

# Educational Mobile Apps Enhancing Communication Skills in Children With Autism in Arab Countries

Asma Nasser Alzahrani

 <https://orcid.org/0000-0003-3520-3273>

*College of Education, Majmaah University, Saudi Arabia*

## ABSTRACT

This exploratory literature review investigates the landscape of educational mobile applications designed for children with autism spectrum disorder (ASD) in Arab countries, with a specific focus on their efficacy in improving communication skills. After a comprehensive search of academic databases and digital libraries, nine studies were reviewed. These studies discussed seven Arabic-language applications designed for ASD children. Consistent with previous research findings, these applications were found to be effective in enhancing communication skills among ASD individuals. By shedding light on the few existing Arabic-language educational mobile applications for ASD children in Arab countries, this comprehensive review contributes significantly to the discourse surrounding ASD interventions. Additionally, it highlights the immediate need for linguistically and culturally sensitive educational applications, designed for a specific population of Arab children with ASD.

## KEYWORDS

Arab Countries, Arabic Language, Autism Spectrum Disorder, Communication Skills, Educational Mobile Apps

## INTRODUCTION

Autism spectrum disorder (ASD) is a neurodevelopmental disorder characterized by a range of challenges regarding social interaction, communication, and repetitive behaviors. ASD is termed a “spectrum” disorder because individuals with ASD present with a wide variety of symptoms, severity levels, and combinations of different features. ASD is typically diagnosed in early childhood and persists throughout a person’s life (American Psychiatric Association, 2013). A core feature of ASD is having difficulty with social communication; aspects may include deficits in nonverbal communication skills such as gestures, facial expressions, and body language (Hyman et al., 2020). Aburukba et al. (2017) observed that individuals with ASD face significant challenges in expressing themselves and communicating their needs. In some instances, they may not develop speech at all, which greatly limits their ability to communicate. Farzana et al. (2021), for example, notes that about 25% of children diagnosed with ASD experience nonverbal autism. Social communication difficulties can significantly impact a child’s ability to form and maintain relationships, engage in reciprocal social exchanges, and interpret social cues appropriately (Hyman et al., 2020). They can also hinder the ability to learn, when learning depends on communication and familiarity with a teacher (Almalki, 2022).

DOI: 10.4018/IJICTE.359439

This article published as an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>) which permits unrestricted use, distribution, and production in any medium, provided the author of the original work and original publication source are properly credited.

The prevalence of ASD has increased worldwide, and this trend is mirrored in the Arab world (Al-Hendawi et al., 2023). In their analysis of the epidemiological landscape of ASD in the Arab Gulf, Salhia et al. (2014) found possible metabolic, autoimmune, and environmental risk factors, in addition to a prevalence range of 1.4 to 29 cases per 10,000 people. Between 2015 and 2018, 1.14% school-age children in Qatar were diagnosed with ASD (Salhia et al., 2014). Additionally, the World Population Review found a high prevalence of ASD in Arab nations like Oman (1 in 93), Bahrain (1 in 97), Qatar (151.2/10,000 or 1 in 66), the United Arab Emirates (UAE; 1 in 89), and Saudi Arabia (1 in 99) (Al-Hendawi et al., 2023). These findings emphasize the importance of early diagnosis and successful intervention (Al-Hendawi et al., 2023; Salhia et al., 2014).

Paul (2008) outlined various interventions to promote communication and language skills in children with ASD, including face-to-face interaction, augmentative and alternative communication aids (AAC), and video modeling. The most common interventions used with ASD are AAC and the Picture Exchange Communication System (PECS) (Farzana et al., 2021; Hussain et al., 2021; Paul, 2008). A recent trend in AAC intervention is using smartphones and tablets, such as the Apple iPad, as speech-generating devices (McLay et al., 2015). According to Xin and Leonard (2015), a complete high technology AAC system can be provided utilizing applications made specifically for these devices, such as Proloquo2go, MyTalk, and SonoFlex. Using these applications, children with ASD can follow the process of learning by listening to a sound, after interacting with a picture of an object. Such applications can also help parents and educators to understand children's needs and thereby avoid miscommunication (Hussain et al., 2021).

While Hussain et al. (2021) found “nearly 700 mobile device apps listed on [the] ‘Autism Apps’ section on [the] Autism Speaks website” (p. 162), publications in the field of AAC have highlighted the lack of AAC technologies supporting individuals with ASD in the Arabic language (Al-Arifi et al., 2013; Hajjar et al., 2021; Zibin et al., 2023). Sweidan et al. (2022) further note that even though Arabic is the first language of more than 300 million people, most well-known autism applications lack Arabic content. This study was driven by this observation.

Despite the importance of technology in effective interventions for ASD, the existing literature lacks a comprehensive review focusing on educational mobile applications and their impact on communication in children with ASD in Arab countries (Abou El-Seoud et al., 2015; Sweidan et al., 2022; Zibin et al., 2023). Therefore, this article explores published studies from 2013 to 2023 that examine Arabic-language educational applications for multipurpose, handheld devices and their impact on communication in children with ASD.

## METHODOLOGY

The approach to this literature review was exploratory, designed to investigate educational mobile applications for children with ASD in Arab countries. The focus was specifically on the communication skills improvements attributed to these applications. This investigation aimed to identify and synthesize findings from relevant research to provide insights into the current state of educational applications and their impact on ASD children. Exploratory literature reviews are conducted to show that there has been minimal or no previous research on the specific group, process, or activity being examined (Hunter et al., 2019). This approach can highlight gaps in the current literature and suggest areas for further investigation, thereby advancing the field (Yin, 2018).

### Literature Search Procedures

The author conducted an electronic search using nine databases: EBSCO, ERIC, Google Scholar, Education Research Complete, ProQuest, Taylor and Francis Online, Sage Journals Online, Springer LINK, and Saudi Digital Library. The search included terms for ASD combined with Arab countries' names and their recognized abbreviations. The following search string was used in all fields: *(educational apps for communication \* OR iOS devices and communication OR autism and iPads*

11 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: [www.igi-global.com/article/educational-mobile-apps-enhancing-communication-skills-in-children-with-autism-in-arab-countries/359439](http://www.igi-global.com/article/educational-mobile-apps-enhancing-communication-skills-in-children-with-autism-in-arab-countries/359439)

## Related Content

---

### Examining the Theoretical Factors that Influence University Students to Adopt Web 2.0 Technologies: The Australian Perspective

Yasser D. Al-Otaibi and Luke Houghton (2015). *International Journal of Information and Communication Technology Education* (pp. 1-26).

[www.irma-international.org/article/examining-the-theoretical-factors-that-influence-university-students-to-adopt-web-20-technologies/120479](http://www.irma-international.org/article/examining-the-theoretical-factors-that-influence-university-students-to-adopt-web-20-technologies/120479)

### Innovating Remote Learning: The Next Frontier in Education and Experimentation

Anilkumar Vishwanath Brahmane, Yash Anthony Dive, Praksh P. Rokade and Dinesh D. Puri (2025). *Revolutionizing Education With Remote Experimentation and Learning Analytics* (pp. 229-244).

[www.irma-international.org/chapter/innovating-remote-learning/373613](http://www.irma-international.org/chapter/innovating-remote-learning/373613)

### Advancing the Effective Use of Technology in Higher Education

Sally M. Johnstone (2009). *Encyclopedia of Distance Learning, Second Edition* (pp. 62-65).

[www.irma-international.org/chapter/advancing-effective-use-technology-higher/11737](http://www.irma-international.org/chapter/advancing-effective-use-technology-higher/11737)

### Social Networking among Library and Information Science Undergraduate Students

Onome Norah Alakpodia (2015). *International Journal of Information and Communication Technology Education* (pp. 90-99).

[www.irma-international.org/article/social-networking-among-library-and-information-science-undergraduate-students/127724](http://www.irma-international.org/article/social-networking-among-library-and-information-science-undergraduate-students/127724)

### Corporate - Higher Education Alliance

François Guillothe and Jacques Gaumont (2009). *Encyclopedia of Distance Learning, Second Edition* (pp. 487-497).

[www.irma-international.org/chapter/corporate-higher-education-alliance/11798](http://www.irma-international.org/chapter/corporate-higher-education-alliance/11798)