How to select Serious Games to train cognitive functions in Persons with Intelectual Disabilities

Summary Notes

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ARTICLE

"Using Serious Games for Cognitive Disabilities"

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SERIOUS GAMES & PERSONS WITH INTELECTUAL DISABILITIES

- Serious games' primary objective is not pure entertainment, but passing some kind of knowledge to users.

- Typically they unfold in an environment that is a simulation of the real world, where the player must solve one or more problems.

- By using this kind of games, the user can test several behavior's that are considered too risky with undesirable consequences in the real world, either for the user's physical and psychological well-being or that of others.

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- The user learns and develops the best approaches to the problem presented within the game and, as a consequence, when confronted by the same in a real situation, they have a greater probability to act accordingly.

- Several studies show that there are many benefits from using serious games for rehabilitation of people with persons with intellectual and developmental disabilities.

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- **Persons with intellectual and developmental disabilities might have difficulties on the functions of:**
  - attention
  - memory
  - reasoning
  - language
  - perception

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- Problem-solving, conceptualizing, self-regulation and social development might be , more or less, impaired, not allowing the proper knowledge acquisition and competence development.

- Therefore, they have great difficulty in relating and learning concepts and behavior's.

- In addition, expressing themselves through writing or speaking might be equally challenging, thus having implications at social level.

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- Traditional teaching methods often do not apply because learners lose interest quicker and more easily than those not facing these kind of challenges.

- Also, we have to take into account that persons with intellectual and developmental disabilities do not deal with pressure in the same way as others, being important to provide them not only the pressure-free environments traditional methods typically don't entail, as well as stimulating and innovative environments that capture their attention and motivate them to activities of learning.

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SERIOUS GAMES BARRIERS

- According with each person needs, some adaptations and proper support must be provided to overcome usual barriers due to the lack of universal design or developers awareness lack regarding special needs and the existing range of learning profiles diversity.

- If so, ICT-SG use benefits can be profit by everyone.

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SERIOUS GAMES BARRIERS

- **Barriers to be taken in consideration are:**

  - The vast majority of serious games take advantage of capabilities that some persons don't have or that are not developed enough, such as reading and writing skills, identification of objects and colors, manual dexterity, among many others;

SERIOUS GAMES BARRIERS

- **Barriers to be taken in consideration are:**

  - Some of these games also do not provide the adequate interface and contents of the activities. Even what has been specially developed with this focus is insufficient, since it is mostly simple didactic units and not full games, based on 2D graphics;

SERIOUS GAMES BARRIERS

- **Barriers to be taken in consideration are:**

  ○ Most of them approach contents in a tightly scooped manner as in the case of social skills (personal hygiene, appearance, clothes, kitchen utensils and rules), cognitive skills (colors, shapes, order, differences), written language and numeric skills (decimal numeration, addition, subtraction), but let out more complex situations like every day work life.

SERIOUS GAMES BARRIERS

- **As for listing the facilitators for implementing the use of ICT-SG with persons with intellectual and developmental difficulties, we can mention that:**

  - The use of serious games is fairly accepted because they do not feel the pressure existing in the real world, feeling comfortable to explore the virtual world;

  - Furthermore, they feel that there is no risk in testing various behaviors at their own pace, obtaining an immediate feedback on their actions.

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SERIOUS GAMES BARRIERS

- As for listing the facilitators for implementing the use of ICT-SG with persons with intellectual and developmental difficulties, we can mention that:

  - For a person with special needs, the risks are related to insecurity about their abilities, anxiety to deal with various situations and fear of social rejection when they fail to fulfill the tasks proposed. The risks can be disseminated through the repetition of tasks to be mastered, increasing the confidence of the individuals and thus improving the social relationships they establish with other people.

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SERIOUS GAMES BARRIERS

- **As for listing the facilitators for implementing the use of ICT-SG with persons with intellectual and developmental difficulties, we can mention that:**

  - While facing (sometimes a very high) attention deficit learning is highly hinder. The use of serious games has the advantage of being able to capture and keep their attention on the tasks, supporting the efforts to overcome this challenge.

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SERIOUS GAMES BARRIERS

- **As for listing the facilitators for implementing the use of ICT-SG with persons with intellectual and developmental difficulties, we can mention that:**

  - In addition to the advantages mentioned, the games allow the development of motor coordination and spatial orientation;

  - Allow some represented situation to be played under the same conditions repeatedly, can be adapted to individual person needs, can be interactive and used individually or in groups.

SERIOUS GAMES BARRIERS

- **As for listing the facilitators for implementing the use of ICT-SG with persons with intellectual and developmental difficulties, we can mention that:**

  - Since the computer and other ICT devices are recognized as an important tool in our society, people feel proud to be using it as well, having increased confidence and self-esteem.

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Acknowledgments