Understanding emotions is crucial for social interactions, enabling individuals to accurately recognize intentions of others and foster appropriate responses (Bal et al., 2009). People with Autism Spectrum Disorders (ASD) have marked deficits in these areas with consequent social and emotional challenges. As such, computer games and educational tools have been successfully used to help teach face recognition skills (Cohen, 2009; Ekman, 1992; Langner, 2003).

This study aimed to present empirically valid computer games in teaching emotions and facial expression recognition for people with Autism Spectrum Disorders, and compare them with the Portuguese LIFEisGAME project.

1. Introduction

2. Objectives

Bibliographic research took place between February-August, 2011. Two independent researchers using key-words “Emotions”, “videogames or computer games”, and “autism or ASD”, recalled to EBSCO, Google and Google Scholar search engines, parents’ forums and registered special education organizations websites, looking for computer games that aimed to teach emotions to people with Autism Spectrum Disorders. The methodology was based on content deductive analysis, and games were characterized in terms of origin, objectives, target population, emotions considered and game design.

3. Design and method

4. Results

5. Conclusions

6. Bibliography

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**Games with validated results trough publication**

**unknown authors**

**Prototype version**

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**Lifeisgame**

Devoto University (UCPP & FCPCUPE), Psychosocial Rehabilitation Lab (FCPCUPE/PUCP), Portugal, and Austin University, Texas, USA

**Lifegame Validated Games**

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**Observations & Technology**

A game that involves interactive technology to revealing of realistic virtual characters, marketplace motion capture, sketching tools and miming effects. Customization options and mixing fun with educational activities are other advantages of this game.

This game is not very dynamic but it is interactive. The technology used is obsolete but basic principles of emotions are present and was one of the best validated game on this topic.

Use of realistic avatars, avatars e-face guidance skills. Authors argue that learned skills are generalized to other contexts.

This game includes objectives to become a master avatar to learn about emotions. A player learns to recognize facial expressions through examples and written explanations. The player has to match characters’ facial expressions to feelings originated in the story presented.

The game includes 4 modules, “become your avatar” – player recognizes and build the face; and “build the face” – the player draws facial expressions on a canvas using clerk and emotions to train. Exploration of facial expressions through comparison tasks with controlled visual information. The game offers different actions to learn to different emotions.

**Lifegame**


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**Do2learn**

Bakosta & Alencar, Spain

**Objectives**

Teach social and emotional skills

**Population with ASD**

Yes

**Emotions**

Six Basic (happiness, sadness, anger, fear, disgust and surprise) and complex emotions according to Ekman and Friesen (1971).

**Game Design**

Two major domains, one about teaching facial expression recognition and social skills and complex emotions (5 levels) and action prediction according to beliefs (true or false) (5 levels).

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**Do2learn**

Dorinan Strander, EUA

To practice creating “emotion-faces”

**Objectives**

Teach social and emotional skills

**Population with ASD**

No

**Emotions**

Surprise, interest, fear, sadness, happiness, anger, disgust and shame.

**Game Design**

Player manipulates an avatars and changes parts of its face in order to express different emotions.

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**Do2learn**

Dorinan Strander, EUA

Learn about facial expressions

**Objectives**

Teach social and emotional skills

**Population with ASD**

No

**Emotions**

Happiness, sadness, fear, surprise, anger and disgust.

**Game Design**

FACELAND is an adventure park theme with 6 schools where the player learns about facial clues and faces expressions, also includes 11 game-likes activities (memory and matching games and recognition tasks).

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**Do2learn**

Dorinan Strander, EUA

Learn about facial expressions

**Objectives**

Teach social and emotional skills

**Population with ASD**

No

**Emotions**

Surprise, interest, fear, sadness, happiness, anger, disgust and shame.

**Game Design**

Collection of games concerned with faces, emotions and face reading.

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**Face Games**

Simon Evans, EUA

Teach face reading

**Objectives**

Basic emotions or neutral expression

**Population with ASD**

No

**Emotions**

Happiness, fear, surprise, sadness, fear, anger.

**Game Design**

Incorporates game zone, emotion story and learning center.

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**Let’s Face It!**

Tanaka and collaborators, Canada

Teach processing skills

**Objectives**

Six Basic emotions

**Population with ASD**

Yes

**Emotions**

Seven interactive games, with 24 levels of complexity, faces and facial expression comparison and classification tasks.

**Game Design**

Includes game zone, emotion story and learning center. Free exploration tasks, comparison, face and facial expressions identification. Lessons and ludic tasks.

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**Playtime with Zeebu**

Kimberley Colo, Canada

Learn about facial expressions in context

**Objectives**

Happiness, worry, sadness, fear, excitement

**Population with ASD**

Yes

**Emotions**

Player manipulates a character’s face, named Zeebu (e.g. eyes, mouth) to match his feelings as the story plot changes.

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**Robbie The Robot**

University of Swinburn, Australia

Explore emotions and facial expressions in a story like game

**Objectives**

Happiness, sadness, anger and surprise

**Population with ASD**

Yes

**Emotions**

Player identifies matches and labels facial expressions of a robot named Robbie according to the story that is presented.

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**Secret Agent Story**

University of Queensland, Australia

Develop skills of social and emotional understanding

**Objectives**

Basic and complex emotions

**Population with ASD**

Yes

**Emotions**

In a character (detective has to overcome missions in a story like game that can be used with a variety of languages and ages that can be selected). The player recognizes a Human character through a mask, in order to solve points, the child presses a happy or angry button and the emotion is recognized by a back-end and evaluated by the computerised software program.

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**SmileMaze***

Cockburn et collaborators, Canada

Enhance social and emotional skills

**Objectives**

No anger, anxiety and worry

**Population with ASD**

Yes

**Emotions**

Tasks focused on facial expression recognition, emotions prediction and interpretation based on context.

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**The Emotion Express**

CYKE Design Company, EUA

Learn to deal with emotions through characters of a story

**Objectives**

Happiness, sadness, anger, fear and surprise

**Population with ASD**

No

**Emotions**

Player learns about emotions and corresponding facial expressions through examples and written explanations.

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**The Gaining Face**

Stone Mountain Software, EUA

Learn to recognize facial expressions

**Objectives**

No happiness, sadness, anger, surprise and excitement

**Population with ASD**

Yes

**Emotions**

Player hears how to match character’s facial expression to feelings originated in the story presented.

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**Thomas the Tank Engine: “Emotions Game”**

Gullane Entertainment, UK

Learn about facial expressions

**Objectives**

No happiness, sadness, surprise and fear

**Population with ASD**

Yes

**Emotions**

Recognize emotions – trains with faces expressing different emotions - focus on memory skills.

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**Lifegame**