

# THE FLOW EXPERIENCE IN UNIVERSITY STUDENTS AND THE BLOSSOMING OF MENTAL HEALTH

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## Abstract

Flow, or optimal experience, is a state of deep immersion in an activity associated with a deep sense of fulfillment. While the existing literature often focuses on Flow in individual, competitive, or athletic contexts, there is a need to explore its induction in non-performance group settings to foster general psychological well-being. This study aimed to investigate the effectiveness of a novel, short-term training program, specifically designed to induce Group Flow and to promote Flourishing, improving mental health metrics among university students. A training program, totaling 13 hours over four structured sessions, was developed. The intervention was built upon two main pillars: 1) the practice of Mindfulness fundamentals, spanning all sessions; and 2) the use of introspective-exploratory techniques designed to progressively enhance a sense of personal and interpersonal connectedness, culminating in exercises involving the entire group. The program was tested on a heterogeneous sample of 24 university students (N=24), drawn from the "Rinaldo Franci" Conservatory in Siena and the bachelor degree program in Psychological Sciences and Techniques at the University of Urbino "Carlo Bo". The study utilized a pre-post quantitative design. Participants were assessed using two standardized and validated instruments: the Flourishing Scale (FS) and the Flow Short Scale (FSS). Statistical analyses (paired samples t-tests) were conducted on the mean scores. Additionally, qualitative assessments regarding perceived enjoyment and learning were collected post-training, complemented by a three-month follow-up focus group. Statistical analyses revealed statistically significant differences in the mean scores between the pre- and post-intervention phases for both scales. Participants demonstrated a reliable increase in their self-reported Flow experience ( $p < .05$ ) and in their overall level of Flourishing ( $p < .05$ ) after completing the training. These quantitative findings were strongly corroborated by the qualitative data, which indicated a noticeable and sustained positive shift in self-perception and relational efficacy among participants. The preliminary results indicate that the structured induction of Group Flow represents a highly promising and useful intervention. This model could be effectively integrated into university curricula to develop crucial transversal skills and serve as a reliable tool for the proactive, continuous promotion of mental health and the discovery of new internal psychological resources among students.

**Keywords:** *Flow, flourishing, mental health, training program, psychological well-being.*

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## 1. Introduction

In recent years, the psychological well-being of university students has become a central concept for academic institutions worldwide. The transition to higher education often involves significant stressors, including academic pressure, social reorganization, and identity development. Within this framework, the concept of "Flow" – first introduced by Csikszentmihalyi (1975) – offers a powerful lens through which to promote mental health. Flow is defined as a state of optimal experience where an individual is fully immersed in an activity, with a shift in perception in the sense of self and time and in which there is a profound fulfillment which is not dependent on external goals, but on the perceived state of inner harmonious order.

While most research has focused on Flow in individual performance (e.g., sports, arts, or work), recent studies emphasize the importance of Group Flow (Sawyer, 2003). Group Flow occurs when a collective unit reaches a state of shared synergy, leading to enhanced interpersonal connectedness and mutual support. This study hypothesizes that inducing Group Flow in a non-competitive, psychoeducational setting can significantly impact "Flourishing" – a multi-dimensional construct representing social and psychological well-being (Diener et al., 2010).

Following the theoretical framework of Beyköylü, Vervaeke, and Meling (2025), we explored how a structured intervention based on mindfulness and collective resonance could trigger to a certain degree a non-ordinary state of consciousness and a "blossoming" of internal resources. Our primary research questions were: 1) Can Group Flow be effectively induced through a brief 13-hour training? and 2) Does this experience correlate with a measurable increase in students' overall flourishing?

## 2. Methods

### 2.1. Participants

The study involved a heterogeneous sample of 24 university students (N=24; 11M and 13 F). The sample was intentionally diverse to test the program's adaptability, including students from the "Rinaldo Franci" Conservatory in Siena (artistic/musical background) and the bachelor's degree program in Psychological Sciences and Techniques at the University of Urbino "Carlo Bo". Participants were free to join by registering their interest via email. No remuneration was provided. The group formed consisted of students with a mean age of 23 and with no previous experience of meditation practices nor any prior knowledge of the topic of Flow and its meaning.

### 2.2. The training program structure

The intervention consisted of an intensive 13-hour program divided into four structured sessions over three days. The methodology integrated two core pillars:

**Mindfulness Practice:** Techniques focused on present-moment awareness and non-judgmental observation, breathing exercises used as a "grounding" tool at the beginning and end of each session.

**Introspective-Exploratory Techniques:** A series of progressive exercises designed to gain awareness about subtler layers of one's own experience and to shift focus from the individual to the collective. These included movement-based tasks, shared storytelling, and group problem-solving and visualizations activities designed to foster "deep resonance" among participants and to foster insights about one's own thinking and emotional processes. Moreover, the exercises and practices were designed so as to involve the participants in all kinds of combinations: the individual, one-to-one, subgroups of about 3-4 participants, and finally the whole group together.

### 2.3. Instruments

A pre-post quantitative design was utilized. Participants completed two validated scales at baseline (Pre-test) and immediately following the final session (Post-test):

- Flow Short Scale (FSS) (Rheinberg, Vollmeyer & Engeser, 2003): To measure the components of flow (e.g., absorption, fluency of performance).
- Flourishing Scale (FS) (Diener et al., 2009): To assess self-perceived success in areas such as relationships, self-esteem, and purpose.
- Furthermore, qualitative data were collected through "First Impressions" reports, filled by participants immediately after the final session and a 3-month follow-up, resulting in a focus group evaluating the long-term impact of the experience.

## 3. Results

The statistical evaluation of the training program's efficacy was conducted through a dual approach, integrating quantitative longitudinal data with qualitative insights gathered at the end of the sessions and during the three-month follow-up.

### 3.1. Quantitative analysis: Flourishing and flow states

To determine the impact of the 13-hour intervention, a series of paired samples t-tests were performed on the mean scores of the two primary psychometric scales. The analysis focused on the shift from baseline (Pre-test) to the immediate conclusion of the training (Post-test). (Table 1)

Regarding the Flourishing Scale (FS), which measures the respondents' self-perceived success in important areas such as relationships, self-esteem, and purpose, the results indicated a significant upward trend. Participants reported a higher level of overall psychological functioning after the intervention ( $M = 46.5, SD = 5.85$ ), compared to the pre-test ( $M = 43.0, SD = 5.71$ ),  $t(23) = -4.44, p < .001$ . The effect size for this increase was large ( $d = 0.91$ ).

Similarly, scores on the Flow Short Scale (FSS), which measures the perceived flow state of respondents and the degree of their absorption in action, showed a statistically significant increase from pre-test ( $M = 52.6$ ,  $SD = 5.46$ ) to post-test ( $M = 61.1$ ,  $SD = 7.79$ ),  $t(23) = -4.95$ ,  $p < .001$ , representing a substantial effect size ( $d = 1.01$ ).

Table 1. Mean comparison and statistical analysis between Pre and Post Intervention ( $N = 24$ )

Variabile	Pre-test $M$	Pre-test $SD$	Post-test $M$	Post-test $S$	$t(23)$	$p$ -value	Cohen's $d$
Flourishing (FS)	43	5.71	46.5	5.85	- 4.44	<.001	0.91
Flow Short Scale (FSS)	52.6	5.46	61.1	7.79	- 4.95	<.001	1.01

### 3.2. Qualitative evaluation and long-term impact

To complement the quantitative data and delve deeper into the participants' subjective experience, a qualitative analysis was conducted by means of "First Impressions" reports collected at the end of the last session of the intervention and by means of the three-month follow-up focus group. The transcripts and texts were analyzed following the principles of Thematic Analysis (Braun & Clarke, 2006), which allowed us to identify several key themes relating to the training's effects: students frequently used terms such as "resonance," "deep connection" and "temporary suspension of judgment" to describe the group exercises. Mostly, they found the training program emotionally challenging and impactful.

The most significant findings, however, emerged from the 3-month follow-up, during the focus group. This delayed assessment was crucial to verify the sustainability of the "flourishing/blossoming" effect. The analysis of the focus group transcripts highlighted three main themes:

**Sustained Relational Efficacy:** Participants reported feeling more "proactive" and less "defensive" in their academic social circles.

**Reduction in Ruminative Thinking:** Several students noted that the mindfulness techniques learned during the Flow induction sessions were still being used to manage exam-related anxiety and some of them started to join meditation classes.

**Vividness of Connection:** The sense of "interpersonal connectedness" developed during the exercises remained a vivid psychological resource.

Finally, another remarkable finding deriving from the Focus-Group was that some students with no conceptual knowledge about the topic of Flow, spontaneously described some subdimensions of the construct, such as the shift in perception of time/space, of mind-body synchronization, and of the sense of self. Also, it is noteworthy the interest and enthusiasm shown by the young population, albeit a small sample, in the introspective themes aimed at self-knowledge, exploring their own thought processes, and increasing their expressive abilities in sharing their inner world.

## 4. Discussion, limitations and conclusions

The results of this study suggest that Group Flow is not just a spontaneous occurrence but can be "structured" and taught. The significant increase in both Flow and Flourishing scales supports the idea that collective optimal experiences serve as a catalyst for mental health by inducing a notable shift in individual and collective perception. It was notable how participants moved from fragmented attention toward a state of collective immersion. In particular, one student remarked: "The training didn't just give me a technique; it changed the way I feel when I am in a group". In other words, participants were interested in the transformative power of the experience, meaning that besides the shared contents, they enjoyed the change in their way to make connection with themselves and with the others. We still wish to implement the project also exploring more in depth the possible association between Meaning in life and Flow, since these constructs seem to have interesting relationship between each other (Delle Fave, 2009).

Future research should include an active control group to further validate these preliminary findings. Due to logistical and organizational constraints, it was not possible to structure a more extended intervention, with regular meetings, which would perhaps have helped to integrate more effectively the shared content and produce greater and more far-reaching changes. This study captured immediate changes following the 13-hour training program. However, it is not yet possible to determine whether these benefits to mental health and psychological well-being remain stable over time. Longitudinal research including 6-month follow-up assessments is needed to evaluate the long-term persistence of the effects.

The research also highlighted that a group of approximately 10 up to 24 participants is an adequate size if there is a single workshop leader. A larger group would make it more difficult for the leader to adequately address the emerging needs of individuals. While the results reached statistical significance, such a limited number of participants reduces the statistical power and prevents the findings from being generalized to the broader university population. Furthermore, the participants were drawn from specific academic backgrounds (Psychology and Music Conservatory). These students may already possess a higher-than-average predisposition toward introspection or flow experiences (particularly in the case of musicians), which may have influenced the outcomes. Subsequent research should aim to replicate this intervention with larger and more diverse samples (e.g., students from STEM disciplines or working professionals).

In conclusion, Flow is a phenomenon of great interest, as it is represented and registered in almost all demographic samples. It does not depend on gender, age, specific culture, or other socioeconomic variables (Csikszentmihalyi, 1990). It is therefore a universal phenomenon and, as such, it could also be studied to better understand human evolution and the growth potential of the individual and of communities (Vervaeke, Ferraro & Herrera-Bennett, 2018). Therefore, investigating the Flow experience in a non-competitive context can lead to the exploration of a variety of related constructs, concerning mental health, understood not as the mere absence of illness, but as a continuous flourishing and blossoming of new resources and possibilities for relating to the world. We hypothesize that Group Flow, if housed within an appropriate framework, can provide a contribution to the fulfillment of the individual's needs for growth and that it can be helpful to gain insight about meaningful issues of one own's inner and outer life and therefore help in advancing on a path of conscious flowering. Finally, integrating such programs into university curricula—perhaps through the use of Open Badges to certify these transversal skills—could represent a proactive strategy for student well-being.

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