

Chapter 2

Engagement and Fun

Quest

Let's explore engagement and flow theory.

Let's find out how games use engagement and flow theory.

Let's figure out what the symptoms of over-engagement or addiction are.

Let's explore what alief is.

2.1 Engagement

Engagement is not a new concept to education. Many educators have been interested and concerned with student engagement for a long time. Engagement is “the heightened simultaneous experience of concentration, interest, and enjoyment in the task at hand” (Shernoff, 2013, p. 12) and the level of affective, behavioral, and cognitive involvement during a task (Connell & Wellborn, 1991).

Finn and Zimmer (2012) classified engagement types and defined each of them (see Table 2.1).

Student engagement is an important factor that affects academic success (Newmann, 1992), student motivation (National Research Council and the Institute of Medicine [NRC and IoM], 2004; Shernoff & Hoogstra, 2001), emotional and social learning outcomes (Klem & Connell, 2004), and academic performance (Nystrand & Gamoran, 1991; Shernoff & Hoogstra, 2001; Skinner & Pitzer, 2012).

2.1.1 Engagement and Flow Theory

According to Shernoff, Csikszentmihalyi, Schneider, and Shernoff (2003), the level of student engagement is high when the students' skills and the perceived challenge of a given task are in balance and the task is challenging. The researchers also suggest that

Table 2.1 Finn and Zimmer's definition of engagement (2012)

Engagement	Definition
Academic engagement	"Observable behaviors related directly to the learning process" (p. 104)
Affective engagement	"Emotional response characterized by feelings of involvement in school as a place and a set of activities worth pursuing" (p. 104)
Cognitive engagement	"The expenditure of thoughtful energy needed to comprehend complex ideas in order to go beyond the minimal requirements" (p. 104)
Social engagement	"The extent to which a student follows written and unwritten classroom rules of behavior" (p. 104)

the learning environment should be under the students' control and the learning task should be relevant. This study is based on flow theory.

In flow theory, there are four mental states: anxiety, apathy, boredom, and flow (Csikszentmihalyi, 1975). Among them, flow is the optimal state for learning as it influences learning and academic achievement. Csikszentmihalyi (1990) defines flow as a mental state of complete absorption in an activity that is challenging but enjoyable.

The concept of flow theory is similar to Vygotsky's theory of zone of proximal development and Piaget's theory of cognitive development in that both theories support the idea that the effects of learning can be maximized when students engage in learning tasks that require the highest level of their abilities.

Csikszentmihalyi (2004) argues that individuals will engage in an activity when the activity is sufficiently challenging and performable. If the activity is too challenging, compared to an individual's skill, the individual tends to feel anxious and sometimes gives up trying to perform the activity. On the other hand, if the activity is too easy, the individual may feel bored and not want to perform the activity. Figure 2.1 illustrates the flow theory. In education, when students are in an anxiety zone, the teacher should improve students' skills or decrease the challenge level. On the contrary, when students are in a boredom zone, it can be better to give the students another activity that is more challenging.

When an individual is said to be experiencing flow, he or she engages in an activity, applies full concentration on the activity, becomes unaware of the passage of time, does not feel self-conscious, and appears to forget the surrounding environment (Perttula, Kiili, Lindstedt, & Tuomi, 2017).

Csikszentmihalyi (1997) suggested eight components of flow:

- Challenges match skills
- Clear goal
- Concentration and focus
- Control
- Direct feedback
- Loss of self-consciousness
- The activity becomes autotelic
- Transformation of time

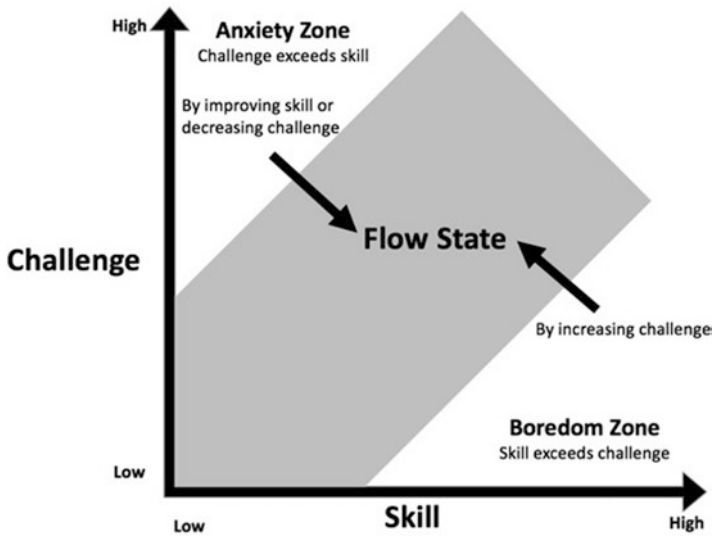


Fig. 2.1 Csikszentmihalyi's flow theory

From Csikszentmihalyi's idea, educators can consider some of the conditions of the learning environment that can help students engage in learning activities. The conditions may include clear goals, direct feedback, balance of challenge and skill, and learner control of the activity. Also, as a result of students' engagement, the teacher can observe concentration and focus, loss of self-consciousness, perception of distorted time passage, and dissipation of anxiety from his or her students.

2.1.2 Engagement in Games

Using flow theory, Radoff (2011) describes eight mental states that the game player can experience while playing a game: flow, arousal, control, relaxation, anxiety, worry, apathy, and boredom. Radoff (2011) posits that the player's mental states are subjectively determined by the player, based on the perceived challenge level of the game and the perceived skill of the player. Radoff's (2011) eight mental states are:

- **Flow:** Flow is the optimal mental state in which there is a balance between the challenge of the game and the player's skill. However, it is hard to keep flow state for the whole play time. Many games usually allow players experience arousal, control, and relaxation states during the play time.
- **Arousal:** In arousal state, the level of challenge in a game is somewhat higher than the player's skill level, but the gap can be closed by practices. If, however, this arousal state continues, the player tends to feel anxious and tired.
- **Control:** The player becomes proficient in the game and can control the situations within the game. The player can have satisfaction of playing the game when

the player can control the situations. If, however, the controllable situations last too long, the player loses interest in the game and feels bored.

- **Relaxation:** The player can seize perfect control of the situations within the game. If the period of relaxation continues to excess, the player may stop to play the game since the player feels bored. Relaxation can be considered to give the player a rest after highly challenging missions.
- **Anxiety:** The player perceives the challenge level is much higher than the skill level and makes a judgment that the player cannot successfully complete the game mission. The player with anxiety tries to find a solution shared by other players or adjust the level of difficulty. Some players give up the game since they feel despair and become lethargic.
- **Worry:** The player thinks the challenge level is moderate compared to the skill level, but the player cannot complete the game mission even after repeated practice. If the player continues to fail, the player perceives the mission as unachievable.
- **Apathy:** Both challenge and skill levels are very low. There are few chances to practice the skills since the missions in the game are too easy and simple to conduct. Apathy can be the opposite concept of flow.
- **Boredom:** The player has some level of skill, but the challenge level is too low. After attaining certain level of skills, the player wants to improve the skill by conducting more challenging missions.

According to Radoff (2011), while the player has a tendency to abandon the game when the player feels anxiety, worry, apathy, and boredom, the player is more likely to have positive experiences from playing the game when the player feels flow, arousal, control, and relaxation.

2.2 Fun

Fun is “a social emotional interactive process which deconstructs the social and historical biographical inequalities of lived experience to create a with-equal other social-human bond” (Podilchak, 1991, p.134). Fun is a subset of enjoyment (Streat & Holt, 2000) and an emotional state that can be experienced regardless of goals and rewards (Podilchak, 1985).

There are still arguments about the difference between fun and enjoyment. People sometimes use these terms interchangeably. Also, most English dictionaries do not separate these two terms. However, fun is somewhat different than enjoyment. Fun is a positive emotional or psychological state that an individual can have during or after a spontaneous and enjoyable activity. On the other hand, enjoyment is the activity itself, irrespective of the emotional or psychological change as its result.

In our daily lives, there are various activities that can create fun. Some of the activities are goal-oriented, but many are not. Some activities involve more than one person, but others can be carried out by one person. Figure 2.2 illustrates a framework to see different types of the activities that can create fun.

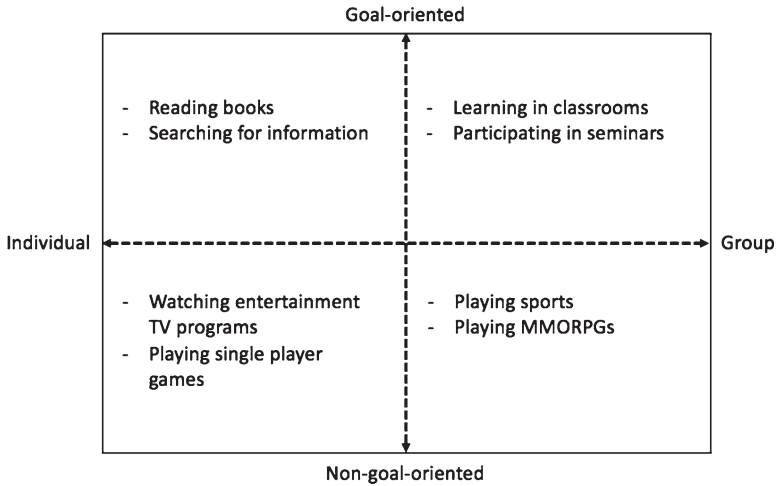


Fig. 2.2 Classification of activities creating fun

- Non-goal-oriented individual activity
- Non-goal-oriented individual activities do not have a clear goal and can be carried out by an individual. These types of activities include watching entertainment television programs, reading magazines, and playing games for single player. These activities commonly embed storytelling. People are able to conduct these types of activities even when they are psychologically or physically tired. However, the extent of fun created by these type activities is relatively weak and does not last long.
- Non-goal-oriented group activity
- Non-goal-oriented group activities do not have a clear goal and can be conducted by more than one person. These types of activities include playing sports and massive multiplayer online role playing games (MMORPGs). Interaction between people in the group is important to create fun. The higher level of interaction the activity has, the deeper engagement people are able to experience.
- Goal-oriented individual activity
- Goal-oriented individual activities have a clear goal and can be carried out by an individual. These types of activities include reading books on a specific topic, making something to solve a problem, and searching for necessary information. It is not easy to continue these types of activities until achieving the goal since there are few means to provide feedback on the activity and progress.
- Goal-oriented group activity
- Goal-oriented group activities have a clear goal and can be conducted by more than one person. These types of activities include learning in classrooms, communicating with other people for a common goal in online forums, and participating in seminars. Goal-oriented group activities are based on a common goal, feedback, and implicit and explicit consensus on activity principles. Thus, these types of activities are more likely to help participants engage in the activity than other types of activities.

The activities, creating fun, provide various experiences for the participants. Korhonen, Montola, and Arrasvunori (2009) suggested the Playful User Experience (PLEX) model to classify the playful experiences. The researchers included 20 categories for the PLEX model: captivation, challenge, competition, completion, control, discovery, eroticism, exploration, expression, fantasy, fellowship, nurture, relaxation, sadism, sensation, simulation, subversion, suffering, sympathy, and thrill. The details of each of the categories will be discussed more in Chap. 7.

2.3 Over-engagement or Addiction

There are still arguments on which term is more appropriate to indicate the negative situation in which the player excessively enjoys playing games. Some insist that *addiction* should be used rather than *over-engagement* since the positive images of engagement can cosmeticize (made to appear better than) a game addiction. On the contrary, some support using *over-engagement* instead of *addiction* as they consider the effects of using *addiction* on game industry and try to separate game addiction from drug addiction and alcohol addiction.

Young (2009) argues that it is important to know the warning signs or symptoms of game addiction or over-engagement. The researcher includes the following behaviors as warning signs or symptoms:

- Playing the game is the top priority
- Lying about playing the game
- Losing interest in other activities or hobbies
- Becoming less social and spending more time alone
- Preferring friends within the game to existing friends or family
- Becoming defensive about the need for the game
- Getting angry when deprived chances to play the game
- Feeling loss and becoming anxious or depressed when without the game
- Considering the game as a psychological escape
- Continuing to play the game in spite of the results negatively influencing real life

In addition to the above symptoms, the following are also considered symptoms of game addiction:

- Having eating disorders
- Having low self-esteem
- Having hostile behaviors and aggression toward family and friends
- Feeling confused
- Playing the game longer and longer over time
- Becoming apathetic toward future life and goals
- Becoming neurotic
- Losing self-control
- Having trouble sleeping
- Spending excessive money for the game

Playing games can provide people with various playful experiences, but game addictions can have a negative effect on their lives. They must be careful of how they use the game. The game should not be the top priority of their life. It should exist for enhancing the life.

2.4 Alief

Games utilize fictional and virtual worlds. Due to this fact, some people are easily distracted from the situations within the game while playing the game. To solve this problem, game designers should look into the concept of alief though some researchers are skeptical about its existence. The understanding of alief can offer an idea on a useful means to help players to concentrate on the game. People sometimes make a decision based on their beliefs created by conscious intention rather than objective evidence. Though they know that the beliefs are far from the truth, they intentionally rely on these beliefs.

Gendler (2008a) tried to explain this kind of phenomenon and suggested a definition of alief:

An alief is a mental state with associatively-linked content that is representational, affective and behavioral, and that is activated – consciously or non-consciously – by features of the subject’s internal or ambient environment. Aliefs may be either occurrent or dispositional (p. 642).

Aliefs are arational, associative, automatic, affect-laden, action-generating, conceptually antecedent to other cognitive attitudes that the creature may go on to develop, and are shared by human and non-human animals (Gendler, 2008b).

In applying alief for designing a game, it is more important to make quality scenarios and game mechanics than visual graphics or sound effects. Game designers should consider when and how the player can experience alief. Players can experience alief in the beginning of the game or regularly. Some games use operant conditioning to form alief.

References

- Connell, J. P., & Wellborn, J. G. (1991). Competence, autonomy, and relatedness: A motivational analysis of self-esteem processes. In M. R. Gunnar & L. A. Sroufe (Eds.), *Self-processes in development: Minnesota symposium on child psychology* (Vol. 23, pp. 167–216). Hillsdale, NJ: Erlbaum.
- Csikszentmihalyi, M. (1975). *Beyond boredom and anxiety*. San Francisco, CA: Josey-Bass.
- Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. New York, NY: Harper Perennial.
- Csikszentmihalyi, M. (1997). *Finding flow: The psychology of engagement with everyday life*. New York, NY: Basic Books.
- Csikszentmihalyi, M. (2004). *Good business: Leadership, flow, and the making of meaning*. New York, NY: Viking.

- Finn, J. D., & Zimmer, K. S. (2012). Student engagement: What is it? Why does it matter? In *Handbook of research on student engagement* (pp. 97–131). Boston, MA: Springer. doi:[10.1007/978-1-4614-2018-7_5](https://doi.org/10.1007/978-1-4614-2018-7_5)
- Gendler, T. S. (2008a). Alief and belief. *The Journal of Philosophy*, 105(10), 634–663.
- Gendler, T. S. (2008b). Alief in action (and reaction). *Mind & Language*, 23(5), 552–585.
- Klem, A. M., & Connell, J. P. (2004). Relationships matter: Linking teacher support to student engagement and achievement. *Journal of School Health*, 74(7), 262–273.
- Korhonen, H., Montola, M., & Arrasvunori, J. (2009). Understanding playful user experience through digital games. In A. Guenand (Ed.), *Proceedings of the 4th International Conference on Designing Pleasurable Products and Interfaces, DPPI 2009* (pp. 274–285). Compiègne, France: ACM Press.
- National Research Council and the Institute of Medicine [NRC and IoM]. (2004). *Engaging schools: Fostering high school students' motivation to learn*. Washington, DC: The National Academies Press.
- Newmann, F. M. (1992). *Student engagement and achievement in American secondary schools*. New York, NY: Teachers College Press.
- Nystrand, M., & Gamoran, A. (1991). Instructional discourse, student engagement, and literature achievement. *Research in the Teaching of English*, 25(3), 261–290.
- Perttula, A., Kiili, K., Lindstedt, A., & Tuomi, P. (2017). Flow experience in game based learning—a systematic literature review. *International Journal of Serious Games*, 4(1). doi:[10.17083/ijsg.v4i1.151](https://doi.org/10.17083/ijsg.v4i1.151)
- Podilchak, W. (1985). The social organization of “fun”. *Loisir et Société/Society and Leisure*, 8(2), 685–691.
- Podilchak, W. (1991). Distinctions of fun, enjoyment and leisure. *Leisure Studies*, 10(2), 133–148.
- Radoff, J. (2011). *Game on: Energize your business with social media games*. Indianapolis, IN: Wiley Publishing.
- Shermoff, D. J. (2013). *Optimal learning environments to promote student engagement*. New York, NY: Springer.
- Shermoff, D. J., & Hoogstra, L. (2001). Continuing motivation beyond the high school classroom. *New Directions in Child and Adolescent Development*, 93, 73–87.
- Shermoff, D. J., Csikszentmihalyi, M., Schneider, B., & Shermoff, E. S. (2003). Student engagement in high school classrooms from the perspective of flow theory. *School Psychology Quarterly*, 18(2), 158–176. doi:[10.1521/scpq.18.2.158.21860](https://doi.org/10.1521/scpq.18.2.158.21860)
- Skinner, E., & Pitzer, J. (2012). Developmental dynamics of student engagement, coping, and everyday resilience. In S. L. Christenson, A. L. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 21–44). New York, NY: Springer.
- Strean, W. B., & Holt, N. L. (2000). Coaches', athletes', and parents' perceptions of fun in youth sports: Assumptions about learning and implications for practice. *Avante*, 6(3), 83–98.
- Young, K. (2009). Understanding online gaming addiction and treatment issues for adolescents. *The American Journal of Family Therapy*, 37(5), 355–372.

Gamification in Learning and Education

Enjoy Learning Like Gaming

Kim, S.; Song, K.; Lockee, B.; Burton, J.

2018, XIV, 159 p. 76 illus., 60 illus. in color., Hardcover

ISBN: 978-3-319-47282-9