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The Use of Mobile Devices to Develop Joint Attention Skills in Children with Autism Spectrum Disorder

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Background

- Children with autism often find it difficult to share and coordinate attention with an adult or peer about an object or activity by following gaze, pointing and alternating gaze, but also showing interest to the other person[1].

- Children with autism have an affinity with technologies[2].

- The benefits of mobile devices in providing structure and predictability and the vast variety of apps that can facilitate social communication makes it imperative to effectively incorporate iPads in the teaching of joint attention[3].

- Despite the increase use of mobile devices in primary schools, there is a lack of guidance for parents and teachers on how to use these devices in home and school environments for children with autism.

- This study aims to aims to produce a list of guidelines for teachers and parents on how to use the tablets to improve joint attention skills in children with autism.

Fig. 1 Child and adult engaging in joint attention using the iPad

CONCLUSIONS

- The guidelines are proposals rather than definite answers on how to use the iPad for joint attention. In order for the guidelines to be effective in promoting joint attention, researchers, teachers, parents and app developers should work in partnership.

- The device should only be used as a facilitator in the learning process and should not overtake what the teacher or parent already have in place.

- Parents can try using the tablet in collaboration with their child in order to interact and communicate more often.

- Teachers should keep ahead of the technological and pedagogical innovations, so the guidelines can help them instil the habit of using the iPad as a teaching tool to develop joint attention skills in their everyday teaching practice.

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Acknowledgments

Methods

Study 1: Teachers' experiences of developing JA skills

- Semi structured interviews with 16 school staff members in 3 UK schools (1 mainstream and 2 special needs)
- Results: a)evidence- based strategies daily used in their teaching practice to promote JA, b)iPad training needs: collaboration and sharing of apps and activities, pedagogical iPad use recommendations, c) need for stronger links with parents

Study 2: Observations of strategies and technology use in the school settings

- Non-obtrusive observations with 12 children and 8 teachers in class, sensory room, PE hall
- Results: a)iPads used as a reward b)iPads used in conjunction with visual aids and other teaching resources to teach the curriculum, c) iPad challenges: children not sharing or waiting for their turn

Fig. 2 iPad and visual support to teach the curriculum

Study 3: Parents' experiences of developing JA skills

- Semi-structured interviews with 10 parents of children with autism
- Results: a) Parents engage with their child in social activities such as puzzles, outdoor activities, cooking, b)iPad use: solitary device vs sharing it with their child through 2player and mirroring apps, c) need for advice and training within their child's school

Study 4: The development of guidelines about the use of iPads for JA purposes

- 4 Focus groups with teachers, parents , children and academics
- Results: a) iPad can be used to promote JA as long as parents and teachers are willing to use the device with the child by sharing with them what they enjoy doing on the device, b) a number of challenges and steps should be addressed before giving the iPad to the child, such as the child's difficulty in sharing, choosing suitable apps and ensuring that online safety settings are activated, c) children want to use the iPads with the learning partners they choose and away from their desks
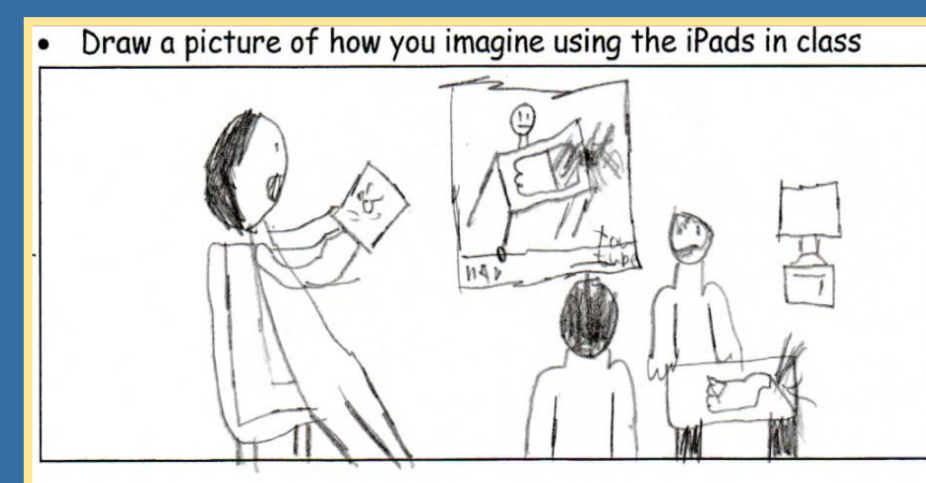

Fig. 3 Drawing showing that the iPad screen could be projected on the Interactive Whiteboard for JA purposes
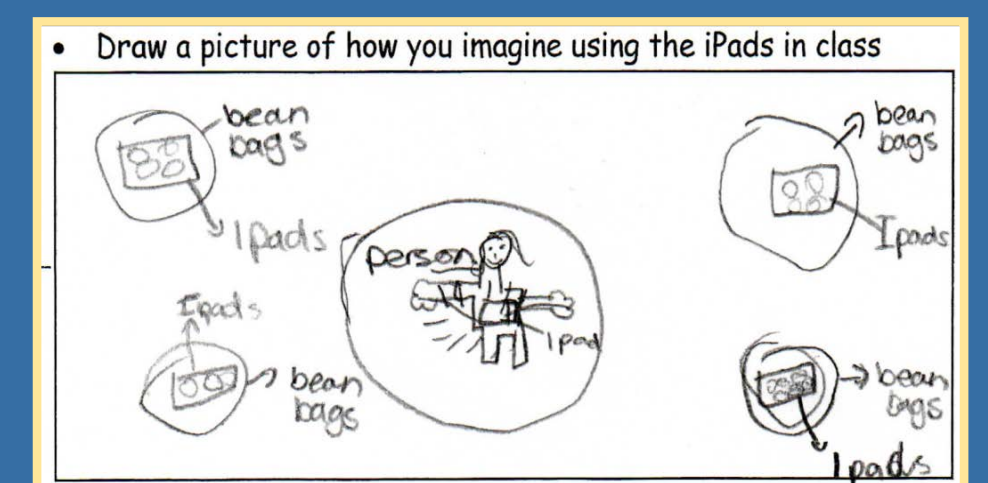

Fig. 4 Drawing showing that iPads could be used while sitting on beanbags

Guidelines

App Checklist Criteria	Technical Preparations	Strategies
Audience	Accessibility Settings	iPad training sessions for parents and teachers
Purpose	Connectivity	Project iPad screen to the TV and IWB
Ease of Use	Screen time	Dynamics of learning partners
Customisation	Online Safety Settings	Moving around and sitting on bean bags/ different areas of the house
Price		Positive reinforcement and rewards
Data Storage		Sharing enjoyment
Access		Taking turns in games
		Visual aids to supplement iPad activities
		Set a routine in the child's visual timetable when the iPad is used for social communication development
		The purpose of using the iPad to be explicit in class and home
		Encourage verbal/ non-verbal communication while playing together

References

1. Patten, E., Watson, L.: Interventions Targeting Attention in Young Children with Autism. American Journal of Speech-Language Pathology 20, 60-69 (2011)
2. Durkin, K.: Videogames and Young People with Developmental Disorders. Review of General Psychology, 14(2),122-140 (2010)
3. Boucenna, S., Narzisi, A., Tilmont, E., Muratori, F., Pioggia, G., Cohen, D., Chetouani, M.: Interactive Technologies for Autistic Children: A Review. Cognitive Computation 6(4),722-740 (2014)