

Virtual Environments for Social Skills Training

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The AS Interactive Project

- 3 year program to develop VE's that allow people with AS to practise social interaction
- Focus on social skills to aid interaction in the workplace
- Adolescents and adults
- Interdisciplinary Project:
 - ◆ School of Psychology
 - ◆ School of Computer Science
 - ◆ Virtual Reality Applications Research Team
 - ◆ National Autistic Society
- Funded by the Shirley Foundation

Usefulness of VEs for AS

- Ability to control input levels e.g. number of people present, auditory inputs, non-verbal cues.
- Practice skills safely without experiencing real world problems.
- Shared features between virtual and real worlds may facilitate generalisation of skills from former to latter.

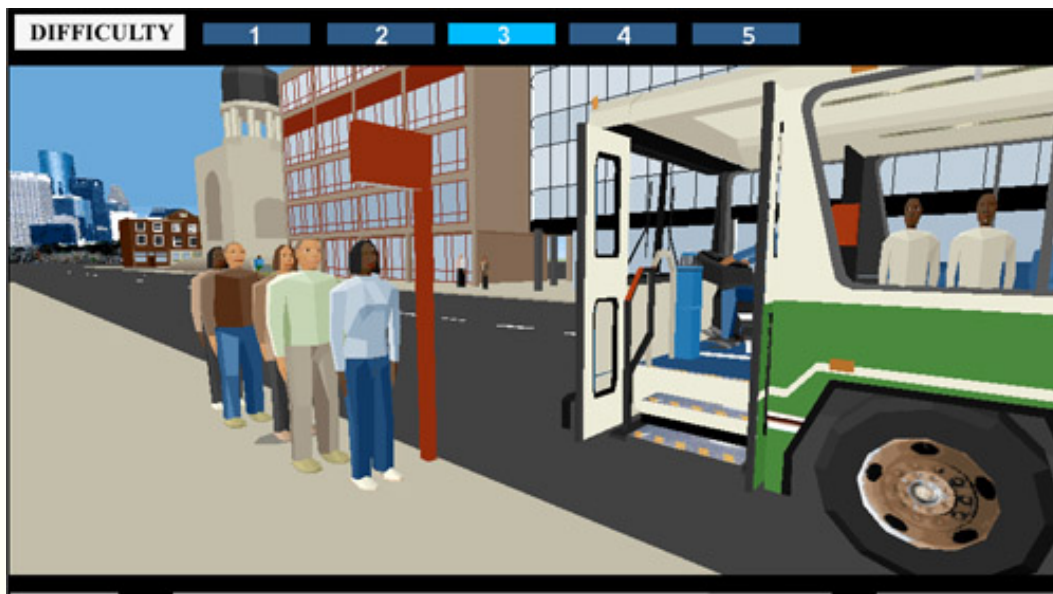
A schools-based approach

- Insight into usefulness and relevance in real world
- How can VE learning be supported?
- Use to inform further development of VEs
- Complementary to 'experimental' studies of learning

Bus & Café Single User Environments.

- Main task: finding a place to sit down.
- Same task in different scenarios
 - ◆ Transfer of learning from one context to another. (a problem area for people with autism)
- Aimed to foster social reasoning, not rote learning.

Level	Café	Bus
1	All tables empty.	All seats empty.
2	One table empty.	Several double seats available, some seats taken.
3	Short queue. No empty tables, but empty seats. If user asks to sit down, answer is positive.	Queue. No double seats available, user needs to sit next to someone.
4	Short queue. No empty tables. If user asks to sit down, answer is negative in first instance. Background noise.	Queue. As level 3, but some seats have shopping bags on them.
5	-	Queue. No empty seats, user will have to hold on to overhead handles.



?

Get on the bus.





DIFFICULTY

1

2

3

4



Go and get something to

DIFFICULTY

1

2

3

4

Paused

press "Enter" to start again

cafe menu



BUFFAL
CHICKEN CURRY
VEGETABLE CURRY
BUTTER CHICKEN
SALAD



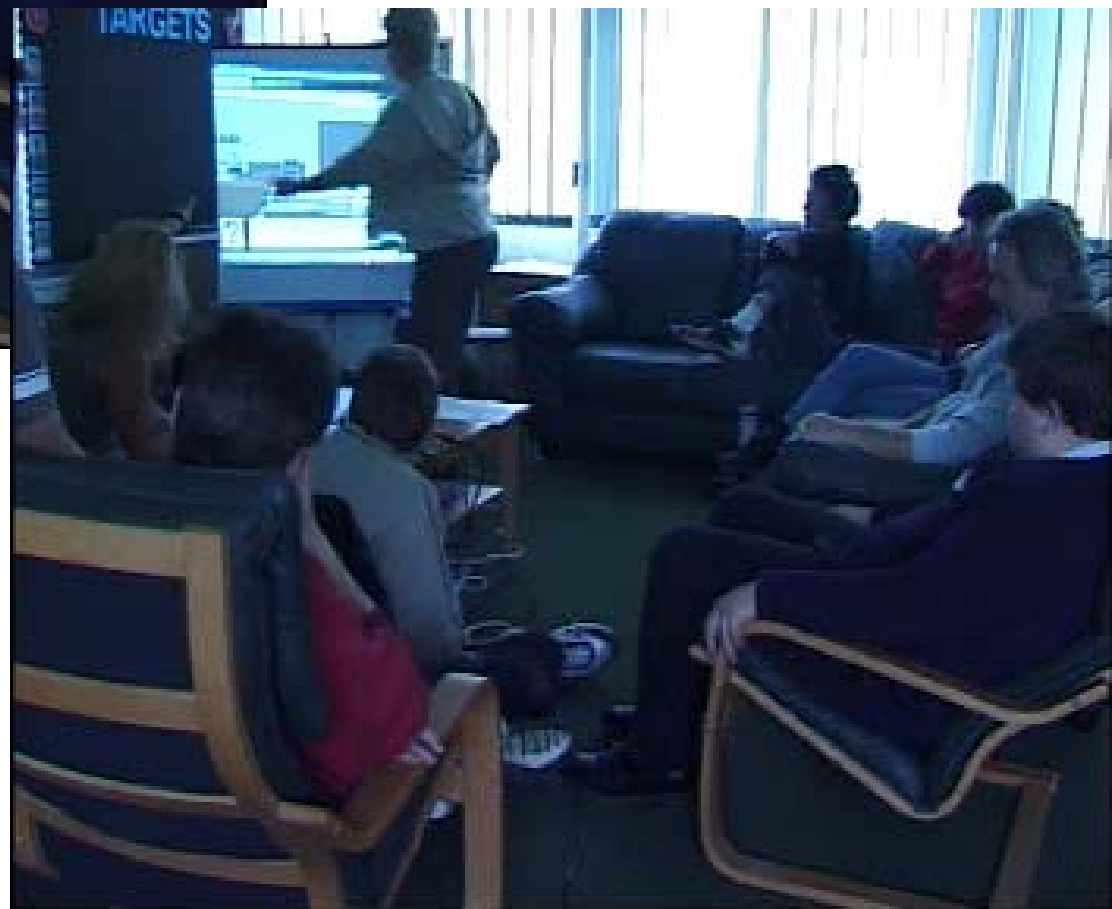
"How rude, pushing in front of me when I was waiting here first."

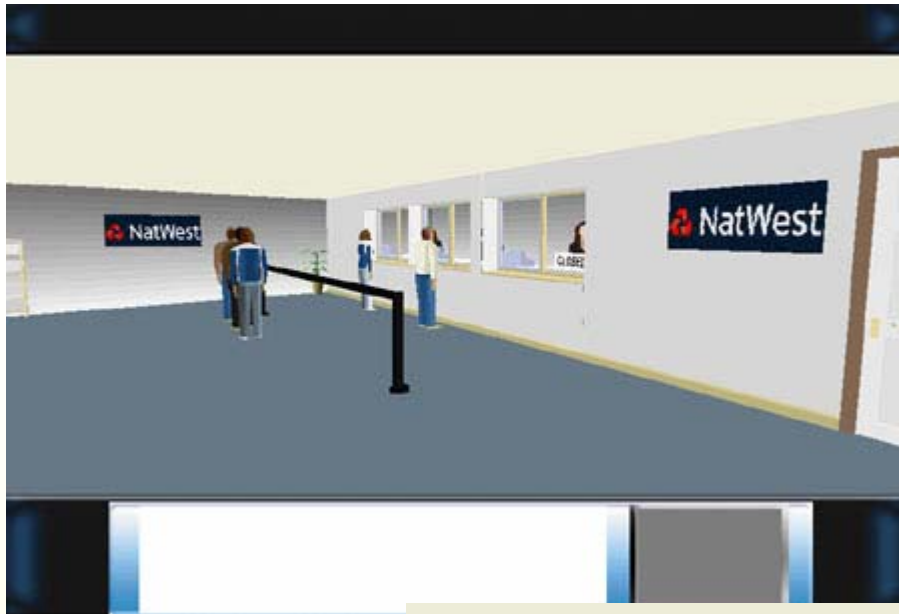




Observation of VE use in school

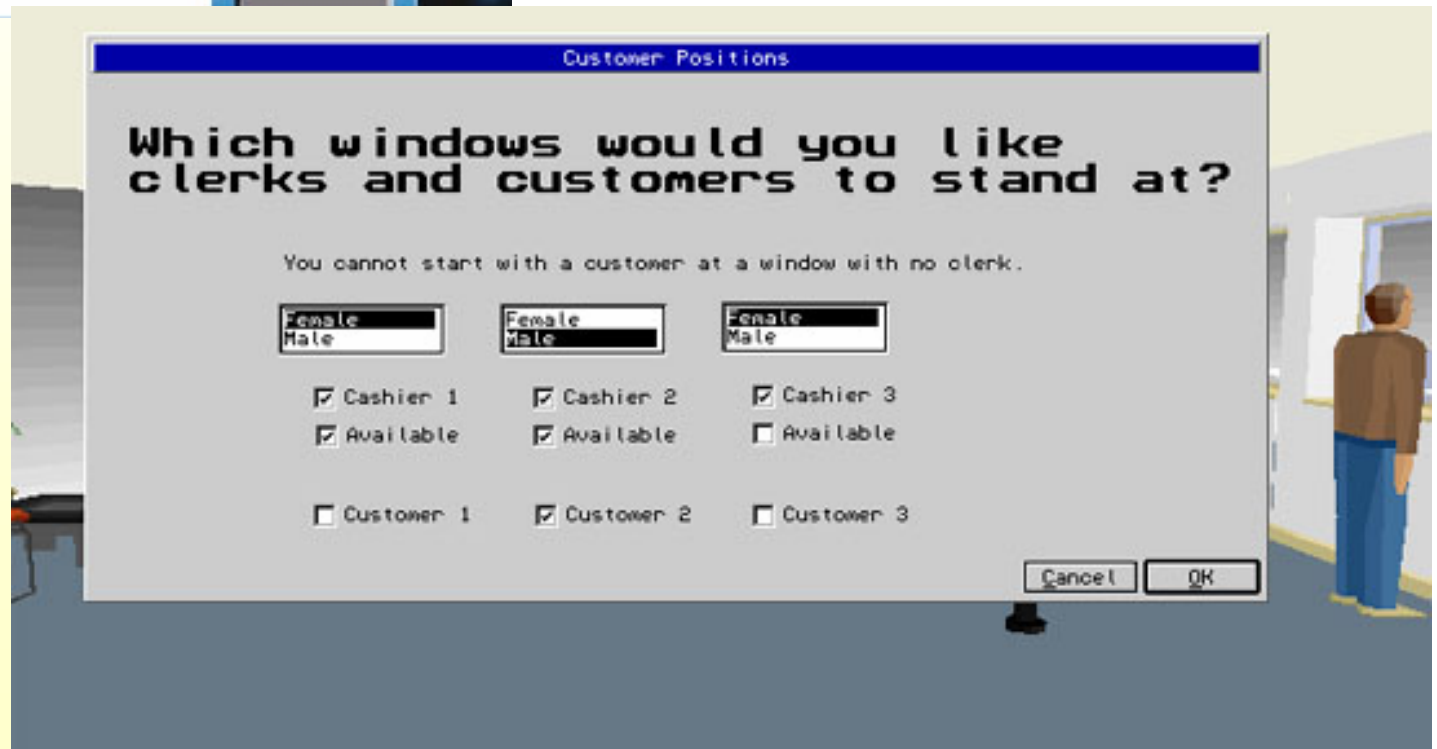
- Teachers led VE use
- Researchers observed (technical assistance)
- Different approaches to VE supported learning
 - ◆ Student-teacher pairs
 - ◆ Group





Individualised Learning

- Demo Review



Individualisation Recommendations

Software Features

- Role that user takes
- Emotional responses – anger, disappointment, humour.
- Physical layout and people (age, height, race, gender etc).
- Unexpected happenings
- Length of time to wait and queue
- Help and Guidance (and how user asks for help)

SETUP



Q Length:

Q Time (s):

Server:

Scaffolding Level:

☐ People Standing

☐ People Walking

☐ Q role

☐ Sit role

☐ Background Noise

☐ Phone Call

Table 1	<input type="text" value="Capiv"/>	<input type="text" value="2nd filled"/>	Mixed	<input type="text" value="Pos 1"/>	<input type="text" value="Pos 2"/>
Table 2	<input type="text" value="Capiv"/>	<input type="text" value="2nd filled"/>	Male	<input type="text" value="Pos 1"/>	<input type="text" value="Pos 2"/>
Table 3	<input type="text" value="Capiv"/>	<input type="text" value="2nd filled"/>	Male	<input type="text" value="Pos 1"/>	<input type="text" value="Pos 2"/>
Table 4	<input type="text" value="Capiv"/>	<input type="text" value="2nd filled"/>	Female	<input type="text" value="Pos 1"/>	<input type="text" value="Pos 2"/>
Table 5	<input type="text" value="Capiv"/>	<input type="text" value="2nd filled"/>	Mixed	<input type="text" value="Pos 1"/>	<input type="text" value="Pos 2"/>
Table 6	<input type="text" value="Capiv"/>	<input type="text" value="2nd filled"/>	Male	<input type="text" value="Pos 1"/>	<input type="text" value="Pos 2"/>

Start Pos

MENU

- ☒ Burger _Chips
- ☒ Pizza
- ☒ Curry
- ☒ Salad
- ☐ Pasta

Cancel

OK

Review

- Individualised VE more suitable for learning
- Setup should be made as easy as possible.
- Should be able to save each students settings for ease of use and to keep track of progression
- Expand scenarios, include more interaction (e.g. with opposite sex)
- Have a wider range of questions – ideally have teachers inputting questions and responses.