DESIRE ARCHITETURE: BEHAVIOR CHANGE THEORY

Ricardo Fontes Macedo, Liaria Nunes da Silva, Robelius De-Bortoli
Sergipe Federal University, Brazil

ABSTRACT

People can change their behavior and wants to change it rapidly to acquire the benefits. This generates a need for a behavior change theory connected with their desire and this can be mediated by a manager. Gamification is a process that guide a person to Flow experience througth intuitive identification of individual's gameful profile. Hence, this paper formulates the Desire Architeture Theory – a gamify process - which aims to acceletate the user behavior change based a user desire activation

Keywords: Desire; Behavior Change; Gamification; Interface; Feedback.

Human behavior theorists as Piaget and Inhelder (1995), Skinner (1972, 1982a, 1982b), Vygotsky (1996, 2001a, 2001b), and Wallon (2007) assert that behaviors can be modified. Each author describes human development and the behavior change process differently. Professionals can use these theories alone or combined to manage behavior change programs. Each theory takes its own time to achieve desirable behavior and has different results. In addition, the authors show that humans are able to change their behavior if they receive the appropriate stimuli, which highlights the importance of professional knowledge on behavior change theories. Furthermore, these professionals need a theory with a easy format which shows the way to user´s desire and motivation. Then, they can mediate a person's behavior change.

The society, through specialists, determines and/or suggests some appropriate and beneficial behaviors to population, adopting healthy habits, for example, preventing risk factors for some diseases (WHO, 1986, 2014). The concern is to attract and engage people in a behavior change without a successfull intrisic and extrinsic motivation management (Seligman, 2002). A technology, called Gamification, has been efficient in this aspect– the use of video games elements in non game context (Deterding and Nackle, 2011). Companies and Scientist use it to engage people in their desirable behavior (sales, health, education, etc).

Another factor is the behavior change speed, which benefits must be tapped quickly, depends on the connection of the behavior change program with the individual's desire. In other words, these activities and goals must have meaning for the user. Purpose stimulates the intrinsic motivation of the individual and has the power to involve people in long-term activities (Seligman, 2002). In addition, a fluid process of behavior change allows unconscious and pleasurable engagement (Csikszentmihalyi, 2009). Therefore, this research shows the Theory of Desire Architecture, which manipulates people's desire to accelerate the process of behavior change.

Desire Architeture Theory Description

Desire Architecture theory describes the process of accelerating behavior change by manipulating people's desires. The constructs of this theory are:

- Development Psychology
- Behavior change theory
- Motivation
- Feedback
- Gamification
- Desire Psychology
- Grupo Dynamics
- Self-efficacy

This theory is composed by 9 steps: 1. Manager Module; 1a. Behavior; 2. User; 3. Protocol Module; 4. Interface; 5. Activities Execution; 6. Datas; 7. Data Analysis; 8. Feedback; 9. Gamification (Figure 1). Following, a description of the theory steps is provided:

1. The Manager Module is the behavior change process moderator. Ex. Teachers; Company Director; Health professional, etc.

   1a. Behavior is a habit that the Manager Module wants the user change. Ex: healthy lifestyle, productivity, sharing things, etc.
2. User is a person who adopts the behavior proposed by Manager Module. Ex. young women, elderly group, obese population, etc. The Manager Module must know this user profile, such as culture, habits, likes and dislikes, etc.
3. Protocol Module is the process or methodology (evidence based) to execute the desirable behavior. Ex. health behavior change theory, physical activity program, task management methods, etc.
4. Interface is the place or enviroment of User and Manager Module interaction. Ex. Real places: canvas, wall design, notes, etc; Digital places: cell phones, social networks and apps. The User profile research will provide insights to define the best interface(s).
5. Activities Execution is the step where the Manager Module defines the type of tasks he will propose to execute the protocol (Ex: challenges, quizzes, missions, etc) and also establishes the rules: how the user can execute the tasks and validate them against the interface.
6. Data is the quantitative and qualitative indicator choosen to account the activities performed. Ex. number of monthly, weekly and/or daily actions accomplished, engagement percentage, number of support comments, etc.
7. Data Analysis is the step where the Manager Module defines how organize and interpret this data.
8. Feedback is the reinforcement furnished to users after they perform the activities. This feedback is based on Gamification. Ex. Extrinsic feedback: points, scoreboard, prizes, etc; Intrisic feedback: Badges, positive verbal reinforcement, etc.
9. Gamification is the process that determines the principles applied between step 3 and 8 (simple rules, meaningful goals and voluntary participation).

Figure 1 describes the Desire Architeture Theory steps. Firstly, the Manager Module defines how use the theory by identifying the users profile and needs inside their context. Secondly, The Manager Module chooses the behavior of the User´s change and the best way to execute it according to user´s desires - these have a demographic, cultural and social context which Interferes in the way their desires is satisfied. Then, the Manager Module chooses a evidence based Protocol Module adequated to users.

The Manager Module and user interaction happens in the Interface and is a cyclic process: Manager Module launches the activity; user comunicates the execution; Manager Module analyses and gives Feedback; and launches a new activity. The Interface has to be a place of easy and continued access for Users, hence the interaction must be immediate and with flow (Csikszentmihalyi, 2009). The number and type of Interfaces chosen depends on behavior, users and protocol complexity.

The Manager Module proposes activities to users perform in real life, like challenges, which need to be validated in the Interface, or he can propose activities performed inside the Interface, like quizzes. This cycle of actions generates numeric and categoric datas which the Manager Module should choose the indicators to analyse. After this interpretation, he creates the feedbacks to maintain the user motivated and engaged in the behavior. Furthermore, this feedbacks should be given with the right intensity and direction based on gamification principles.

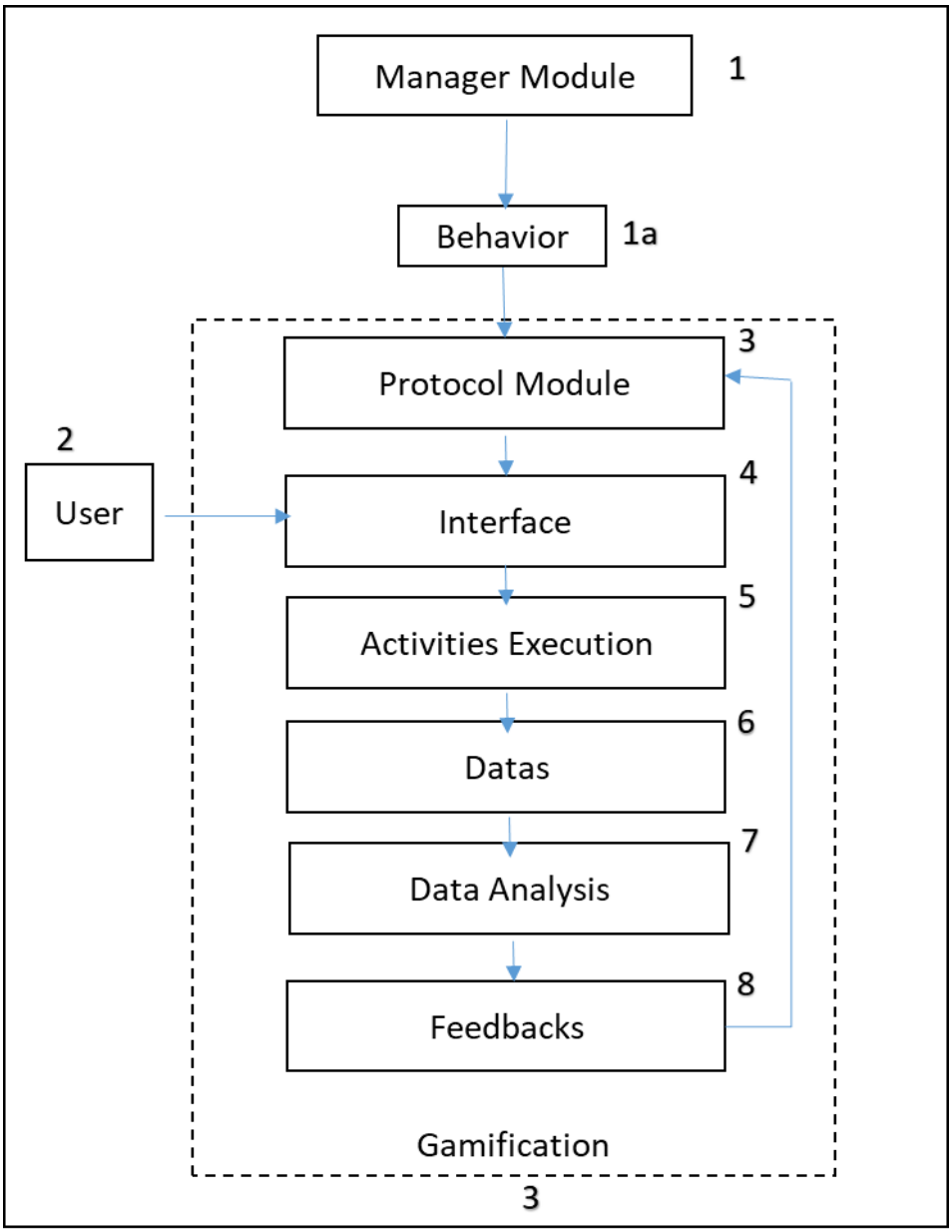

Figure 1. Desire Arquiteture Theory

Desire Architeture Theory Application

The Desire Architecture was applied in different environments and for different publics. Macêdo, Reis and De-Bortoli (2017), tested the theory with a healthy lifestyle promotion protocol (called Pura Vida) in 9 women aged 20-35 years. They formed groups of three by affinity and proximity. The Manager Module defined a social network (Interface) for each group interaction. In this, the Manager Module launched the challenges or quests of each day (Activities Execution), as well as, the Feedbacks for each activity performed by the participants. In one month of intervention, the participants engaged in the proposed Behavior and they reported that the opportunity to share and know their friends's habits motivated them.

Another example was the Desire Architecture Theory practical application with a graduation class. The Manager Module was the teacher of the discipline, who wanted to engage the students (Users) in a healthy

lifestyle (Behavior). The manager established as a Protocol Module the Pura Vida program - composed of physical, nutritional, social and mental activities. The appropriate means to interact and engage the students was a social network and the classroom (Interfaces). The manager communicated the challenges and quizzes (Execution of Activities) for the users within established rules. The Data generated at the interfaces were tabulated qualitatively and quantitatively in a sheet for later analysis. The interpretation of data (Data Analysis) and Feedbacks were made at the end of the day - points, scoreboard, levels and positive reinforcement. Furthermore, there were the immediate social and mental feedback created by the users when they shared the photos of their activities and commented about the colleague's performance.

In an experiment conducted in a coworking, the manager (Manager Module) wanted to engage the workers (Users) in preventive actions for the Burnout Syndrome (Behavior). The office manager chose the Burnout Syndrome educational program (Protocol Module) to be applied in a social networking group, and also verbal face-to-face communication (Interface). The proposed activities were daily challenges of practical day-to-day work activities (tasks validation with photos) and multiple-choice question forms (Execution of Activities). Thus, the manager collected the number of challenges met per day and quizzes answered (Data). After systematizing them in levels by points conquered, the manager increased the level of the challenges and the questions (Data Analysis). In addition, the manager provided positive verbal feedback in the group and encouraged the social reinforcement by the other coworkers (Feedback).

Conclusion

Therefore, a need generates a desire for change, but it is necessary to motivate people by directing them to the goal and aligning the intensity of the their effort to something that has meaning for them. Hence, the person will make an agreement or an alliance to initiate this change. After the sealed agreement, the manager must keep the participant motivated in the behavior. This motivation is managed through intrinsic and extrinsic feedback. To align and connect these actions in one cycle, the manager uses Gamification - which is a process that provides a positive flow of activity similar to that experienced in a video game. Thus, the Desire Architecture Theory is a process that reorganize this constructs to manipulate the user's desire to accelerate behavior change.

References

Csikszentmihalyi, M. (2009). Flow: the psychology of optimal experience. Edição: 2007. Harper Perennial.

Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). From game design elements to gamefulness: defining gamification. In *Proceedings of the 15th international academic MindTrek conference: Envisioning future media environments* (pp. 9-15). ACM.

Macedo, R. F; Reis, M. A. M; De-Bortoli, R. (2017). Redes sociais e gamificação para engajar mulheres num estilo de vida saudável. Jornal Brasileiro de Telesaúde: Anais do 8º Congresso Brasileiro de Telemedicina e Telessaúde. v. 5, n. 1, p. 53.

Piaget, J; Inhelder, B. (1995). A Psicologia da criança. Rio de Janeiro, Bertrand Brasil.

Seligman, M. E. (2004). Authentic happiness: Using the new positive psychology to realize your potential for lasting fulfillment. Simon & Schuster.

Skinner, J. B. (1972). O mito da liberdade. Rio Janeiro, Bloch.

Skinner, J. B. (1982a). Sobre o behaviorismo. São Paulo, Cultrix/Edusp.

Skinner, J. B. (1982b). O comportamento verbal. São Paulo, Cultrix.

Vygotski, L.S. (1996). Teoria e método em Psicologia. São Paulo, Martins Fontes.

Vygotski, L.S. (2001a). A construção do pensamento e da linguagem. São Paulo, Martins Fontes.

Vygotski, L.S. (2001b). Psicologia pedagógica. São Paulo, Martins Fontes.

Wallon, H. (2007). A evolução psicológica a criança. São Paulo, Martins Fontes.

World Health Organization. (1986) The Ottawa charter for health promotion. Geneve: WHO.

World Health Organization. (2011). Global status report on noncommunicable diseases 2010. Geneva: World Health Organization.