



Effect of Assistive Technology on Social Performance of Students with Intellectual Disability

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Abstract

The present study attempts to find the relationship between assistive technology and social performance of students with Intellectual Disability. Further, it tries to explore the differences in social performance, having different levels of assistive technology. 120 Samples were drawn from special school teachers working at intellectual disability special school in Bangalore District. Assistive Technology Scale and Social performance scale developed by the researcher were used to collect data. The statistical analysis was done through computing Mean, SD, Pearson's Product Moment Coefficient of Correlation and one-way ANOVA. The study showed that there was a significant relationship between assistive technology and social performance of students with intellectual disability. Further, the study also reveals that there was a significant difference in the social performance of students with intellectual disability having high & low; moderate & low assistive technology levels.

Keywords: Assistive Technology, Social Performance, communication, community living and Intellectual Disability

Introduction

Intellectual disability (ID) refers to a developmental problem manifested in children's years of growth (i.e. 0-18 years of age). It is a condition that the intelligence and adaptability of the child are substantially lower than the average level of the child's peers. Further, social performance of students with intellectual disabilities can be characterised as social skills impairments that are typically demonstrated in at least one of three areas, such as the level of social interaction skills of the child, the development and stability of peer relationships and friendships, and the ability of the child to process social information.

On the other hand, Assistive technology(AT) refers to any service or product that can be used by persons with disability to overcome difficulties they may face in carrying out daily activities of their choice that would otherwise be restricted by their impairments. Eyeglasses, hearing aids, pencil gripper, reading pen, talking calculator, wheelchairs, brails and lifts are examples of Assistive technology. However, innovations such as WhatsApp, Skype, Twitter and Facebook are currently inaccessible to most of the people with Intellectual disability. Importantly, assistive technology includes services and the environment in which they operate, including "mainstream technologies and those specifically developed for people with disabilities. (John Owuor, Fiona Larkan & Malcolm MacLachlan,2017)

Need for the study

Children with Intellectually Disability are often at risk for problems in social development. These children lack the social and language skills needed to initiate and maintain relationships. The social repertoires of children with intellectual disability are limited compared to those of normal children. One of the early findings by Guralnick&Weinhouse (1984) and Strain (1984) was that children with intellectual disability initiate fewer social interactions and demonstrate fewer responses to peers when compared to normal children. Hence people with intellectual disabilities are facing several challenges in today's society. The lack of adequate support services, for example, which enables or encourage access to transport, access to information, building access, and communication in different formats and structures result in a situation where people with disabilities are forced to rely on their families. Thus, it prevents them from being socially inclusive and integrated into society. But now a new ray of hope with the emergence of assistive technology which includes virtual technology has paved a way in developing social skill among children with Intellectually Disability.

Assistive technology such as digital technology has been identified as a social inclusion facilitator because it enables real-time resources to be delivered that will allow individuals to learn, work, travel, socialise, shop and connect with the community without being subject to physical barriers. Assistive technologies have also been described as one of the most significant factors that can help to minimise existing social disparities and can be used to facilitate and promote social inclusion and increase people's skills (Manzoor & Vimarlund, 2018).

Evidence of the benefits of community living for people with ID is clear. However without access to assistive technologies, people with IDs can be isolated from the community. They can be excluded and left behind; hence there is a need for action now to stop the growing exclusion of people with ID in community. AT can be mediator for people with ID to achieve not only their rights but also the highest possible quality of life and a sense of participation and belonging in society. Hence this study was attempted to find the relationship between assistive technology and social performance of students with intellectual disability.

Objectives of the Study

The present study was undertaken with the following objectives:

1. To find out the relationship between Social Performance (Communication & Social activities and Community Living) of students with intellectual disability and Assistive Technology
2. To find out whether the difference in levels of assistive technology usage would account for the significant differences in the social performance of students with intellectual disability

Hypotheses

1. There is no significant relationship between social performance viz., Communication & Social Activities and Community Living of students with intellectual disability and Assistive Technology.

The following minor hypotheses were derived from the above

- 1.1 There is no significant relationship between Social Performance (Communication and social Activities) of students with intellectual disability and Assistive Technology.
 - 1.2 There is no significant relationship between Social Performance (Community Living) of students with intellectual disability and Assistive Technology.
 - 1.3 There is no significant relationship between Social Performance of students with intellectual disability and Assistive Technology.
2. Levels of Assistive Technology does not account for significant difference in the social performance of students with intellectual disability.
 - 2.1 There is no significant difference in the Social Performance of students with intellectual disability, with high, moderate and low levels of Assistive Technology.

Sample and Sampling Technique

The population for the study consists of special educators working in different intellectual disabled special schools. Sample of the present study constitutes the 120 special educators from special schools for intellectual disability in the city of Bangalore. The samples were selected using purposive sampling method.

Tools of the Study

The following research tools were used to collect the data :

1. Social Performance Scale(SPS) developed by the researcher; Kalyani and the guide Dr.HaseenTaj (2019) was used to measure the Social Performance of students with intellectual disability
2. Assistive technology Scale(ATS) developed by the researcher; Kalyani and the guide Dr.HaseenTaj (2019) was used to measure assistive technology of students with intellectual disability.

Statistical Technique used for Data Analysis

The following statistical techniques used for data analysis

1. Karl Pearson's Product Moment Coefficient of Correlation
2. 'Oneway ANOVA

Analysis and Interpretation

3. **Null Hypothesis 1:** There is no significant relationship between social performance viz., Communication & social Activities and Community Living of students with intellectual disability and Assistive Technology.

Table-1

Table shows the Number, Degree of Freedom, "r" value and Level of Significance of Assistive Technology with Social Performance and its Components.

Variables	N	df	'r' value	Significance level
Assistive Technology with				
Communication & Social Activities	120	118	0.368	**
Community Living	120	118	0.402	**
Social Performance	120	118	0.422	**

**Significant at 0.01 level(0.254);

From the above table-1, it can be seen that the obtained 'r' values 0.368, 0.402 and 0.422 are higher than the table value 0.254 at 0.01 level of significance. Therefore the null hypothesis was rejected and the alternate hypothesis was formulated that "There is a significant and positive relationship between social performance viz., Communication & Social Activities and Community Living of students with intellectual disability and Assistive Technology.

Null Hypothesis 2: There is no significant difference in the Social Performance of students with intellectual disability, with high, moderate and low levels of Assistive Technology.

Table-2

Table shows Result of One-way ANOVA test for Assistive Technology with Social Performance

Variables	Sources of variation	DF	Sum of Squares	Mean Squares	F-Value	Significance Level
Social Performance	Between group	2	2613.775	1306.888	10.033	**
	Within group	117	15240.816	130.263		

**Significant at 0.01 level

It is inferred from the above table 2 that assistive technology from differently levels considerably differs in social performance of students with intellectual disability. The obtained F-value 10.033 was found to be significant at .01 level and hence assistive technology does accounts for significant differences in social performance of students with intellectual disability .

Therefore the null hypothesis 2 is rejected and in its place alternative hypothesis was accepted. i.e., there is a significant difference in social performance of students with intellectual disability with different levels of assistive technology..

Table-3

Pair wise comparison (Mean difference) of Assistive Technology with Social Performance of students with intellectual disability by Tukey HSD Posthoc procedure

Assistive Technology	Mean Differences	Standard Error	Significance
High & Moderate	5.130	2.545	NS
High & Low	13.175	2.972	*
Moderate & Low	8.045	2.574	*

** Significant at 0.05 level; NS- Not Significant

Further the Tukey post-hoc test revealed that the mean score of students having high assistive technology level(M=71.24) show greater social performance than the students having low assistive technology level (M=58.07)

Further the Tukey post-hoc test also revealed that the mean score of students having moderate assistive technology level (M=63.24) show greater social performance than the students having low assistive technology level (M=58.07)

Conclusion

The study revealed that there was a significant positive relationship between Social Performance (Communication & Social Activities) of students with intellectual disability and assistive technology. Further the study also reveals that there was a significant difference in social performance of students with intellectual disability having high & low; moderate & low assistive technology levels. Hence assistive technology has the potential to enhance social performance which includes socialization and community living for people Intellectual Disability. Comprehensive access to assistive technology can enable students with intellectual disability to interact with friends and family like a normal child. Assistive technology can enhance mobility and access to health and social care services. Assistive technology can improve digital inclusion and enable students with intellectual disability to attend regular schooling instead of isolation in special schools. Assistive technology can also be used for skills training to include people with Intellectual Disability in the labour market. Various researchers suggested that virtual reality may be a powerful tool to ameliorate the issues with generalizing what is learned during classroom social skills lessons to the real world (Parsons & Mitchell, 2002).

References

- Ahmed Areej(2018), Perceptions of Using Assistive Technology for Students with Disabilities in the Classroom, *International Journal of Special Education*,33(1).129-139.
- Boot, Fleur & Louw, Julia & Kuo, Hung-Jen & Chen, Roy. (2019). Editorial: Intellectual Disability and Assistive Technology. *Frontiers in Public Health*. 7. 10.3389/fpubh.2019.00171.
- Edwardraj, S., Mumtaj, K., Prasad, J. H., Kuruvilla, A., & Jacob, K. S. (2010). Perceptions about intellectual disability: a qualitative study from Vellore, South India. *Journal of intellectual disability research: JIDR*, 54(8), 736–748. <https://doi.org/10.1111/j.1365-2788.2010.01301.x>
- Guralnick, M. J., & Weinhouse, E. (1984). Peer-related social interactions of developmentally delayed young children: Development and characteristics. *Developmental Psychology*, 20(5),815827. <https://doi.org/10.1037/0012-1649.20.5.815>
- John Owuor, Fiona Larkan & Malcolm MacLachlan (2017) Leaving no-one behind: using assistive technology to enhance community living for people with intellectual disability, *Disability and Rehabilitation: Assistive Technology*, 12:5, 426-428, DOI: 10.1080/17483107.2017. 1312572
- Karra Aruna (2013), Social Skills of Children with Intellectual Disability attending home based program and Children attending regular special schools- A Comparative Study , *International Journal of*

Humanities and Social Science Invention , 2(8),59-63. ISSN (Online): 2319 – 7722, ISSN (Print): 2319 – 7714.

- Manzoor, M., Vimarlund, V. Digital technologies for social inclusion of individuals with disabilities. *Health Technol.* **8**, 377–390 (2018). <https://doi.org/10.1007/s12553-018-0239-1>
- Parsons S, Mitchell P. (2002) The potential of virtual reality in social skills training for people with autistic spectrum disorders. *Journal of Intellectual Disability.* 46(5) :430–33. <https://doi.org/10.1046/j.1365-2788.2002.00425.x>
- Prakash, Jyoti & S, Sudarsanan & HRA, Prabhu. (2007). Study of behaviour problems in mentally retarded children. *Delhi Psychiatry Journal.* 10(1). 49-54.
- Salzer, M.S., & Baron, R.C. (2006). *Promoting Community Integration: Increasing the Presence and Participation of People with Psychiatric and Developmental Disabilities in Community Life.* Philadelphia, PA: the University of Pennsylvania Collaborative on Community Integration. Available online at www.upennrrtc.org.
- Strain.P.S (1984).Social behavior patterns of nonhandicapped and developmentally disabled friend pairs in mainstream preschools.*Analysis and Intervention in Developmental Disabilities*, 4(1).15-28,[https://doi.org/10.1016/0270-4684\(84\)90015-6](https://doi.org/10.1016/0270-4684(84)90015-6).
- Thorn, Shannon & Pittman, Amanda & Myers, Rachel & Slaughter, Connie. (2009). Increasing community integration and inclusion for people with intellectual disabilities. *Research in developmental disabilities.* 30. 891-901. 10.1016/j.ridd.2009.01.001.
- Sravan Kumar Sriram (2014), A Study on Awareness about Mental Retardation among Regular School Children, *International Journal of Education and Psychological Research (IJEPR)* Volume 3, Issue 4, 63-67.
- Yankova.Zh & Yanima.A (2010).Assistive Devices and technology in education of children and students with mental retardation, *Trakia Journal of Sciences*, 8(2), 273-277.