



Adaptable Computer Gaming for Adolescent Psychotherapy

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The Virtually Healthy Project

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Department of Child and Family Psychiatry at the **Mater Hospital Dublin**

Funded by the **Higher Education Authority** in Ireland



Overall Project Goal

To design computer technologies that help adolescents engage more easily with mental health care services.

Priorities:

- ☐ Adolescent centred technologies
- ☐ Wide usability in public health care
- ☐ Not overly reliant on expensive equipment
- ☐ Takes advantage of therapists current skills



Why Computer Games?

53% of eleven to fourteen year olds play games four times a week or more, and that 44% play for more than one hour at a time (McFarlane et al. 2002).

Previous research has demonstrated benefits of computer games in educational settings:

- ☐ increased engagement, motivation, self-esteem,
- ☐ improved problem solving and discussion skills,
- ☐ improved storytelling skills
- ☐ improved learning??

(Bruckman 1997; Robertson and Oberlander 2002; Bers et al. 2003; Squire 2003)

(Coyle & Matthews et. al. 2005) - review of prior uses of computer games



Pilot Study - Personal Investigator (PI)

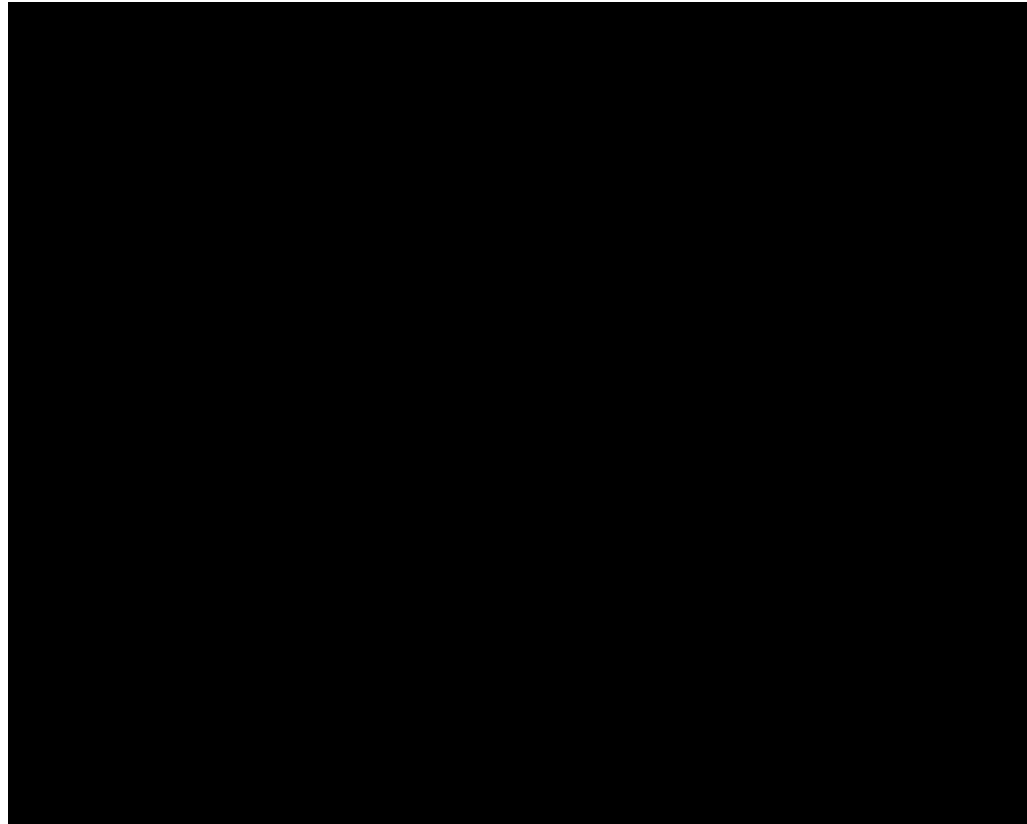
A **3D computer game** that implements Solution Focused Therapy.

Runs through Internet Explorer





Personal Investigator Demo





Aims of the game

Implements SFT in an open manner, not targeted at specific issues

Can a game help adolescents to:

- Set therapeutic goals
- Learn new coping strategies
- Begin telling a personal story
- Engage more easily with therapist



Personal Investigator – the Game

- A **detective game**
- Adolescent plays a trainee personal investigator, visits the Detective Academy, graduates as a Master Detective
- Adolescent is given a **detective notebook** which appears at the bottom of the screen

“this book will be a mirror to your mind, it is where you can write all your ideas and hunches as you go along.”

- Player uses book to record their own story as they move through the game.
- Player can draw in the book.
- As a reward for completing the game adolescent gets printout of their own notebook.



Personal Investigator – therapeutic content

- Five distinct game areas map five Solution Focused conversational strategies

- Game mapping -

Setting Goals	→	'Introduction' Area
Recognising Exceptions	→	'Evidence' Area
Coping	→	'Finding Clues' Area
Identifying Resources	→	'Backup' Area
Miracle Question	→	'Detecting Solutions' Area

- **Player meets computer characters**, who introduce ideas, set tasks and give rewards.
- Players can watch videos of adolescents who over came personal problems using Solutions Focused strategies.



Personal Investigator – Pilot study

- 4 adolescents referred to clinics for issues including anxiety and behaviour problems, social skills difficulties, attempted suicide.
- Adolescent plays the game in therapists office, with therapist.
- The adolescent has full control over the game; they play at their own pace and choose their own path through the world
- In a one-hour session the game will normally be used for thirty to forty minutes.
- On average the game took three sessions spread over three weeks to complete
- Feedback is in the form of questionnaires from therapists and adolescents and post trial interviews with the therapists.



Pilot Study Findings

Demonstrated benefits of 3D gaming in adolescent psychotherapy

- ☐ very helpful in engaging adolescents
- ☐ increased the amount of dialogue between therapists and adolescents
- ☐ helpful in setting therapeutic goals
- ☐ helpful to structure sessions and maintain focus
- ☐ allowed the adolescent more control over the pacing and direction

‘very helpful in encouraging clients to think more widely around problems, to examine resources in solving problems and to reinforce coping skills’

‘3D gave clients a sense of control and mastery in therapy’

Adolescents unanimously rated the game as ‘very helpful’ in assisting them to think about and solve a personal problem.

Case Study: Socially phobic adolescent



Pilot Study Findings

Negative feedback centred around usability issues:

- ☐ Overly reliant on literacy skills & keyboard input
- ☐ Requested playback functions



Further Details

Coyle, D., Matthews, M., Sharry, J., Nisbet, A. and Doherty, G. (2005)
"Personal Investigator: A Therapeutic 3D Game for Adolescent
Psychotherapy." *International Journal of Interactive Technology and Smart
Education*. Vol.2 pp73-88.

Game is available for download:

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Adaptable Computer Gaming

Are there better ways to combine the efforts of therapists and technologists?

Aim: to design a toolkit that enables therapists to collaborate to adapt and create issue specific computer games?

Adaptable:

- To Socio-Cultural factors
- To a range of disorders
- To different psychotherapy models
- To individual cases
- Recording facilities: writing, drawing, video, sound & music
- Game – stories, characters, game play, content etc.
- Fine tune and edit existing games
- Prototype new games

Collaboration:

- Allow therapists to collaborate to create games
- Easily share developed resources
- Build games and characters and stories with adolescent clients



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Thank you for your time.

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Questions?



Personal Investigator – some background

A client centred approach: 53% of eleven to fourteen year olds play games four times a week or more, and that 44% play for more than one hour at a time (McFarlane et al. 2002).

Off the shelf games:

Ultima (Allen, 1984), Super Mario Brothers (Gardner, 1991)

Custom designed games:

Adventures of Lost Loch (Clark & Schoech, 1984), SMACK (Oakley, 1994), Self Esteem Games (Dandeneau & Baldwin, 2004)

Educational research has demonstrated the following benefits of computer game:

- increased motivation,
- increased self-esteem,
- improved problem solving and discussion skills,
- improved storytelling skills

Bruckman 1997; Bers 2001; Robertson and Oberlander 2002; Bers et al. 2003; Squire 2003

Identity Construction Environments: Zora (Bers, M., 2001)

Story Listening Systems and Conversational Agents:

Ananny, M. & Cassell J., 2001; Ryokai, K. & Cassell J., 1999; Bickmore, T., 2004