A video game for emotion regulation of medical students

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Abstract

Depression among students has increased due to the COVID-19 epidemic (remote learning, lockdowns, isolation, etc.), especially those who suffer from cognitive dysfunction. Teachers in the health fields regret that emotional regulation methods are not sufficiently taught in France. In this study, we design a pedagogical Ludo application that cares about the mental health of medical students throughout their studies. This application called, TeachMod RE, aims thus to learn how to regulate students' negative emotions.

Method

TeachMod RE was developed with Unity3D and offered a 3D virtual environment where the learner embodies a first-person student avatar to increase immersion and involvement in the game. The main scenario consists in managing the pressure generated by exams in 25 different situations. Several multiple-choice questions are displayed to the learner to study his/her emotional regulation strategies (emotional suppression or cognitive reappraisal). The evolution of the events thus varies according to the user's previous choices. For gamification, the learner must control their concentration to improve the "revision" gauge. Several game-design elements were incorporated into the game such as heartbeat sounds and crouching positions of the avatar to amplify the anxiety, the pressure of the family and the time displayed on the clock for stress, the reception of the teacher's email to induce anguish.

Results

The game was tested with 50 speech therapy students, 22 at the Bachelor level and 28 at the Master level. After the playtest sessions, users' responses were collected to analyze the emotional strategies made by future health professionals. The responses from undergraduate and Master students were very similar. In addition, the results obtained showed that 67% of the students regulated their emotions, however, 49% of them used inappropriate emotional regulation strategies (emotional suppression rather than cognitive reappraisal). For the next step, we attempt to verify if the emotional regulation's methods differ according to the investigated fields, whether they are in the medical field or not, and by considering different cognitive profiles.

Conclusion

In this work, we proposed an educational application that takes care of the mental health of medical students, particularly neuroatypical ones. It aims to teach them the appropriate cognitive strategies for each emotional situation in a dynamic, immersive, and interactive way. The visual and auditory game design elements were beneficial in triggering the required emotions and hence increasing students' involvement and participation.