

Know Your Rights: A Mobile App for Child Rights Education in India

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Abstract—In India, more than 400 million children represent the future of the nation, but protecting their rights remains a critical but complex problem. Even though there are laws in place, a lack of awareness about these protections leaves many children at risk of being exploited, abused, and deprived of fundamental rights. This vulnerability stems from both a lack of awareness and limited access to information and support. To bridge this gap, we have developed the mobile app "Know Your Rights!". This paper details the app's development to provide engaging and age-appropriate learning on rights for children aged 6-12 in India. The app incorporates interactive games and personalized content, including educational videos, to educate children on legal issues. It aims to promote active learning and retention of legal knowledge. The proposed app has the potential to empower children to understand their rights, protect themselves from harm, and promoting child rights awareness and legal literacy in India.

Index Terms—Gamified Legal Education, Child Rights Awareness, Legal literacy for children, Interactive games, educational content.

I. INTRODUCTION

In India, a significant proportion of the population remains marginalized and lacks awareness of fundamental rights. It is therefore important to teach children legal skills so that they are able to gain legal literacy, thereby enhancing their understanding of basic legal principles and procedures. This knowledge helps individuals make informed decisions, protects them from exploitation, and enables them to seek justice in cases of abuse.

Children are India's future, and they can support the rule of law in society. In order to achieve this vision, it is therefore crucial to equip children with legal literacy from an early age.

According to studies by the Pratham Council for Vulnerable Children (PCVC), 67 % of children in India are unaware of their rights, raising concerns

about their ability to protect themselves from harm. Furthermore, 20 % of children felt unsafe while commuting to school, and 25 % report experiencing eve-teasing, harassment, and verbal and physical abuse. In addition, only 22 % of children consider their opinions in household decision-making processes, whereas 46 % do not consider their opinions [2].

Information from the National Crime Records Bureau (NCRB) shows that approximately 150,000 cases of crimes against children were reported in 2021, with 36.05 % classified under the Protection of Children from Sexual Offences Act (POCSO) [12].

The 2011 census highlights the challenges faced by children in India. It estimates that 33 million children are engaged in child labor [13], and UNICEF has highlighted persistent issues such as a high prevalence of malnutrition, with roughly (38.4 % of children experiencing stunting due to inadequate nutrition. Additionally, there is concern about the quality of education, with only (42.5 % of third-grade students able to read texts intended for first-grade students. Furthermore, concerns arise regarding the transmission of preventable diseases through vaccinations and the pervasive issue of child labor [4].

India bears the world's highest number of child brides. It ranks fourth among the eight South Asian countries in terms of prevalence of child marriage [13].

Legal literacy for children offers a number of benefits. It instills a sense of civic responsibility, enabling them to actively participate in a democratic society. It equips them with the knowledge to identify and challenge injustices, empowering them to stand up for their rights and those of others.

Legal literacy plays a decisive role in preventing child exploitation and abuse of children. If children understand their rights and legal protection mechanisms, they will be able to protect themselves

from harmful practices such as child labour, trafficking in children and gender discrimination.

There are far-reaching consequences for the lack of legal literacy among children in India. It perpetuates a cycle of vulnerability and exploitation, hindering their personal development and contributing to social inequality. Children who do not know the law often fall prey to unscrupulous individuals and institutions who do not know their right to education, health care and protection from harm.

There is a pressing need for interventions aimed at promoting legal literacy and capacity in children in order to deal with this problem.

II. LITERATURE SURVEY

A. Gamification in education

The research paper "Gamification in Education" highlights the potential benefits, such as heightened engagement, intrinsic motivation, enhanced learning outcomes, acquisition of essential life skills, alignment with curriculum objectives, real-world applicability, and the fostering of digital literacy [5]. The paper "Gamification in Education: a Literature Review" highlights several key findings. First, gamification extends beyond specific subject areas, supporting diverse learning contexts and fostering transversal skills like collaboration and self-directed study. Second, its primary appeal lies in boosting motivation and engagement, transforming learning into an attractive and captivating experience. Third, while empirical studies span various educational levels, a strong focus lies on university applications. Fourth, the adoption of gamification practices within education and professional training is rapidly increasing. Finally, distinct yet complementary relationships exist between gamification and game-based learning, showcasing promising synergies in certain contexts. [1].

B. Awareness Apps in India

In the realm of rights awareness applications in India, a cursory search on the Google Play store and iOS App Store using terms such as 'right,' 'child,' and 'awareness' reveals a limited selection of apps. Notable mentions include 'Bal Raksha' and 'Child Right,' which, albeit rich in content, present challenges for the average user due to their complex nature. A prime example is the 'CHIRAG' app, short

for "Child Helpline for Information on their Rights and to Address their Grievance," launched in 2016. Despite its informative content, the CHIRAG app lacks user engagement, featuring dense blocks of text, downloadable PDFs, and legal jargon, ultimately hindering accessibility [7].

Moreover, other popular rights awareness apps, like 'Hamar Adhikar,' 'Bal Suraksha App,' and 'Know Your Rights,' also grapple with issues of complexity and may not cater to individuals seeking easily digestible information. These observations underscore the need for a more user-friendly and interactive approach in rights awareness applications.

C. An Overview of Existing Online Platforms

Although the websites that already exist provide legal rights and complaint procedures in great detail, they frequently use a conventional text-based layout. Their dependence on traditional formats may present difficulties for consumers who seek interesting and simple-to-understand content, even though they are nonetheless valuable resources. On the other hand, the dearth of informative material and user-friendly interfaces may restrict accessibility to a wider audience, despite the fact that a considerable number of complaints have been filed on these websites. Legal literacy and awareness are not being effectively delivered, as evidenced by this analysis of awareness-raising apps and online platforms. We must move towards a more dynamic and user-centric strategy in order to close this disparity. Thus, a creative mobile app might rewrite the user experience by offering easily accessible and engaging material to individuals who want to learn about their rights under the law.

III. IMPLEMENTED SOLUTION

A. Target Audience

The platform is for children aged 6-12. The design is inclusive and accessible to all children regardless of socio-economic backgrounds, genders or other demographic factors.

B. Key Features

The platform will incorporate a variety of engaging and interactive features to promote learning and retention. These features include:

1) The application features different children rights. With a convenient dropdown menu, user can select a

specific right to instantly access detailed information, making it easy to understand their rights briefly.

2) Quizzes, puzzles, and role-playing scenarios: These activities will allow children to apply their knowledge of children's rights to real-life situations.

3) Videos, audio narratives, and interactive animations: These multimedia elements offer a variety of learning experiences to adapt to different learning styles.

4) Integration with Child Rights Organizations: Partner with reputable organizations for accurate information. Include a directory of resources and support services.

C. Development Process

Initiation Phase

During the initiation phase, the decision to use Flutter with Dart for the Children's Rights app is grounded in its unique advantages. Flutter, developed by Google, offers a robust framework for cross-platform development, allowing to build a single codebase that works seamlessly on both Android and iOS platforms. Dart, as the programming language for Flutter, is known for its simplicity and efficiency, enabling faster development cycles.

The hot reload feature in Flutter significantly accelerates the development process, allowing for quick iterations and immediate visual feedback. This proves crucial for refining features like the dropdown menu, quizzes, and multimedia elements. Flutter's extensive widget library provides a rich set of pre-built components, enhancing the app's UI and ensuring a consistent look and feel across devices.

Moreover, Flutter's expressive language and reactive framework contribute to a smooth and responsive user interface, crucial for engaging activities such as quizzes and role-playing scenarios. The community support behind Flutter ensures access to a wealth of packages, facilitating the integration of features like Firebase for organizational collaboration and real-time communication.

In summary, the decision to choose Flutter with Dart is driven by its ability to streamline development, provide a consistent user experience, and leverage a vibrant ecosystem, making it an ideal choice for crafting an interactive and feature-rich Children's Rights app.

Technical Implementation Phase

In this phase, the technical aspects of the application are addressed. The Flutter framework is set up, and the necessary packages are added to the project's `pubspec.yaml` file. For the dropdown menu, utilized the `DropdownButton` widget and the chosen `flutter_dropdown` package for enhanced functionality.

For quizzes, puzzles, and role-playing scenarios, selected the `flutter_quiz` package or develops custom widgets. The `video_player` and `audioplayers` packages are integrated for handling multimedia elements, while the `flare_flutter` package is used for creating interactive animations.

Firebase packages (`firebase_core`, `cloud_firestore`, `firebase_auth`) are configured to facilitate data storage, user authentication, and interaction with Child Rights Organizations. Virtual session facilitation is implemented using the `agora_rtc_engine` package for real-time communication.

Feature Development and Testing

With the technical foundation in place, we start implementing the application's features. The dropdown menu is designed using the `DropdownButton` widget and the `flutter_dropdown` package. Quizzes, puzzles, and role-playing scenarios are created, utilizing the `flutter_quiz` package or custom widgets.

Multimedia elements, including videos, audio narratives, and interactive animations, are integrated into the app using the `video_player`, `audioplayers`, and `flare_flutter` packages to cater to various learning styles. Ensuring a smooth user experience by testing the application on different devices and screen sizes.

Integration with Child Rights Organizations involves creating a directory of resources and support services. Regular testing, both manual and automated, is conducted to identify and fix bugs or issues.

Final Phase

In the final phase, the application undergoes thorough testing to ensure its stability, security, and performance. Addressing any remaining issues and refining the user interface and experience. Documentation is prepared for future maintenance and updates.

D. Algorithm implemented

Decision Tree Algorithm: We employed a decision tree algorithm to create branching scenarios based on the user's decisions in legal situations. The algorithm dynamically generates a decision tree structure, where each decision node represents a user choice, and each branch represents a possible outcome.

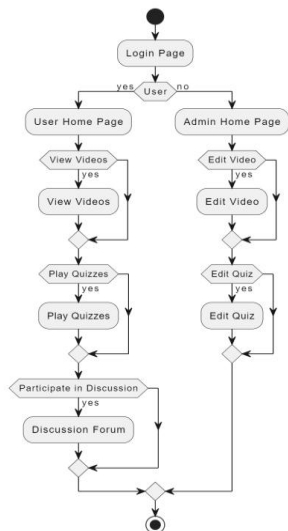


Fig. 1. Flowchart of app

IV. FUNCTIONALITIES

A. Homepage



Fig. 2. Home-page

This tab includes -

- **Child Rights Overview:** Clear and concise information about different children's rights, presented in an age-appropriate manner.
- **Illustrated Definitions:** Engaging visuals accompany each right, promoting understanding and retention. This will certainly help the children understand concept easily.

B. Educational-Videos

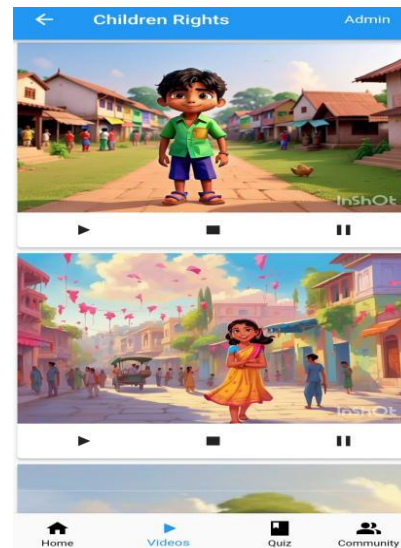


Fig. 3. Video-learning

- Providing easy-to-understand Short, engaging and Com-pelling animated videos learning about the rights in India.covering topics such as right to education, scenario based learning for children. this will help children to take right decisions in any situation.

C. Challenges and Activity

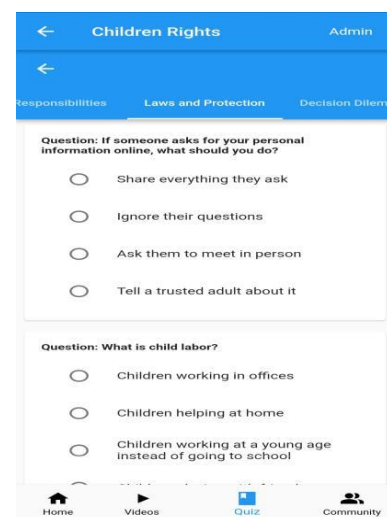


Fig. 4. Quiz section

This tab includes-

- **Interactive Assessments:** quizzes for children on various topics,to test knowledge retention of child rights informa-tion. Questions are curated for children with the motive to help them understand the importance of law for them.

Question are designed for children with 4 options and 1 correct option. Children can engage in these fun quizzes to enhance their learning.

D. Integration with NGO's

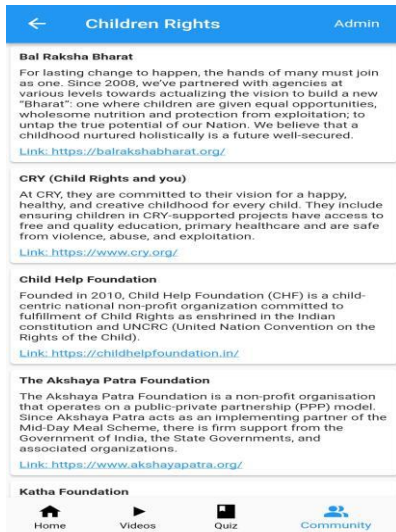


Fig. 5. Quiz

- In this tab various links of different Non-Governmental Organizations (NGOs) are provided for children.
- These organizations work tirelessly to ensure that every child has fundamental rights such as education, health-care, protection from exploitation, and opportunity for safe and nurturing environment to grow.

E. Admin's dashboard

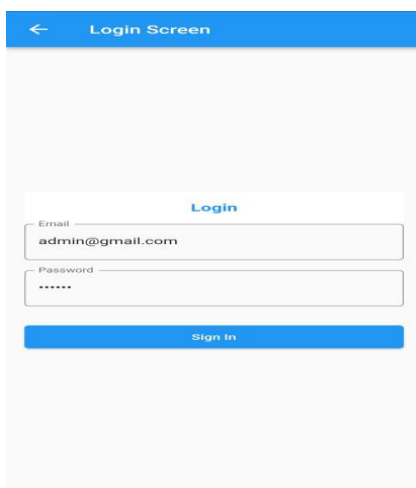


Fig. 6. Admin-login

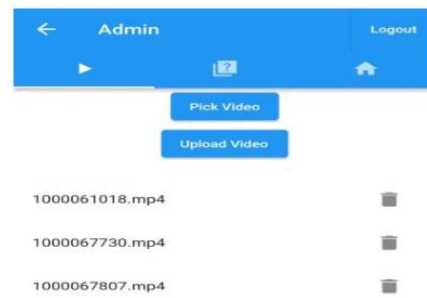


Fig. 7. Admin-dashboard

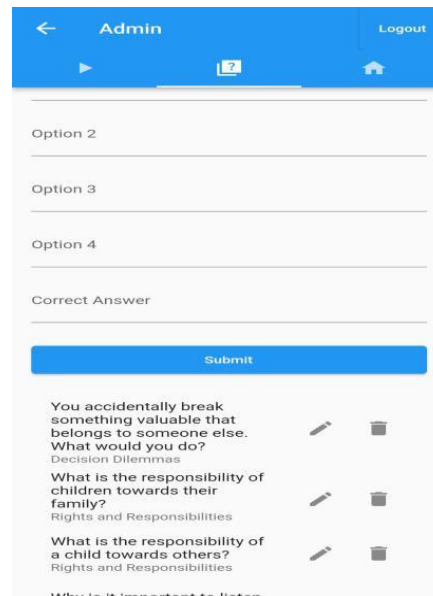


Fig. 8. Admin-dashboard

- Admin is the owner of application and has rights to post the content on the application.
- Admin can post videos for children, create quiz for children for their learning. update and delete any information present in the application.

V. CHALLENGES FACED

1. User Engagement: Keeping users engaged over time can be challenging. Users may lose interest if the content is not regularly updated or if the app lacks new features.
2. Video Streaming and Bandwidth: Delivering seamless video streaming experiences can be challenging, especially in areas with limited bandwidth.
3. Integration with Social Groups: Integrating the app with various social platforms may face technical and privacy challenges.
4. User Feedback and Iteration: Gathering and analyzing user feedback and iterating on the app based on user suggestions.

VI. CONCLUSION

This paper highlights the significant problem of legal illiteracy among children in India and its detrimental consequences on their lives. Existing awareness apps and online platforms demonstrate a critical need for a more engaging and user-friendly approach to legal education for children.

The mobile app seeks to address this need by offering an interactive and accessible platform for children aged 6-12 to learn about their rights in a fun and engaging way. By incorporating features such as quizzes, puzzles, role-playing scenarios, multimedia elements, and social features, the app promotes active learning and retention of legal knowledge. In addition, integration with child right organizations will ensure the accuracy of information and provide access to necessary resources and support services.

In conclusion, the app can play a critical role in empowering children in India to understand their rights, protect themselves from harm, and actively participate in a democratic society. Its success would contribute to a more just and equitable society where all children are aware of their rights and have the tools to defend them. Further research and development are needed to evaluate the app's effectiveness and impact on children's legal literacy. In addition, collaboration with educational institutions, government agencies, and child rights organizations will be crucial for the widespread adoption and sustainable implementation of the app.

VII. FUTURE SCOPE

This paper advocates for multilingual support and enhanced social integration as crucial for the app's future growth. Multilingualism fosters inclusivity and global reach, while social features like chat, collaboration, and shared activities can cultivate a vibrant user community. Embracing these elements can position the app as a user-centric platform, transcending language barriers and fostering a strong sense of community.

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REFERENCES

- [1] Caponetto, I., Earp, J., & Ott, M. (2014, October). Gamification and education: A literature review. In *European Conference on Games Based Learning* (Vol. 1, p. 50). Academic Conferences International Limited.
- [2] "67 %children not aware of their rights,80 % have seen violence: Study" *Hindustan Times* (2017)
<https://www.hindustantimes.com/jaipur/67-children-not-aware-of-their-rights-80-have-seen-violence-study/story-JenkD6KsCiZ32qENxDyV9J.html>
- [3] iPleaders Blog (2021). Rights of a child in India: A comprehensive guide. Retrieved from <https://blog.ipleaders.in/rights-of-a-child-in-india-a-comprehensive-guide/>
- [4] UNICEF. (n.d.). Children in India. Retrieved from <https://www.unicef.org/india/children-in-india>
- [5] Christopoulos A, Mystakidis S.(2023). Gamification in Education. *Encyclopedia*, 3,1223-1243.
<https://doi.org/10.3390/encyclopedia3040089>
- [6] S.Shrivastava,S.Shrivastava, A.J.Jesudasan,Sanjushree V.H.(August 2022)."Awareness of laws to safeguard child rights in school children," *International Journal of Creative Research Thoughts (IJCRT)*, Vol.10, Issue 8. Available: <https://ijcrt.org/papers/IJCRT2208181.pdf>
- [7] Chirag App. Retrieved from <https://play.google.com/store/apps/details?id=org.orient.msccprapp&hl=en&gl=US>
- [8] Smart India Hackathon. Retrieved from <https://www.sih.gov.in/sih2023PS>
- [9] Roy, C. (2013). Child rights & child development in India: a regional analysis. *Indian Journal of Regional Science*, 45(2).
- [10] Child Rights and You (CRY). Why Children. Retrieved from <https://www.cry.org/why-children/#education>

- [11] Humanium.(2019). Realizing Children's Rights in India. Retrieved from <https://www.humanium.org/en/india/>
- [12] Crime in India.(2021). Retrieved from <https://ncrb.gov.in/en/crime-in-india-2021>
- [13] Census Article. Retrieved from https://censusindia.gov.in/census_website/
- [14] Vikaspedia(2020). Understanding Child Rights.Retrieved from <https://vikaspedia.in/education/child-rights/understanding-child-rights>