A comparison of different technological interfaces and activities on autistic children's social play with peers

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Background and Aims

- Technology can inspire social interaction in autistic children [1-3], contradicting concerns from parents and professionals [4]
- How can we best use technology to foster interaction and social play in autistic children?

Method

- We observed 4 children playing with different types of technologies, including a range of interfaces and apps
- We coded social play using Howes' Peer Play Scale [5]
- 36 video clips, each containing 5 minutes of observation, were included in the analysis with 20 minutes/session
- **Design-based iterations** were led by autism practitioners to explore whether the environment influenced play

Participant Information

	Oliver (10)	Harry (11)	Laura (8)	Jack (8)
Current spoken language	Non-verbal	Fluent	Fluent	Non-verbal
Social Responsiveness	84	71	68	89
Vineland Adaptive Behaviours	36	59	65	39
Wing's Subgroup	Aloof	Active but odd	Active but odd	Aloof

Conclusions

- Technology can support social interaction and play
- Children respond to digital cues for collaboration, and find more opportunities to engage using tangible interfaces (blended physical-digital)
- Providing communal areas for technology use increases social engagement

For more details see **www.dart.ed.ac.uk/research/autism-tech-play**

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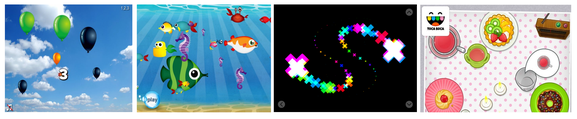
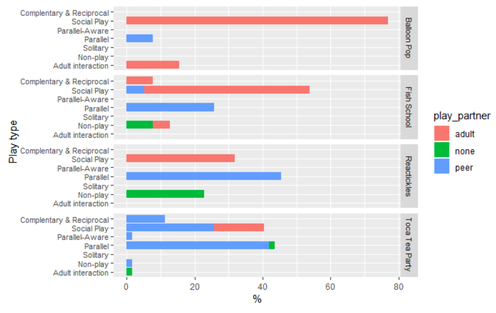
Key Findings

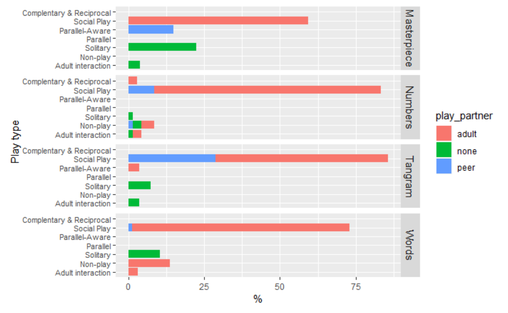
Highest levels of social play, and play with peers, was observed on iPads.

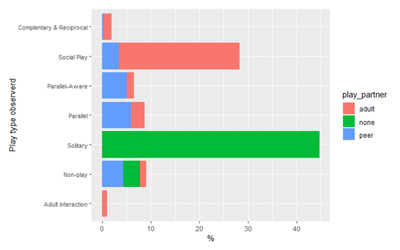
The most social play with adults was observed on Osmo.

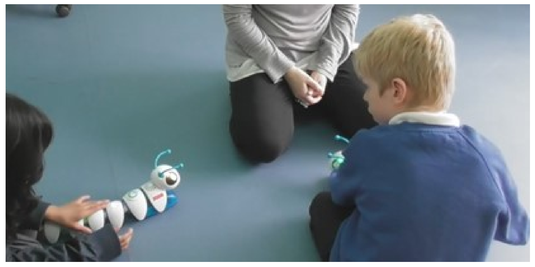
More children engaged in social play using Code-A-Pillar.





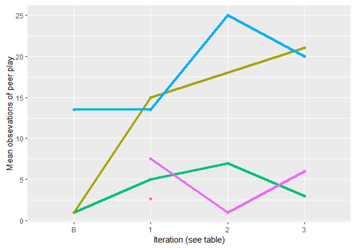


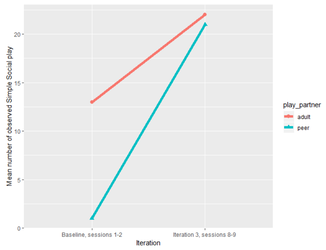




The environment moderates children's interaction and engagement

Iteration	Sessions	Description
Baseline	1-2	Observation of play with familiar technology (iPads)
1	3-5	Introduce new technologies (Osmo and Code-A-Pillar)
2	6-7	Arrange desks communally in centre of room
3	8-9	Practitioners direct play with peers





Specific features of technology foster child-led collaboration

Structured turn-taking and **visual prompts for collaboration** allow children to initiate and maintain interactions with others.

Tangible designs increase the physical and social space for interactions. They allow for interactions *across a comfortable distance* and create more reference points for *joint attention*

Progression markers and **feedback** provide conversation references for children, and make them want to *share their achievements.*

References

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Thank you!

To all of the children, teachers, and schools that contributed to this research

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