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## Introduction

Flow refers to a state of complete immersion in a task, to the point that the individual becomes unaware of their personal needs and of the environment around them. It is an aspect of positive psychology that was first identified by Mihali Csikszentmihalyi in the 1970s (Chen, 2007). Flow is often also referred to as being "in the zone" (2007), possibly a phrase more commonly known and relatable to. It is claimed that research into flow may be able to unlock the secrets of a happy life. By understanding the roots and conditions necessary to achieve this state of pure joy and immersion in an activity, it may be possible to further advance knowledge of how best to achieve happiness and positivity (Nakamura & Csikszentmihalyi, 2002). Many aspects exist in the concept of flow, and it is through understanding the different facets of its history and theories that it may become possible to fully understand this phenomenon.

## History

Flow-like states have been experienced and described across cultures and throughout history. Examples of flow can be seen in Buddhism, Taoism and Hinduism.

- In **Buddhism** and **Taoism** teachings talk of a state of mind known as the "action of non-action" or wu wei (Taoism), which is very similar to the concept of flow (Wallace & Shapiro, 2006).
- In **Hinduism**, writings such as Ashtavakra Gita, and writings from the Yoga of Knowledge, such as Bhagavad-Gita, also make references to a mental state similar to that of flow. Notably important to the theme of flow are two of the Puruṣārtha (life goals): Kama, meaning **pleasure**, sensuality, and **emotional fulfillment**; and Moksha, meaning freedom, **self-realization** and self-knowledge (Sharma, 1999).

Flow research became popular in the 1980s - 1990s, with **Csikszentmihalyi** and his colleagues in Italy at the forefront of the groundbreaking research. In 1975, an investigation by Csikszentmihalyi (***Beyond boredom and anxiety: Flow***) interviewed people of different professions to see how they felt and thought throughout their work day, and found that their experience was similar during the most engaging part of their job. The first of these interviews were with artists, such as sculptors, who became completely immersed in sculpting their artwork, disregarding their basic needs, such as that for food, water and sleep. **This was the first mention of the term flow.** In fact, the term "flow" is a metaphor taken from a participant that was interviewed. **Csikszentmihalyi was first to describe flow as an independent process which could be achieved in a range of activities.**

However, previous work related to the topic can be found in psychology and also other fields. Researchers interested in **optimal experiences** and the **emphasis of positive experiences** also studied the theory of flow at this time. For instance, during the development of the **humanistic tradition** in psychology, the theory of flow was used abundantly, in the theories of psychologist such as Maslow and Rogers who developed concepts of free will and self-determination, and created theories more centered around positive facets of human nature (Nakamura & Csikszentmihalyi, 2009).

**Maslow (1964)** described what he defined as **peak experiences**, which were **transcendental experiences that induced a sense of altered time and a loss of self-consciousness**, much like flow. A similar concept, **peak performance**, was later proposed by **Privette (1983)**. Privette defined this as an "**episode of superior human functioning**". Furthermore, **Deci and Ryan's (1984)** concept of **intrinsic motivation** overlaps with the idea of flow. Finally, **Rogers (1961, 1980)** developed the concepts of the "**fully functioning person**" and "**the person of tomorrow**" that seem to relate to Csikszentmihalyi's (1990) concept of "**the autotelic personality**" (discussed in detail below).

As can be seen, flow has received a lot of attention over the past half decade. Today flow has become one of the most frequently studied themes in positive psychology. Some of the more recent work can be seen below.

## Current theories

Research into flow covers several bases, looking at aspects from the conditions needed for flow to occur, in terms of environment and the task, to more intrinsically based individual differences in personality type.

### Conditions for flow

Current theories suggest that the task must strike a delicate balance between being too challenging and too easy (Nakamura & Csikszentmihalyi, 2002). A task that is too simple will be difficult to become fully engrossed in and therefore the individual will struggle to achieve a state of flow. However, the same is true of a task that is too difficult. Too challenging and it is more likely that the individual will give up or become frustrated and lose interest (Chen, 2007). The balance between challenge and ability can be illustrated effectively

through graph format:

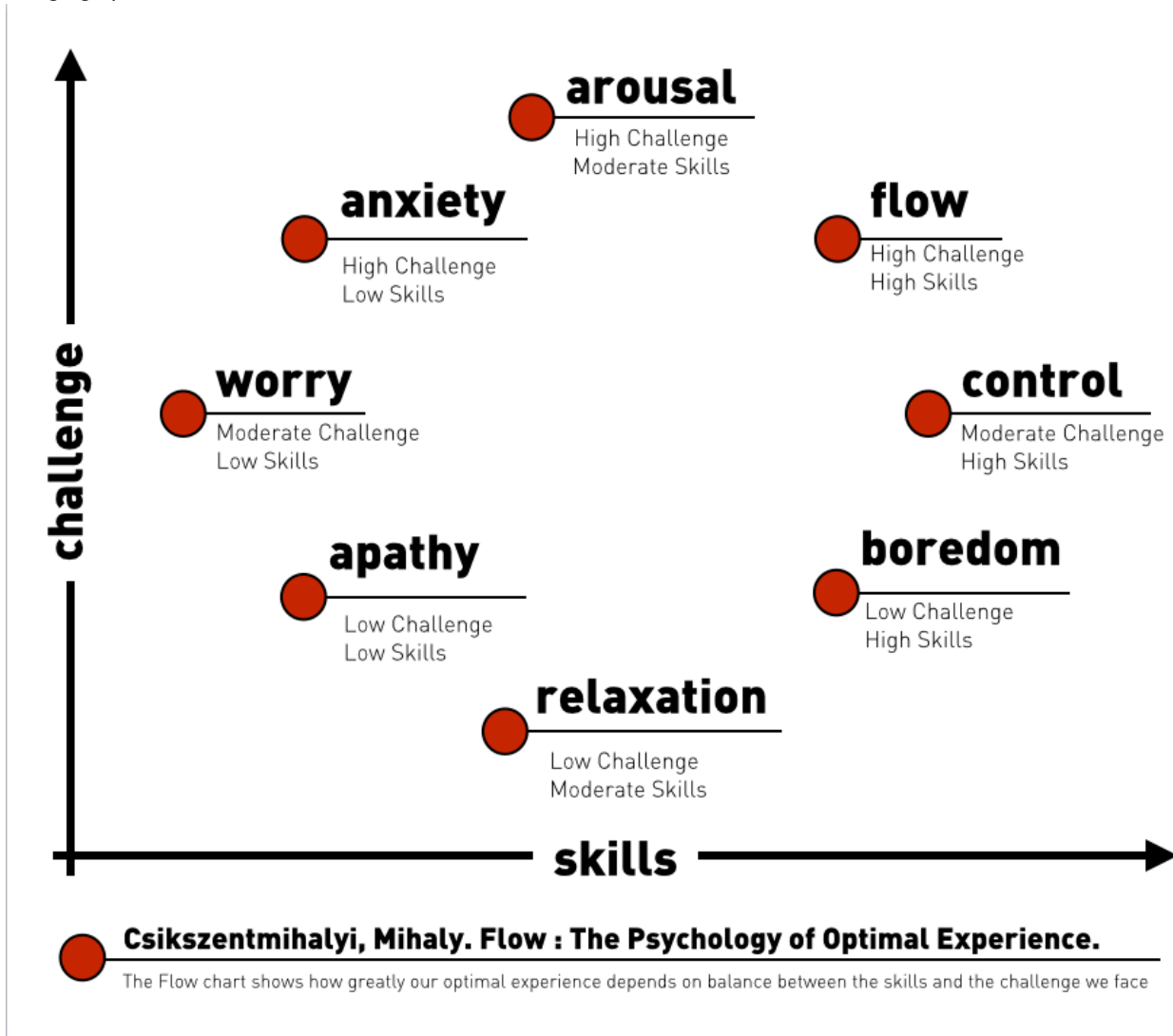


Figure 1: Visual representation of the balance that must be achieved between challenge at ability

As can be seen in Figure 1, failure to achieve the optimum conditions in terms of the task can have detrimental consequences to the ultimate achievement of a flow state. Apathy, boredom and anxiety are among the negative consequences that can be felt (Csikszentmihalyi & Csikszentmihalyi, 1991), highlighting the importance of achieving the correct conditions, as the theory states. It is also claimed that the experience of the task must be so intrinsically rewarding that the final outcome or product of the activity is simply an excuse for having engaged in it in the first instance (Nakamura & Csikszentmihalyi, 2002). At the same time, however, the task must be able to provide instant feedback on the individual's progress, in order for them to maintain the flow state without losing interest (Nakamura & Csikszentmihalyi, 2002).

### Autotelic personality

Current theories state that personality type may have an influence on the likelihood or not of an individual achieving a flow state. The autotelic personality has been described as one which possesses traits of internal drive, exhibiting elements of purpose and curiosity (Csikszentmihalyi, 1997).

In essence, the autotelic personality is composed of curiosity, persistence and engaging in tasks for intrinsic reasons.

It is believed that individuals who score highly on ratings of being autotelic in nature will find it easier to enter a flow state, a claim studied by Asakawa in 2004.

The study looked at Japanese college students to determine whether or not the balance between challenge and ability had to be met, and if a difference existed between autotelic and non-autotelic individuals (Asakawa, 2004).

The results were found to support current theories on flow.

It was found that autotelic individuals were more likely to opt to engage in activities in which their perceived level of ability was lower than he perceived challenge of the task, i.e. they opted for more challenging situations than non-autotelic participants. This implies that inherent differences exist between these two groups of individuals, differences which may have consequences on not only their ability to enter a flow state, but also their likelihood of engaging in situations where flow is possible.

## Mechanisms

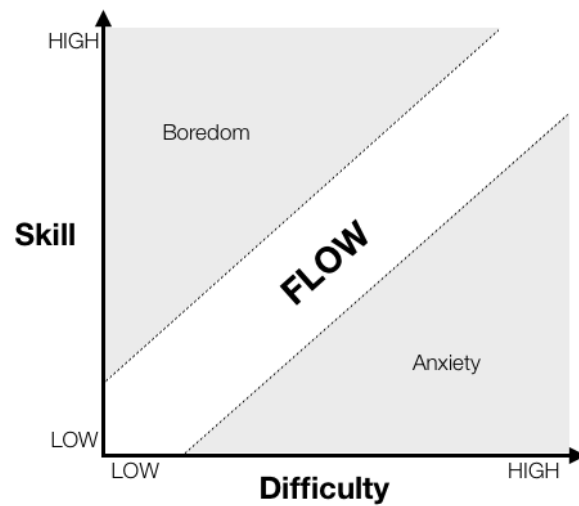
It is stated by Mihaly Csikszentmihaly (1990) that there are ten components of flow. However, not all are required simultaneously for flow to occur; the more components fulfilled the more immersive the flow. These components are as follows:

- 1 - Clear, attainable but challenging goals.
- 2 - Strong concentration and focused attention.
- 3 - The activity being intrinsically rewarding.
- 4 - A loss of feeling of self-consciousness.
- 5 - Timelessness; being so focused on the activity that one becomes unaware of time passing.
- 6 - Immediate feedback.
- 7 - A balance between skill level and the challenge presented; skill level must match challenge.
- 8 - The feeling of having control over the situation and the outcome.
- 9 - Losing awareness of physical needs - e.g hunger, sleep.
- 10 - Complete focus on the activity itself.

These components were later refined by Schaffer (2013) into seven conditions:

- 1 - Knowing what to do
- 2 - Knowing how to do it
- 3 - Knowing how well you are doing
- 4 - Knowing where to go (if navigation is involved)
- 5 - High perceived challenges
- 6 - High perceived skills
- 7 - Freedom from distractions

In order to measure flow states, Schaffer published the Flow Condition Questionnaire (FCQ), which measures each of the seven conditions. When all seven conditions are fulfilled, the ultimate state of flow is reached. Flow can only occur when the activity is active, as opposed to passive. For example, watching TV is a passive activity whereas playing a video game is an active activity. The individual is required to do something in order to experience flow. During a flow state, the individual is fully engrossed in the task, losing awareness of their surroundings and bodily states. There are few activities which can have this effect. Csikszentmihalyi states that the mind can attend to 126 bits of information per second. Simple tasks such as speaking require 40 bits of information per second, thus only 2 other tasks can be focused on during this. It is for this reason that we actively decide what to focus our attention on. However, a flow state uses up all of the attention, thus it is one of the only times the mind is completely engrossed. The key concept of flow is that the skill level matches the challenge level, as illustrated in this graph.



If difficulty level rises above skill level, anxiety may occur as the individual cannot keep up and will stop enjoying the activity. For example, a tennis player who plays opponents at a much higher skill level and consistently loses may give up if they feel they can never win. However, if skill level rises too high above difficulty level the individual may lose interest as the activity is too easy for them, and thus boring. The tennis player consistently winning games may get bored as there is no challenge for them. There is a delicate balance between skill and difficulty level for inducing a flow state, as Csikszentmihalyi states "*Enjoyment appears at the boundary between boredom and anxiety, when the challenges are just balanced with the person's capacity to act.*"

## **Wild claims**

There are numerous proposed benefits to achieving a flow state, some of which appear to be somewhat dramatic in their assertions. For example, it was claimed that teenagers who were regularly successful in achieving a flow state - named high flow individuals - possess higher levels of self-esteem than low flow teenagers (Csikszentmihalyi & Csikszentmihalyi, 1988). In addition to this, it was also claimed that individuals who were successful in achieving flow states would experience greater long term happiness throughout life (1988). It seems a somewhat bold claim to suggest that absorption in an activity from time to time could have such dramatic consequences for an individual's future happiness and life satisfaction. Does this in fact mean that low-flow individuals are destined for a life of lower self-esteem and greater unhappiness? Despite this claim, it has been suggested that when in the flow state, an individual is so absorbed that they become unaware of their happiness or lack of. If this is the case, there must be an underlying change occurring in order for long term happiness to be affected. The abstract nature of the area makes this difficult to investigate; yet it remains an interesting area for further research.

Flow is often referred to simply as "the psychology of happiness" (Csikszentmihalyi, 2013). This in itself may be viewed as a somewhat wild claim. Pinning down the exact definition of happiness is difficult, as it is an abstract and complex notion. Despite this, flow seems to be heralded as one of the more prevalent research areas currently that may answer the question of how to make people happier.

This may in fact seem to imply that happiness is less of a choice, and to a certain extent is reliant on personality type. If certain personality types are more likely to successfully enter a flow state, according to these claims it is also certain personality types that are more likely to experience happiness. It is claimed that an ability to regularly achieve a flow state allows for personal growth and, to some extent, a level of self-actualisation in the individual (Moneta, 2004).

This counters other theories that view happiness as a matter of choice, that any one can experience, creating an issue in that it is possible people who do not often find themselves able to achieve flow may begin to feel anxious about their ability to find happiness, thereby hindering their attempts further.

If it can be found that there is a definitive link between flow and happiness, perhaps the focus should be less on **who** can achieve flow, and more on **how can everyone** achieve it, perhaps by the identifying individual differences involved and guiding people on how to accurately determine the optimum conditions for achieving flow themselves. That it, if these wild claims are to be believed, of course.

Attempting to understand happiness is difficult, as it is so abstract as a concept. It is possible that the flow state may have an impact on happiness to some degree, yet implying that it is one of the determining factors may remain a wild claim until empirical evidence can support it fully.



Is happiness a choice?

## Consequences

### Positive

"Flow is an innately positive experience, it produces intense feelings of enjoyment" (Csikszentmihalyi, 1988).

### Performance



Those who experience flow while engaging in their area of talent or in academic activities become more able and skilled in the activity, and thus more likely to continue with it in the future. This allows for personal growth: when one is in a state of flow, one must work to master said activity, but maintain the balance of this state by continuously attempting to master more difficult challenges, so as to expand one's skill set. This generates feelings of competence, and finally personal growth (Csikszentmihalyi, Abuhamdeh & Nakamura, 2005).

Although the correlation between flow and high performance is well documented, the causal direction of the effect remains unclear. That is, flow may induce better performance, but, good performance may make flow experiences more likely (Engeser & Rheinberg, 2008). Ultimately, flow experiences in a specific activity may lead to higher performance as flow is positively correlated with a higher subsequent motivation to perform and to improve performance (Csikszentmihalyi, Abuhamdeh & Nakamura, 2005)

### Affect and life satisfaction

Studies have shown that experiences of flow lead to positive affect as well as to enhanced performance (Csikszentmihalyi, 1990; 1997;). Csikszentmihalyi suggests that increasing the time spent in flow makes us more happy and successful in our lives. Those activities which are perceived as "work" and "play" simultaneously are more likely to make us happy (Schmit and Rich, 2000). However, further empirical evidence is needed in order to infer the causal consequences of flow experiences.

### Negative

#### Lack of motivation to endure

The lack of flow can have potentially negative effect in the endurance of a beneficial activity, in that people who do not experience flow in such activities are more likely to abandon the activity as soon as possible. An example of this would be to drop playing the violin as soon as your parents allowed it or you no longer required it for school.

### Addictions

Researchers make a clear distinction between activities which are simply pleasurable and those which are meaningful, that may contribute to a better life (for e.g. Csikszentmihalyi, 1990; Seligman, 2011). For instance, **drug and alcohol** use are activities that offer immediate pleasure, but with time can become dull, and meaningless, and could potentially have harmful negative psychological and physical consequences. Even so called "productive" activities, such as **computer use**, may become addictive and harmful if one becomes dependent on it (Sinnott, 2013). However, a study by Wan and Chiou (2006) on the relationship between players' flow state and their **online games** addiction found that flow state was negatively correlated with addictive inclination in adolescents, and also that flow state was lower in addicts than nonaddicts. Whats more, for addicts, unlike nonaddicts, a lack of game playing generated a sense of dissatisfaction, indicating that their uncontrollable use of games stems from the relief of dissatisfaction rather than the pursuit of satisfaction. In a nut shell, flow is negatively correlated to online games addiction, and may even entail the use of different underlying motivational mechanisms.

## Applications

The concept of flow can be applied to many activities, some to more extent than others.

### Video games

The strongest example of flow in an activity is in video games. One of the many reasons video games create flow is that they often become more challenging as the player becomes more skilled. Many games allow players to "level up" by gaining skill points, and as the player's level gets higher the game becomes more difficult. If the player finds a mission or quest too difficult they can go back and do alternate quests until they level up, then return to the challenge. This means that the game is usually always matched to the player's skill, and it can challenge them but not to the point of creating anxiety or stress, thus ensuring they will not be dissuaded and continue to play. It is for this reason that the games which implement this are the highest selling and most popular - such as World of Warcraft. Many game developers now have a good understanding of how flow works, and thus how to ensure it is not disrupted while playing, and are applying this to the design of games. Games can produce the perfect example of a flow state, as players will often find themselves fulfilling each of Csikszentmihalyi's ten components. Games provide an enjoyable environment in which to learn and succeed, thus engaging attention and raising motivation. (Chen, 2008)

Below is a short video further discussing the concept of flow in video games.

Can Video Games Make You Happy ...  



### Education

Flow can also be applied to areas such as education, music and sports. Csikszentmihalyi describes "overlearning", a technique used in education. This occurs when the mind visualises performance as a singular action rather than a set of actions. As with the previous example in video games, challenging tasks that require the individual to push themselves/their skills are the tasks that will lead to a flow experience.

### Music

Musicians often describe being in a state of flow. This can occur collectively when playing in a group or individually. Recently, research has found that the frequency of entering flow states was influenced by the amount of time spent practicing, and even the level of emotional intelligence, as well as there existing a positive relationship between flow and improved performance (Marin & Bhattacharya, 2013)

### Sports

Sports psychology often refers to the experience of flow occurring during elite sports, such as motor racing, skiing and martial arts. Many athletes and sportsman have described how their performance increases during flow states (Jackson, 1992) similar to musicians, as previously mentioned.

## **Future Research**

In addition to music, sports and video games, flow experiences can be found in a wide range of areas. For example, the designers of computer software often aim for users to achieve a flow state. It has been found that flow was linked with exploratory use behaviour, and in turn increased computer use (Ghani & Deshpande, 1993). This suggests that a flow state can positively influence the user experience, and thus should be implemented in software design. However, research in this area has been limited, therefore future research could attempt to explore this area in more depth.

## **Workplace**

There is evidence to support that flow can be found in the workplace, depending on conditions. A study of 279 nurses found that experiencing flow during work decreased exhaustion (Zito et al., 2015). Future research could focus on ways to create flow in the workplace. Similarly, flow states can be experienced during education. It has been found that adolescents experienced flow during school work when "the perceived challenge of the task and their own skills were high and in balance, the instruction was relevant, and the learning environment was under their control" (Shernoff et al., 2003). If flow is able to increase productivity in high school students and workers alike, future research should look at how this could be achieved. It has also been found that flow experiences are positively related to team performance. Team members are motivated by the team goal commitment, and moderated by the information exchanged between team members (Aube et al., 2013). This could be applied to workplaces, as managers and leaders could encourage information exchange among their staff/members, in order to try and create the flow experience.

## **Marketing**

In addition to this, the concept of flow can also be found in marketing/advertising. It has been found that flow can positively contribute to online shopping experiences, and can increase purchase intention (Lim, 2014) Furthermore, it has been found that on a travel website, flow mediated three website 'atmospheric cues' (informativeness, effectiveness and entertainment) with regards to purchase intention and satisfaction with the website (Gao & Bai, 2014) By encouraging flow states to occur in consumers, businesses could increase profits. Future research could aid in developing online shopping websites which are enjoyable and effective to use and thus create flow states.

## **Negative effects**

Conversely, flow can have detrimental effects. Research has found that flow can have direct and significant effects on compulsive smartphone use (Zhang et al., 2014), in addition to flow experiences contributing to individuals spending long periods of time playing video games. This could potentially cause health problems if use becomes addictive. Future research should investigate the potential negative effects of flow.

## **Further Reading**

### **Experimental analysis**

Keller, J., & Blomann, F. (2008). Locus of control and the flow experience. An experimental analysis. *European Journal of Personality*, 22, 589-607.

### **How to control flow**

Csikszentmihalyi, M. (2014). Flow (pp. 227-238). Springer Netherlands

### **Games**

Chen, J. (2008). Flow in Games. MFA Thesis

### **Cross-Cultural Advancements in Positive Psychology**

Delle Fave, A. (2015). Cross-Cultural Advancements in Positive Psychology (1st ed.). Springer.

### **Consequences of Flow**

Landhäußer, A., & Keller, J. (2012). Flow and its affective, cognitive, and performance-related consequences. In S. Engeser (Ed.), *Advances in flow research* (pp.65-86). New York: Springer.

### **Music**

Parncutt, R., & McPherson, G. (Eds.). (2002). *The science and psychology of music performance: Creative strategies for teaching and learning*. Oxford University Press.

## Exam performance

Schüler, J. (2007). Arousal of flow experience in a learning setting and its effects on exam performance and affect. *Zeitschrift für Pädagogische Psychologie*, 21, 217-227.

## Sport

Young, J., & Pain, M. (n.d.). The Zone: An Empirical Study. The Online Journal of Sport Psychology. [http://www.athleticinsight.com/Vol1Iss3/Empirical\\_Zone.htm](http://www.athleticinsight.com/Vol1Iss3/Empirical_Zone.htm)  
style="margin-bottom:0px;">

## Business and leadership

Visser, C. (2004). Good business: Leadership, flow, and the making of meaning. *Choice Reviews Online*, 41-4757.

## References

- Asakawa, K. (2004). Flow experience and autotelic personality in Japanese college students: How do they experience challenges in daily life? *Journal of Happiness Studies*, 5(2), 123-154.
- Aube, C., Brunelle, E., Rousseau, V. (2014) Flow experience and team performance: The role of team goal commitment and information exchange, *Motivation and Emotion*, 38(1), p120-130
- Chen, J. (2007). Flow in games (and everything else). *Communications of the ACM*, 50(4), 31-34.
- Csikszentmihalyi, M. (2013). *Flow: The psychology of happiness*. Random House.
- Csikszentmihalyi, M. (1997). *Finding flow: The psychology of engagement with everyday life*. Basic Books.
- Csikszentmihalyi, M. (1990). *Flow: The Psychology of Optimal Experience*. Harper & Row.
- Csikszentmihalyi, M., & Csikszentmihalyi, I. (Eds). (1988). *Optimal experience*. Cambridge: Cambridge University Press.
- Csikszentmihalyi, M., & Csikszentmihalyi, M. (1991). *Flow: The psychology of optimal experience*, 41. New York: HarperPerennial.
- Csikszentmihalyi, M. (1975). Beyond boredom and anxiety. Jossey-Bass Publishers. pp. 10
- Csikszentmihalyi, M.; Abuhamdeh, S. & Nakamura, J. (2005), "Flow", in Elliot, A., *Handbook of Competence and Motivation*, New York: The Guilford Press, pp. 598-698
- Engeser, S., & Rheinberg, F. (2008). Flow, performance and moderators of challenge-skill balance. *Motivation and Emotion*, 32, 158-172
- Gao, L., Bai, X. (2014) Online consumer behaviour and its relationship to website atmospheric introduced flow: Insights into online travel agencies in China, *Journal of Retailing and Consumer Services*, 21(4), p653-665
- Ghani, J., Deshpande, S. (1993) Task Characteristics and the Experience of Optimal Flow in Human-Computer Interaction, *The Journal of Psychology: Interdisciplinary and Applied/abstract content*, 128(4), p381-391
- Jackson, S., & Roberts, G. (1992). Positive performance state of athletes: Towards a conceptual understanding of peak performance. *Sport Psychologist*, 6, 156-171
- Marin M and Bhattacharya J (2013) Getting into the musical zone: trait emotional intelligence and amount of practice predict flow in pianists. *Frontiers in Psychology* 4:853.
- Moneta, G. B. (2004). The flow experience across cultures. *Journal of Happiness Studies*, 5(2), 115-121. doi: 10.1023/B:JOHS.0000035913.65762.b5
- Nakamura, J., & Csikszentmihalyi, M. (2009). 18 Flow Theory and research. *Oxford handbook of positive psychology*, 195.



- Nakamura, J., & Csikszentmihalyi, M. (2002). The concept of flow. *Handbook of Positive Psychology*, 89-105.
- Rheinberg, F., Manig, Y., Kliegl, R., Engeser, S., & Vollmeyer, R. (2007). Flow during work but happiness during leisure time: goals, flow-experience, and happiness. *Zeitschrift für Arbeits- und Organisationspsychologie*, 51, 105-115.
- Schaffer, Owen (2013). *Crafting Fun User Experiences: A Method to Facilitate Flow*, Human Factors International
- Sharma, A. (1999). The Puruṣārthas: An Axiological Exploration of Hinduism. *The Journal of Religious Ethics*, 27(2), 223-256.
- Shernoff, D., Csikszentmihalyi, M., Shneider, B., Shernoff, E. (2003) Student engagement in high school classrooms from the perspective of flow theory, *School Psychology Quarterly*, Vol 18(2), p158-176
- Sinnott, J. D. (2013). *Positive psychology: Advances in understanding adult motivation*. Springer Science & Business Media..
- [Untitled photograph of a snowboarder]. (2014). Retrieved February 13, 2015, from [www.stillstoked.com](http://www.stillstoked.com)
- [Untitled photograph of a computer addiction]. (2013). Retrieved February 13, 2015, from [www.cdn.urbantimes.com](http://www.cdn.urbantimes.com)
- [Untitled photograph of a happiness quote]. (2012). Retrieved February 17, 2015, from [www.chic-type.com](http://www.chic-type.com)
- Wan, C. S., & Chiou, W. B. (2006). Psychological motives and online games addiction: A test of flow theory and humanistic needs theory for Taiwanese adolescents. *CyberPsychology & Behavior*, 9(3), 317-324.
- Weng Marc Lim (2014) Understanding the Influence of Online Flow Elements on Hedonic and Utilitarian Online Shopping Experiences: A Case of Online Group Buying, *Journal of Information Systems*, 28 (2), p 287-306.
- Wallace, B. A., & Shapiro, S. L. (2006). Mental balance and well-being: building bridges between Buddhism and Western psychology. *American Psychologist*, 61(7), 690
- Zhang, K., Chen, C., Zhao, S., Lee, M. (2014) Compulsive Smartphone Use: The Roles of Flow, Reinforcement Motives, and Convenience, *Human Behavior and IS*, 30
- Zito, M., Cortese, C., Colombo, L. (2015) Nurses' exhaustion: the role of flow at work between job demands and job resources, *Journal of Nursing Management*