1. Background

- Autism Spectrum Disorder (ASD) is a pervasive neurodevelopmental disorder that creates difficulties in social communication, and limited, repetitive patterns of behaviors, and interests.
- According to [1], which is an article published on the Centers for Disease Control and Prevention website, one in every 59 children in the US is autistic, which represents an increase of 16.9% since their last statistics two years ago.
- It places a heavy financial burden on such families since therapy programs cost a huge amount of money.


2. Objectives

Exploiting autistic children’s focus on smartphones for treating autism
Therapeutic learning provided at homes
Reducing expenses imposed on families.

3. Methodology

- Distributing a questionnaire to families that have children with ASD.
- Create an application aiming to teach children using their smartphones as shown in Figure 1.

4. Results & Conclusions

- Distributed a questionnaire to families that have children diagnosed with ASD and obtained 12 responses. 11 of the children frequently used tablets/iPads where 8 of them used it for an average of 3 hours and the rest for an average of 1 hour. In addition, 8 of these children mainly used the YouTube application on these devices.
- Preliminary application was created, however, did not reach completion phase.
- Design Considerations
  1) Appealing colors for autistic children (i.e. blue & brown)
  2) Personalize the language based on family roots
  3) Add new lessons as parents & caregivers see fit
  4) Creating incentives for autistic children to keep learning
- A dataset of HQ pictures copyright-free to be used in the application

5. Significance

Any work related to ASD is an initiation to face the challenge accompanied by diagnosing a child with this disorder aiming to tackle it from childhood. Many families have suffered on global and local scales. According to a study conducted by Qatar Biomedical Research Institute (QBRI), one out of 87 children is susceptible to be diagnosed with ASD (one in 56 boys and one in 230 girls have ASD in Qatar) [2]. Unfortunately, ASD origins are unknown and cure is not discovered, hence, it is more important than ever to minimize its symptoms.


6. Post-project recommendations and plans

- An enhanced design of the whole application with further distribution to families with ASD-diagnosed children as shown in Figure 2.