

# Maritirukan Aku Bisa: Android application for learning social skills of children with social emotional barriers

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**Abstract:** Android application development for online knowledge dissemination is urgently needed at this time. This study aims to develop an android application for learning social skills of children with social emotional barriers. The research participants consisted of 10 students, 75 respondents including teachers and parents of students in partner schools from Jakarta, Purwokerto, Pekanbaru, and Banjarmasin. The design of the android application was validated by four educational experts from universities. Data were collected through questionnaires and FGDs, and analyzed descriptively. The results obtained are the android application model "Maritirukan Aku Bisa with interactive features developed in the form of films, games, movements and songs as well as recording media of student activities, themes developed from aspects of social skills such as attention/concentration, expression/emotions, effective communication, and independence. The android application "Maritirukan Aku Bisa" with updates developed in this study is in accordance with the needs of parents and teachers. The material provided is in accordance with the needs and characteristics of children with social-emotional barriers, and can be accessed independently with the assistance of parents at home. This answers the needs of parents, especially in remote areas throughout Indonesia.

**Keywords:** Android application, *Maritirukan Aku Bisa*, online learning, children with emotional social barrier

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## 1. Introduction

Quality education is greatly anticipated by individuals worldwide as it cultivates aptitudes, competencies, and moral integrity essential for meaningful participation in national life (Organization for Economic Cooperation Development, 2015; Pang, 2022). However, in 2020, in the era of the COVID-19 pandemic which is still not over, there is evidence that the interaction patterns of most people with gadgets and the internet are becoming increasingly familiar. Both in big cities and in regions, young and old and all levels of society. Online facilities via gadgets or laptops are used as a means of communication, online learning, shopping, using transportation and also searching for various information on the internet (Dhawan, 2020). The gadget displays an infinite space where bringing the far one closer together, has a huge impact. Gadget which were initially only used as a means of communicating with people they knew, have developed into a wider medium of communication among the public, not only adults and educated people, but have also spread to elementary school age children (Solehudin, 2023). The internet is an effective means of disseminating knowledge and education to all people in remote areas (Basar et al., 2021).

The development of digital technology-based educational applications has changed the way teachers select and organize new teaching materials and methods adapted to technological developments (Budiarti, 2023). There are many various features presented

by digital application providers for the advancement of education, for example *Power Point, In Shoot, Canva, Kine Master, Filmora* and others, which can be accessed via the Android operating system on gadgets (Mahmudah & Budiarti, 2022).

Gadgets that support education with applications such as presentations, documents, visuals, audio, video, are social media channels that can help human relations and the educational process have been widely used (Kazaz & Dilci, 2022), suitable for children with special needs who usually experience social-emotional barriers are still rarely developed. In Indonesia, gadgets have also become a necessity in social media and educational activities during online learning which are generally based on android applications.

The Android application is basically a development of the teaching materials at *Maritirukan*, but we try to present interactive learning methods with interesting media. The development of learning models for children with special needs is still very much needed, both facilities, infrastructure and learning strategies require the role of academics in making various developments in schools, both inclusive and special schools (Huang et al., 2020; Maniotes & Kuhlthau, 2014; Spektor-Levy & Yifrach, 2019).

The application of Android in the world of education has actually been around for a long time since the Android boom for the first time in Indonesia. This is indicated by the existence of educational applications aimed at children such as guessing games or let's count. Good application will interest children and teach various concepts and skills, including eye-hand coordination, listening skills, language skills, numeracy skills, and causality (Jovanka et al., 2021).

The problem of education in the digital era is that the learning system has used digital technology, but the price and security are not guaranteed. With an android-based design, the student learning process becomes flexible, and information can be accessed online anytime and anywhere (Purnama et al., 2021). So that the development of android applications is very important for efforts to fulfill children's learning needs because from the online learning experience for 1.5 years during the COVID -19 pandemic, computer and android applications have become choices for teachers and parents.

Some research on the role of android applications in education includes the design of mobile applications for students with special needs using software designed to be a teaching and learning environment, the program is able to adapt to various levels and learning speeds of individuals who need special education. Karanfiller et al (2017), students are familiar with the use of Android-based learning media, 66.7% of students have used Android-based learning media in the form of videos, and 33.3% have used Android-based learning media in the form of images (Haryanti et al., 2021). Literature studies conducted on tablet computers on student motivation and attitudes, have a major impact on student success from the perspective of teachers (Chen et al., 2016), and students (Soykan & Özdamli, 2017).

Several previous studies observed the identification of social skills problems in children with special needs, such as research by Jurevičienė et al (2023) on development of social skills for children with severe and profound special educational needs has concluded that Empirical research data reveals the peculiarities of the expression of social skills in various environments among students with severe and profound educational needs. It was found that students experienced difficulties in social interaction due to a lack of social skills in all areas. Interaction skills are revealed through difficulties in managing and controlling interpersonal interactions when facing challenges, indicated by avoidance reactions. Difficulty in mastering etiquette is also noted. In addition, children's tendencies to achieve their goals in social situations are revealed. Basic abilities to resist negative environmental influences, deal with peer pressure, and respond appropriately to bullying are also observed (Kelly, 2015). The desire for independence is clear, but confirmation from adults is needed. Communication skills are demonstrated through the ability to initiate contact, maintain short-term eye contact, and personal space during conversation. Communication needs are met on a basic basis language tools and non-verbal

communication (Wahyuni, 2018). So, this research highlights the use of technology-based applications for learning social skills for children with special needs at an early age.

The android application model "*Maritirukan Aku Bisa*" contains training materials for children's social skills, an evaluation form in the form of games and virtual question and answer. The process of making this learning media is technically carried out by a trusted learning media manufacturing company in Indonesia, which has been involved since the beginning as a research partner in the development of this model. The goal is to develop the social skills of children with social-emotional barriers at the kindergarten and primary school levels, both in inclusive school settings and in special classes. Given that this model aims to enhance children's social skills, encompassing elements such as attention or concentration, emotional expression, effective communication, and independence (Suharsiwi & S. Pandia, 2021).

## 2. Materials and Methods

This study used a Research and Development (R&D). The research participants consisted of 10 students from partner schools in Jakarta, Semarang, Pekanbaru, and Banjarmasin. There were four experts who validated the results of the application design from academics, while the implementation was carried out by 75 teachers and parents spread across partner schools providing services for children with special needs.

The partner schools in this research are schools that use an inclusive approach, which integrates children with special needs into the general school environment. This involves providing specialized support and adaptations in curriculum and teaching methods and having trained educators. The partner schools have accessed facilities whether for children with special needs or parents and communities. In addition, the schools also implement the use of technology such as software or communication tools to support the learning and participation of children with special needs.

Application development is part of the "*Maritirukan*" web content development stage process which is carried out by developing a model based on the results achieved in university basic research. The process of making instructional media is technically carried out by research partners, namely well-known companies engaged in the field of learning media located in the Bogor area which have been involved since the beginning of this model was designed. Meanwhile, other partners are universities in the Pekanbaru, Banjarmasin, and Purwokerto which assist the involvement of partner schools. Data was collected through questionnaires and focus group discussions (FGD) with teachers and school principals. Quantitative data were analyzed descriptively, qualitative data were analyzed through reduction, display and verification stages. The initial examination indicates that Covid-19 pandemic hinders the learning process in general. Most of the students experienced monotonous learning during the online sessions.

## 3. Results

In online learning, the use of distance learning applications functions as an interactive medium for teachers to carry out the learning process with. In addition to functioning as educational tools that overcome spatial and temporal constraints, these media also play communicative, motivational, meaningful, and perceptual roles, ensuring individual equality by catering to individuals' diverse talents and interests (Coman et al., 2020; Florina & Zagoto, 2019).

Amid the pandemic and the prevalence of online learning, audio-visual learning tools like educational videos, recorded activities, commercial films, TV programs, and social networking podcasts, are extensively employed as learning media. The broad utilization and distribution of audiovisual resources in classrooms are typically justified by the belief that films and videos can: (1) cultivate critical thinking skills in students, (2) ignite and enhance students' interest and motivation, and (3) bring real-life scenarios into the classroom while establishing direct pathways to cognitive and affective understanding (Florina & Zagoto, 2019). As in research, the use of audio-visual media can improve the writing skills of fifth graders at Wonosari IV Primary School of Gunungkidul.

Suharsiwi, S., Fadilah, N., and Farokhah (2022) said that the application of films is deemed an effective medium for facilitating learning among children in kindergarten and elementary school. Children can derive visual enjoyment from the learning process and have the option to revisit the material as desired. It is attributed to the film's ability to present dynamic images and sounds, creating a special appeal for young learners (Suharsiwi & Pandia, 2021). Similarly, in the present study, the utilization of visual media, featuring images of individuals engaged in prayer and ablution, is expected to generate interest and enjoyment in the learning experience. It underlines that the image-based media in this research, employing sequential images, can function as a tool fostering the development of cognitive thinking, affective responses, and psychomotor skills related to narrative essay writing (Borchardt et al., 2019; Song et al., 2023).



Figure 1. Android Learning App Features Maritirukan Aku Bisa

The Android application “*Maritirukan Aku Bisa*” was developed by the experts in technology and educational field (including child and special need education experts). The education experts with special needs were taken from Extraordinary Education Department at Universitas Negeri Jakarta (UNJ) and the media were taken from academics. The technical team for creating learning media involved multimedia experts from Dwida Jaya Tama Co. Ltd, a company that operates in the field of teaching aids and educational media starting from the early childhood, elementary school, and secondary school levels. However, the coordination with the research team was intense considering that the stages of the android application model had a fairly long process.

Android-based learning media have been developed by several researchers, considering that in this era, the use of gadgets, laptops and the internet has become a daily meal for people. Teachers, parents and children are also getting used to distance learning, using face-to-face online applications using *Zoom*, *Google meet*, *WhatsApp* call and many other applications that can be used as online facilities. Both for face-to-face online and for facilities for children to submit assignments from the teacher (Prasetyo & MS, 2021; Schallert et al., 2020).

Although it is widely understood that there are many obstacles in the field related to the mastery of online technology by teachers, there are also other obstacles from parents and children (Auladi, 2020). In the learning process, parents play an important role in providing positive parenting, creating a family environment that supports the development of children's social skills. Build open communication with children to understand their feelings and experiences, and provide positive encouragement for talking and interacting with other people. In addition, it provides opportunities to interact with peers and other community members, such as through social activities.

Parents can model positive behavior such as showing empathy, cooperation and tolerance in daily interactions. Parents can also provide guidance and support when children face challenges or resolve conflicts, as well as help them understand their feelings and find positive solutions. The involvement of outside parties, such as therapists, counselors, or support groups, can be a valuable addition for children, especially those with special needs.

**Test the eligibility of the application model let's imitate from experts and practitioners**

The media “*Maritirukan Aku Bisa*” is an Android-based application that was developed by integrating five learning stages for students, including let's imitate, let's do it, let's answer, let's talk, and let's play (Table 1). The five learning stages are designed to provide students with a learning space. The test results show that in general the features and content in the media are appropriate and interesting. However, there were several suggestions regarding the design which then made several revisions to the contents.

Table 1. Learning Theme *Maritirukan Aku Bisa*

Themes	Information
Let's imitate	Contains exercises for children to express through films, pictures and audio
Let's do it	Contains exercises for children to develop social behavior through films, pictures and audio
Let's answer	Contains exercises for children to develop thinking skills through film, pictures and audio media
Let's talking	Contains exercises for children to develop speaking skills through film, pictures and audio media
Let's play	Contains exercises for developing aspects of child development through play activities.

User assessments were carried out on 35 classroom teachers and accompanying teachers for children with special needs from 23 schools in Pekanbaru, Banjarmasin, Central Java and Jakarta. The teachers were randomly selected who are willing to cooperate in providing input and are research partners who will also assist in conducting widespread trials when the application is ready to be applied in the field. Cooperation carried out related to field data collection by class teachers, school principals, and inclusive assistant teachers; It was done by filling out the children's observation forms, interviews, and FGDs with teachers. The assessment of the media is carried out by displaying a demo of the application media by a partner team of learning media providers and the teachers are given an assessment form that has been provided by the researcher. Table 2 shows the results obtained.

Table 2. Android application learning media assessment

No	Criteria	Result
1	Easy to use	100%
2	Cartoon movies in an interesting application	100%
3	Features Let's play interesting for children	100%
4	Features Let's answer develop children's thinking skills	100%
5	Let's talk feature can develop children's speaking skills	100%
6	The Let's do it feature is presented to practice social behavior	100%
7	The Let's do it feature in the application can train social behavior	100%
8	Features Let's imitate which is presented to train children's expressions	100%

Additional comments from experts show that this application has very good features. The application is also interesting and easy for children to understand, so it is very possible to help educators in conveying special material to children with special needs and assist teachers in developing children with special needs. Some suggestions for improvement include the need to add bold letters and numbers, add songs, and modify images to make them look more attractive. Apart from that, the addition of several features also needs to be considered for religious learning (*sholawat*, songs such as the pillars of Islam and faith), songs with English vocabulary, and adding features or videos

regarding gross motor and fine motor stimulation, so that parents and teachers can do or stimulate their children at home. Apart from that, it is also deemed necessary to add guidelines for application use as a social environmental education effort.

#### 4. Discussion

Based on a previous study on 10 children with social-emotional barriers who came from inclusive and special schools, on average they experienced problems in acquiring social skills, such as problems in social interaction, mutual communication and independence. These three aspects will grow if parents or teachers give children the opportunity to practice a variety of simple social skills such as practicing understanding simple instructions, getting along with friends and family, greeting, eating and drinking without assistance, putting shoes and toys in place, and other activities that show development. Children's social skills, especially children's independent behavior problems that require a process that develops based on age and level of complexity. Independence itself is important considering that it is a provision for children to be able to interact and be well received by the people around them (Suharsiwi & Pandia, 2021). The development material is summarized in the learning media contained in the application, *Maritirukan Aku Bisa*.

Android applications become interactive learning media for children and are an important part of teaching, especially for children with developmental disabilities who tend to learn visually and like to see moving pictures. *Maritirukan* is a film that was developed as a medium for learning social skills for children with emotional social barriers. The film *Let's imitate* is analyzed with three aspects consisting of the needs of parents and teachers for educational films, assessment of film material, and the readability of films for children with growth and development barriers. In general, all these aspects are included in the good category (Suharsiwi & Pandia, 2021). The results of this research are in accordance with the results of the research (Krasniqi et al., 2022) who concluded that there are many assistive technologies that can be used for learning for children with Down syndrome (DS), with mild to severe intellectual and developmental disorders. Most of the assistive technologies reviewed were received with enthusiasm, especially video games and easier troubleshooting tasks. It contributes to better orientation, hand-eye coordination, and performing some of the daily activities of DS children and adults. The successful execution of the intended task increases their self-esteem and self-efficacy. The use of audio-visual media such as films makes learning more interesting (Suharsiwi, S., Fadilah, N., & Farokhah, 2022) motivate and eliminate boredom in the online learning process.

This Android application for children with special needs also contains several activities to overcome boredom in children. The interactive game features developed in it can be an effective way to get children more involved. Apart from that, there is also a reward system as positive reinforcement in the application which can provide extra motivation for children with special needs to get involved and stay focused in their activities. Attractive visual and audio design can help attract children's attention, such as the use of bright colors, graphics, and pleasant sounds. Furthermore, parental involvement in the use and development of this media is also very necessary. Some suggestions from parents suggest the need for regular updates by adding exploration features that can make children more interested. Additional features in the form of games that teach cognitive, motor or language skills can also be adjusted to the needs and development level of children as users.

Although student initiatives are important in learning mediated by this application, the teacher's strategic guidance also plays an important role because only teachers can have a clear understanding of the long-term goals of education (Cabello et al., 2021). Creative efforts to produce valuable products only through deliberate but flexible arrangements and systematic guidelines. Such examples show how essential develop new practices in learning in elementary school or early age by utilizing affordable and safe technology applications for all. Student initiatives are important in learning mediated by

this application, the teacher's strategic guidance also plays an important role because only teachers can have a clear understanding of the long-term goals of education. Creative efforts to produce valuable products only through deliberate but flexible arrangement and systematic guidelines (Srinivasan et al., 2017). It shows how important develop new practices in learning in elementary school or early age by utilizing affordable and safe technology applications for all. After entering this digital era, the design of the development process in the collaboration education system can improve digital competence by integrating blockchain technology into an efficient learning process. Blockchain technology has a decentralized and safe network (Prawiyogi et al., 2021). So that automation and data recording can be in all areas on computer networks, to face competitive challenges (Purnama et al., 2021). Based on the analysis and discussion of the description above, it can be explained that the development of features in the Android application "Let's Imitate I Can" can be used to improve the social skills of children with social-emotional barriers in kindergarten and elementary school levels. This is evidenced by the positive results of the validation of educational experts and practitioners from 71 teachers in partner schools. Obstacles in social interaction, mutual communication, and independence in children with special needs can be assisted by teachers or parents through the use of the *Maritirukan Aku Bisa* application.

## 5. Conclusions

The *Maritirukan Aku Bisa* application is a web-based media update that is considered more applicable and easy to access, both from the teacher's or parent's perspective because it suits the needs of children in inclusive schools. So this Android application can be an alternative for parents and teachers to train children's social skills both at home and at school. Furthermore, this can be a solution for parents regarding the availability of online learning media for their children, especially those who live far from special education services in their area. A future research development would be to conduct a longitudinal study with a comparison group of students participating in several versions of the program and another group in an experiment to test various variables as a result of this implementation.

## Conflicts of Interest

Authors assert the absence of any conflicts of interest.

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