Good internal consistency has also been reported for all nine subscales: CSB (α=.75), MAA (α=.68), OG (α=.90), UF (α=.76), CTAH (α=.87), SC (α=.81), LSC (α=.89), TT (α=.82), AE (α=.78).

Flow state was measured using Flow State Scale-2 (FSS-2; Jackson & Eklund, 2002). This scale has been designed to assess the intensity of the flow state over a specific period, in this case - during the intervention. This scale was also translated into Romanian and adapted for this research. Like DFS-2, FSS-2 has 36 items, four for each of the nine subscales of the flow. The difference between the DFS-2 and FSS-2 items is that in the first case, the general disposition of the flow state is targeted (e.g., "I have a feeling of control over what I do.") and in the second - state of flow during the intervention (e.g., "I had a feeling of total control."). The FSS-2 respondents were asked to indicate how much they agreed with each statement on a 5-point Likert scale ranging from 1 - *strongly disagree* to 5 - *strongly agree*. In this case, FFS-2 provides an individual score for each subscale and the global score. Regarding the internal consistency of the present study for the FSS-2, we can state that it is very high both for the questionnaire as a whole (α = .95) and for the nine subscales: CSB (α = .82), MAA (α = .77), OG (α =.87), UF (α =.89), CTAH (α =.90), SC (α =.88), LSC (α =.90), TT (α =.88), AE (α =.95).

Personality traits were measured using the short version (10 items) of the Romanian IPIP scale (NEO-PI-R) (Rusu et al., 2012) for the three dimensions: extraversion (e.g., "I feel comfortable around people."), neuroticism (e.g., "I often feel sad."), and conscientiousness (e.g., "I'm very attentive to details."). The response format was a Likert scale ranging from 1 - *strongly disagree* to 5 - *strongly agree*. Regarding the internal

consistency for this scale, we can say that it was a high one: neuroticism (α=.86), extraversion (α=.88), and conscientiousness (α=.86).

To assess *the subjective level of happiness*, the participants were asked, on days 1 and 10, the following question: "How happy have you felt over the last 10 days?". The responses were coded using a 10-point Likert scale ranging from 1 - *not happy at all* to 10 - *extremely happy*.

Additionally, to measure the *number of activities performed by the participants in the experimental group*, they were asked on days 4, 7, and 10 the following question: "How many activities have you completed in the last three days?". This question also had the role of checking the involvement of the experimental group in the proposed activities.

Results

Before testing the hypotheses, some preliminary correlational analyses were carried out between the three personality traits (extraversion, conscientiousness, neuroticism) and the level of dispositional flow (see Table 1). A positive, statistically significant relationship was identified between the level of extraversion and the level of flow state, r (99) = .56, $p < .001$, having a shared variance of 31%. Also, a positive and statistically significant relationship was highlighted between conscientiousness and flow state, r (99) = .65, $p < .001$, the common variance being 42%. Regarding the relationship between neuroticism and flow level, a negative correlation was identified, statistically significant, r (99) = -.49, $p < .001$, the shared variance being 24%. Relative to the size of the effect, the results highlight strong effects between the flow state and the three personality dimensions, the strongest effect being between flow and consciousness r^2 = .42, followed by flow and extraversion r^2 = .31, respectively flow and neuroticism r^2 = .24.

Table 1. *Correlations between personality traits and the level of dispositional flow*

	Extraversion		Conscientiousness		Neuroticism	
Scale	*r*	R^2	*r*	R^2	*r*	R^2
DFS-2	.56**	.31	.65**	.42	-.49**	.24
CSB	.54**	.29	.56**	.31	-.49**	.24
MAA	.35**	.12	.33**	.10	-.24*	.05
OG	.52**	.27	.62**	.38	-.39**	.15
UF	.38**	.14	.50**	.25	-.40**	.16
CTAH	.35**	.12	.70**	.49	-.42**	.17
SC	.44**	.19	.61**	.37	-.53**	.28
LSC	.29**	.08	.19	.03	-.27**	.07
TT	.14	-	-.01	-	.21*	.04
AE	.50**	.25	.64**	.40	-.56**	.31

Note: n=101. DFS-2= Dispositional Flow Scale-2, CBS= Challenge-Ability Balance, MAA= Merging of Action and Awareness, OG= Clear goals, UF = Unambiguous Feedback, CTAH= Concentration on the Task at Hand, SC= Control sense, LSC= Loss of Self-Consciousness, TT = Transformation of Time, AE= Autotelic Experience.
*p<.05 **p<.01

To test hypothesis one, the Mixed Factorial ANCOVA analysis was used, the assumptions being partially fulfilled through the presence of outliners (see Table 2). However, they were not excluded in order not to truncate the data. The results identified marginally significant differences between the two groups on days 4 (p = .06) and 7 (p = .07). Statistically significant differences between the experimental (M =3.85, SD =.56) and control group (M =3.51, SD =.68), however, have been highlighted on day 10, $F(2;745)$ =7.775, p=.006, having a mean effect size, Cohen's d = .54 The means of the flow state in the experimental and control group are presented in Figure 2. Therefore, H1 was partially supported by our data.

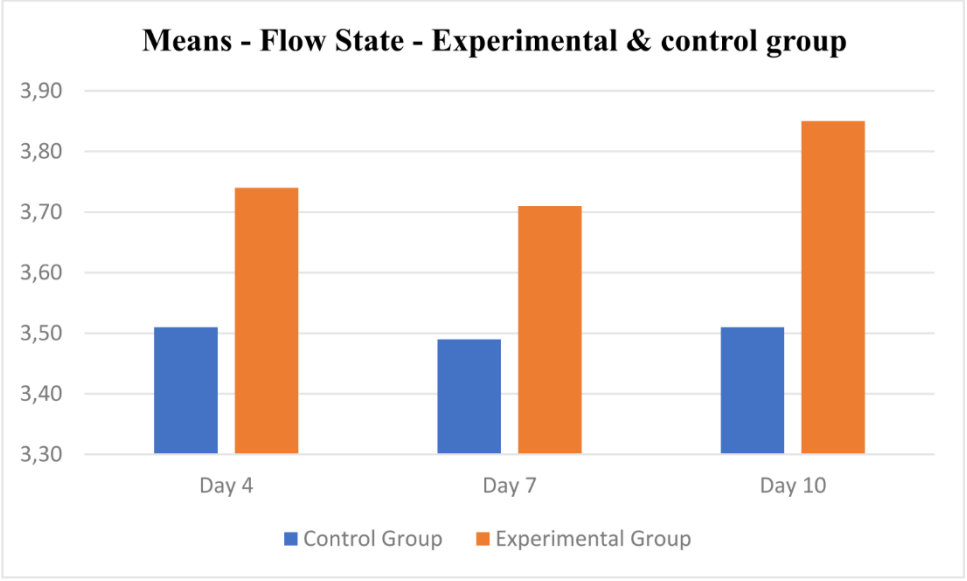

Figure 2. The means of the flow state in the experimental and control group

Similarly, to test hypothesis two, we used the Mixed Factorial ANCOVA analysis, the assumptions being partially fulfilled through the presence of outliners. This hypothesis assumed a gradual increase in flow state for the experimental group (See Table 2). The data showed that the flow state for days 4 (M = 3.74, SD =.60) and 7 (M = 3.71, SD =.60) remained relatively constant, an exponential increase being observed on day 10 *(*M =3.85, SD =.56*).* H2 was also partially supported by our data.

The Pearson correlation (unidirectional) was used to verify hypothesis three, the assumptions being met. The results show a positive and statistically significant correlation between the number of activities and the level of flow state for all three measurements, from day 4 - $r(54)$ =.40, p = .001, r^2 =.16, day 7 - r(54) =.52, p < .001, r^2 =.27, and day 10 - $r(54)$ =.54, p < .001, r^2 = .29. Therefore, H3 was supported by our data.

The t-test for independent samples was used to test the fourth hypothesis, with the homogeneity assumptions being partially met. As expected, the level of subjective happiness reported on day ten was higher for the experimental group (M = 8.00, SD =1.37) compared to the control group (M =7.02, SD =2.16), the difference being statistically significant $t(99)$ = -2.62, p < .01, having a mean effect size, Cohen's d = .54. Therefore, this last research hypothesis is also supported (see Table 3).

Table 2. *Mixed Factorial ANCOVA - the level of flow during the intervention for the experimental and control group*

	Experimental		Control				
	M	*SD*	*M*	*SD*	*F*(2,745)	*p*	*Cohen's d*
FSS-2 (Day 4)	3.74	.60	3.51	.63	2.32	.06	
FSS-2 (Day 7)	3.71	.60	3.49	.62	2.08	.07	
FSS-2 (Day 10)	3.85	.56	3.51	.68	7.77*	<.001	.54

Note: n(control group)=45, n(experimental group)=56, FSS 2= Flow State Scale-2.

Table 3. *The level of subjective happiness (day 10) - Control and experimental group comparison*

	Control group		Experimental group					
	M	*SD*	*M*	*SD*	*t*	*df*	*p*	*Cohen's d*
"How happy have you felt over the last 10 days?"	7.02	2.16	8.00	1.37	-2.62*	71	.005	.54

4. Discussion

The main objective of the present study was to investigate experimentally, by proposing an intervention with examples of behavioral manifestations for participants to follow, how the flow level is influenced by the induction of states specific to conscientiousness, extraversion, and emotional stability. The study's results based on the theory of optimal experience (Csikszentmihalyi, 2008) supported all research hypotheses, totally or partially. We expected differences between groups from the first days regarding flow and the increase in flow level for the experimental group to be gradual. However, most of the results met expectations and aligned with previous research. Firstly, we identified a strong relationship between the conscientiousness dimension and the flow state, followed by extraversion and flow, neuroticism and flow, respectively. This result reinforces those existing in the literature and once again motivates the choice of the three personality dimensions in the development of the intervention. Ullén et al. (2012) also identified close relationships between the neuroticism (-) and conscientiousness (+) dimensions and the flow state. The difference is that in the case of the present research, a strong relationship was also found between extraversion and flow. The present study is more like meeting the results obtained by Ross and Keiser (2014), which identify a negative correlation between neuroticism and flow, a positive one between conscientiousness and flow, and a slightly lower positive correlation between extraversion and flow, the present research highlighting even stronger effects for all three dimensions. The relationship between conscientiousness and flow can be explained by the fact that conscientious people tend to put more effort into what they do and are perseverant, which meets the theory of flow, which supports the need to maintain a balance between skills and challenges. High conscientiousness involves emotional and motivational mechanisms that cause an individual to engage in flow-enhancing activities (Tian & Ou, 2023). Also, people with increased extraversion tend to be more active and experience more positive effects

necessary for the flow state. Last but not least, as Heller's study, Bullerjahn and von Georgi (2015) argued, people with increased neuroticism experience negative affections and anxiety more often, which makes it difficult to detach from external events and worries. Detachment is another essential feature of the flow state. Thus, neuroticism affects cognitive and emotional processes of general importance for flow, regardless of task (Tian & Ou, 2023).

Regarding the main hypotheses of the present study, those aimed at increasing the flow state through behavioral manifestations following certain personality traits, we can say that participants who acted based on the three personality dimensions traits (extraversion, conscientiousness, emotional stability) reported a higher flow level than those from the control group. Zelenski et al. (2012) demonstrated how simply acting like an extrovert for a short time increases well-being. Another study by Margolis and Lyubomirsky (2019) conducted over two weeks reveals the same result, analyzing other concepts, including flow. As a general idea, the fact that people perform behaviors specific to these three personality traits leads to increased flow. However, although the flow state was higher for those who benefited from the intervention than those in the control group, the difference was only visible at the last measurement (day 10). A possible explanation is that it takes a transition time for a person to behave differently or use behaviors other than usual. Someone must gradually adopt new behaviors or act in ways distinct from their usual ones (Grimley et al., 1994). It is also a process that requires dedication and effort, and individuals must stay committed to their goals and focus on the positive changes they want. The existence of outlines gives another explanation, but they have not been eliminated for reasons of research ethics.

Other data from this research reveal that the number of activities carried out by those in the experimental group is closely related to their flow level. In other words, the more the participants perform specific actions to high levels of extraversion, conscientiousness, and emotional stability, the more flow they will experience. Last but not least, the present study shows how participants who received the intervention reported higher happiness than those who did not benefit. Studies by Fritz and Avsec (2007) and Tse et al. (2021) highlighted a positive relationship between flow experience and well-being. Also, studies like the ones of Fleeson et al. (2002) or McNiel et al. (2010) showed how acting like an extrovert can increase reported happiness levels and even reduce depression. Expanding upon the groundwork laid by previous research and pinpointing areas for improvement, our study stands out for its significant contributions in incorporating comprehensive guidance. We provide participants with thorough instructions and practical examples of behaviors and activities to follow. In other words, current research shows that people who carry out activities specific to high levels of extraversion, conscientiousness, and emotional stability tend to become happier.

5.1. Theoretical and practical implications

Our study has several important theoretical and practical implications. Regarding the theoretical contribution of our paper, we managed to highlight once again the relationship between the three personality dimensions (conscientiousness, extraversion, neuroticism) and flow. But the most important discovery is the usefulness of behavioral manifestation intervention based on the three dimensions for increasing flow and, indirectly, happiness. Implicitly, it has been shown that by acting like extroverted, conscientious, and emotionally stable people, you can experience flow more frequently and overall be happier.

From a practical perspective, the current study offers support for implementing training and interventions at the organizational level to help employees adopt behaviors specific to certain personality traits and thereby experience more flow. Given the established correlation between the flow state and performance (Van den Hout et al., 2016; Liu et al., 2023), our findings underscore the indispensability of incorporating flow-enhancing strategies into organizational practices. The intervention crafted for this

study stands as a testament to our commitment to pushing the boundaries of knowledge. Its exclusivity, thus far confined to the realm of our research, beckons for future exploration and refinement. Subsequent studies have the potential to either replicate or build upon the novel facets uncovered, thereby advancing our understanding of the interplay between personality dimensions, behavioral interventions, and the state of flow.

We propose practical recommendations for organizational practice and policy in light of these findings. Firstly, organizations should consider integrating tailored training programs that focus on developing behaviors associated with extraversion, conscientiousness, and emotional stability. These programs can serve as a proactive means to enhance employee well-being and, in turn, organizational performance. Secondly, policies should be crafted to create a supportive and adaptive organizational culture that encourages an environment where individuals flourish in the flow state, ultimately contributing to a more vibrant and productive workplace.

5.2. Limits of the study and future approaches

A limitation of the current study is that no specific method was used to verify the degree of fulfillment of the activities carried out by the participants; they only received a self-report checklist. Further studies should address this limit by introducing more objective verification methods. A second limitation may be repeated measurements for the FSS-2 questionnaire. The solution would be to randomize the order of questions or use a parallel form. Another limitation is the existence of outlines for FSS-2 measurements and subjective happiness. However, they were not excluded from the research because they did not affect the assumptions about distribution and homogeneity, except for the FSS-2 measurement on day 4 (Skewness > 2) and subjective happiness (Levene <.05). Future studies should replicate the results and could use, in addition to the self-report measurements, some objective, observational measurements. Also, analyzing a possible mediation effect between personality and happiness through the flow experience may be of interest to future studies.

6. Conclusions

In summary, this paper carries significant implications for the domains of positive psychology and behavioral change. It introduces an intervention that provides tangible and practical examples of behaviors. By emphasizing concrete examples of behaviors that facilitate the state of flow, this study contributes to a deeper understanding of how to promote psychological experiences. This research not only sheds light on the concept of flow but also offers a valuable approach for individuals looking to improve their overall happiness.

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Appendix 1

Instructions - Behavioral Change Intervention

The intervention within this study aims for a behavioral change. In other words, we propose you change your behavior for the next ten days**.** Below, you will find three personality traits (extraversion, conscientiousness, emotional stability), each with six general advice and some examples of activities. Please try to do as many activities as possible from the table below in the next ten days. It is essential to focus on doing activities from each set and not just from one or two.

Personality traits	General advice	Instructions (these instructions are examples, but you can take any other actions that you feel will help you to achieve the general advice).	Done (X)
EXTRAVERSION	BE FRIENDLY	Initiate a conversation with a new person or person you haven't really interacted with. Maintain a friendly attitude.	
		Tell someone a personal story.	
	"I LIKE PEOPLE"	Participate in a group activity and/or in places with more people (e.g., class, concert, sports match, shopping mall, etc.) and enjoy being among them.	
	TAKE THE INITIATIVE AND SAY YOUR OPINION	Take the initiative/ take the first word in a discussion. Say and support your point of view (in the family, at school, at the workplace, etc.).	
		Make a presentation in front of several people. Present your arguments in front of others, enjoying the opportunity to show your influence on them (want that people see you, that they are paying attention to you, and listen to what you have to say).	
	BE ACTIVE	Do as much physical activity as possible - at least three different activities (e.g., walks, running in the park, gym, etc.).	
	STIMULATE YOUR SENSES	Try things and activities that stimulate your senses, even something you've never tried before. (e.g., loud rhythmic music, spicy food, very bright/flashy colors, activities that increase adrenaline, etc.).	
	BE HAPPY/ POSITIVE	Smile at least ten times/a day (either to people thinking about something pleasant or admiring something beautiful).	
		Tell someone a funny story.	

		Think of the good things in your life and think that good things will happen to you.	
		Enjoy the small and ordinary things (e.g., sunrise/sunset, coffee taste, etc.).	
CONSCIENTIOUSNESS	"BELIEVE THAT YOU CAN"	Take up a new activity or do something challenging, thinking you can do it. Tell yourself you can and do the job.	
	BE ORGANIZED	Plan your activities for the current week in time intervals (e.g., Tuesday, 2 - 4 p.m., I'm working on a presentation for the seminar). Stick to this schedule.	
		Maintain cleanliness and order around you (personal room, work environment, etc.).	
	RESPECT YOUR PRINCIPLES	Take responsibility for everything you (have to) do (keep your obligations/duties and promises, don't break the rules, be honest).	
	GIVE YOUR BEST TO ACHIEVE YOUR GOALS	Choose a goal/standard and give everything you can to achieve it. (e.g., "I will understand and master this course."). Be persistent; don't give up even if you fail on the first try.	
	DON'T LET YOURSELF DISTRACTED /DISTURBED FROM YOUR PURPOSE	Set a current, immediate goal and try to accomplish it, ignoring possible distractions (e.g., "I want to pay attention to this course. I ignore the mobile phone and do not get involved in discussions with my colleagues.").	
	THINK ABOUT THE CONSEQUENCES BEFORE YOU ACT	Before acting/making a decision, make a list of benefits and consequences, weigh them wisely, and choose the optimal alternative (e.g., When shopping, think about whether you need the thing you want to buy, if it's worth the price if you can find a better alternative, etc.).	
EMOTIONAL STABILITY	GIVE UP THE FEAR	Do not worry. Avoid thinking that something bad will happen. Refrain from worrying about anything.	
		Choose a minor activity you are afraid of and do it (e.g., speaking in a class, dancing in front of people, starting a conversation with a stranger, etc.).	
	STAY CALM	Treat any information calmly. If a person says or does something that bothers you, if things don't happen the way you want them to, or if you feel angry, try not to get affected. You can use specific relaxation techniques (e.g., breathing, counting).	
	DO NOT BE	Find your energy and strength to do what you set	

	DISCOURAGED	out to do. Don't get discouraged, and don't blame yourself when something goes wrong. Just think of solutions to solve that situation.	
	QUIT THINKING, "WHAT OTHERS WILL SAY ABOUT ME?"	Do an activity the way you want, without thinking about what other people think about you (e.g., Give your honest opinion about a topic). Try not to care about what other people think about you.	
	DON'T BURST OUT / DON'T GET MAD	Control your negative emotions. Don't let them manifest on the surface. If something negative happens to you or someone does something that bothers you, don't become violent (e.g., don't scream, cry, or use drugs or alcohol), but try to find within yourself the strength to calm down.	
	BE SURE OF YOURSELF	If you are faced with a stressful situation (e.g., giving a presentation), don't avoid it. Try to control the situation. Think of possible solutions to solve it.	