


DOING PLAY THROUGH THE USE OF VIRTUAL REALITY: A QUALITATIVE STUDY



Denise Reid, PhD
Stacey Miller, MHSc
University of Toronto

Purpose

- # To explore the perceptions and personal experiences of VR play intervention program for children with cerebral palsy.

Hypothesis

- # It is believed that engagement in the VR play intervention program will have a positive effect on the participant's perception of self-competence and self-efficacy.

Literature on Play

- # Engagement in physical play serves to develop self-competence and help children learn about their bodies and how to react to the environment



Literature (cont.)

- # Play has been shown that children are more self-confident, outgoing and socially adjusted



Play and children with disabilities

- # Children with disabilities spend more time in solitary play and on-looker behaviours than their typically developing peers



Play and children with disabilities

- # Young people with disabilities report environmental and personal barriers as having an impact on their play



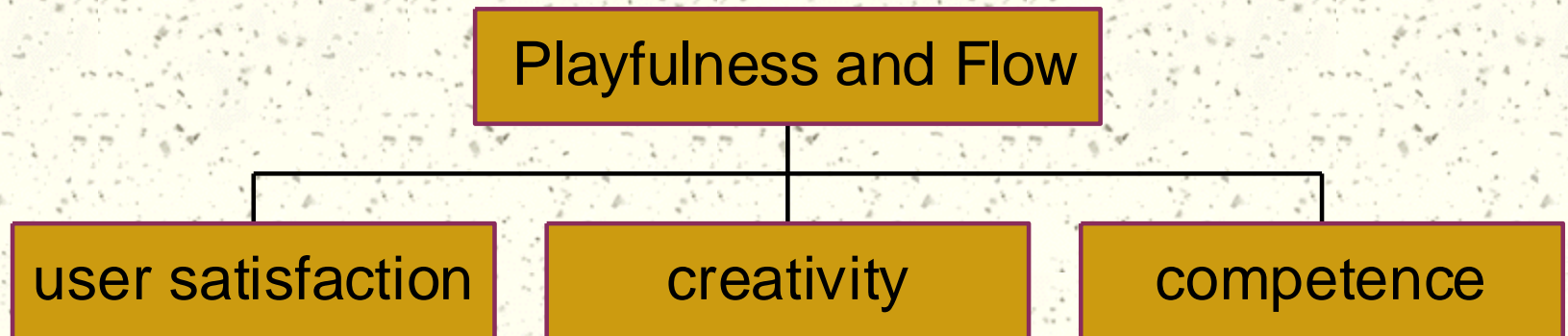
Virtual Reality

- # VR may facilitate active engagement in play activities
- # VR is an immersive and interactive computer experience occurring in real time in which the user is able to see a 3-D response to their movements

Virtual Reality Research

- # Life skills (street crossing, lunch making)
- # Social participation
- # Mobility and wheelchair use
- # Cognitive and spatial abilities
- # Disability awareness training
- # Engage in school based activities
- # Posture and balance
- # Upper extremity skills

Theoretical Assumptions



Methods

- # Qualitative - grounded theory design
- # In-depth interviews (mean # 3.5)
- # Participants
 - 19 children (8-12 years)
 - Received OT or PT at least 1 X week
 - Could reach with one or both arms
 - Could sit unsupported

Interview guide

6 topics

- Typical play experiences
- Experience with VR
- Importance and meaning of VR
- Specific VR applications/interests
- Perception of others re: self
- Perception of self

Data analysis

- # Data audio taped and transcribed
- # Imported into Nudist (QSR N6) for analysis
- # Coding process
- # Themes generated
- # Member checking

Results

3 themes emerged

- Doing play
- It's my way that matters
- How I see me

Subtheme

- safety

Doing Play

- # Majority of children aware of their limitations and their occupations
 - "We do, um, a lot of sports like, um, benchball, which I always have to be the goalie because I cannot play anymore, any other positions: [Kevin]"

Doing Play

Many kids felt left out of things

■ "Well, because all my other kids in my class usually know how to do snowboarding well and there is only a few kids that don't, don't know how .. Two of my friends and then there is me. I don't. I never really got to join in any of fun games that we did at school I felt left out. I felt like I lost something" [Jean]

Doing Play

Many kids felt left out of things

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Doing Play

Limited opportunity to get involved

- "Because some of the games are hard for me to do. I try to join in when I realize that I can't do it, I just go on the bench and watch the others. I don't like seeing all my friends laughing at me cause I cant do that, I cant do this"
[Jean]

Doing play

- # Enjoyed the immersive quality of VR
 - "You can see your actual self on the screen and you're not playing any character..I'm playing on the screen. I'm not pretending to be any other person like on video games" [Simone]

Doing play

Discovering new abilities

- "I feel that I've grown to learn about my arm and I could do more things to help my arm go a bit better. And that I could use my arms more.. And probably like in real life when I grow up I might like probably need this arm a lot" [Tamica]

Doing play

Empowering aspects of VR

- "I learned that you can do whatever you want to do if you put your mind to it..." [Samuel]
- "It gives chances to build up kid's confidence and say I can do this, I can do this"[Samuel]

Doing Play

Reinforced feeling of normalcy

- "It makes me feel like I'm normal, that I'm able to do stuff if I try to do it"
[Simone]
- " My pride and like I'm equal like everyone else and I can do everything like they can do, and I'm doing well"
[Tamica]

It's my way that matters

Sense of control

- "I like most of the games because they are easy to do and they're fun" [Vincent]
- "Yeah it allows me to have more control to what I'm doing and more fun" [Kevin]
- "I like the fact that this gives me a chance to actually, it challenges me to beat the robot" [Steven]

How I see me

Personal changes

- "I actually think I feel some new muscles in my arm... I feel a bit stronger since I started and that's what I wanted" [Vincent]
- "Because I can hold on (to my bicycle), I can get a better grip after VR [Kevin]"

How I see me

Social perceptions (cont.)

- My old principal when I was in kindergarten because I had this crooked leg, he didn't think I could climb all those stairs and maybe because of the VR because I had to move my muscles a lot for a whole hour with little breaks.. Maybe I can prove to my principal I'm worthy of that" [Errol]

How I see me

Enjoyable benefits

- "I mostly don't win stuff mostly. So when I play up here I get a chance to" [Simone]
- "You can visualize ...all these things like you stopping the winning goal, you scoring the winning point. It is kinda like making a dream come alive" [Samuel]

How I see me

Comparable benefits

- Like in real soccer you gotta move around where the ball goes and when I'm here I really have to move around too"
[Mark]

How I see me

Social perceptions (cont.)

- He's a lot nicer to me.. So I feel like he's been treating me nice ever since that day" [Steven]

How I see me

- # Perceived cognitive and social perceptions
 - "I really like it because it really up my concentration"[Samuel]
 - "Like they won't look at me because of my hand problem and they usually won't make fun of me..Instead of them seeing as who I am, they'll just see whom I really am inside instead of outside" [Tamica]

Safety

- # “ Nobody who hits a rock will need first aid down the hill” [Anthony]
- # “ Every time the ball hits me when I’m playing in nonVR I usually get hurt. Luckily I didn’t hurt my head after the ball went on my head. There are lots of balls shooting at fast speed and I don’t get hurt” [Errol]

Safety

- # “I feel happier cause I’m playing these games with people I know that’s all. And I’m in a safe environment”
[Tamica]

Discussion

VR and the flow experience

- Reported enjoyable experience
- Loss of self consciousness
- Feeling of union with VE
- Being in control
- Right fit between skill level and VR challenge

Discussion

VR and self efficacy

- Experienced feelings of increased self-worth
- Confidence
- And competence in abilities
- Discovered able to do things they never thought possible
- Began to set goals for improvement

Limitations and conclusions

- # Small sample size
- # Disabled children may be given opportunities to explore in a safe environment which can be graded to their capabilities using VR