



From Darkness To Light: Mobile Phone Apps, The Empowering Tools For Tribal Students And Community Of Chhattisgarh

Manoj Kumar Gupta¹, Vidyasagar Maurya^{2*}, Sudhir Sudam Kaware³, Haripad Kumar Mahato⁴, Pradumna Kumar⁵

¹Scholar, Dept. of Education, GGV, Bilaspur, (C.G)

²Asst. Professor, Dept. of Education, SPMC, University of Delhi

³Asst. Professor, Dept. of Education, GGV, Bilaspur (C.G)

⁴Bilaspur, (C.G) Scholar, Dept. of Education, GGV

⁵Bilaspur, (C.G) Scholar, Dept. of Education, GGV

*Corresponding Author: Vidyasagar Maurya

*Assistant Professor, Dept. of Education, SPMC, University of Delhi

Citation: Manoj Kumar Gupta et al. (2024), From Darkness To Light: Mobile Phone Apps, The Empowering Tools For Tribal Students And Community Of Chhattisgarh, Educational Administration: Theory and Practice, 30(4), 1773-1782,

Doi: 10.53555/kuey.v30i4.1412

ARTICLE INFO

ABSTRACT

India is one of the largest tribal countries in the world after Africa. According to the 2011 census of India, the tribal population is 8.6% of the total population of the country. They are all over the country in states like Jharkhand, Odisha Madhya Pradesh, Gujrat, Rajasthan, Andhra Pradesh, West Bengal, and Chhattisgarh. Tribal society is characteristically distinguished from the mainstream by its culture, lifestyle, occupation, and alienation. With the increase in the development of today's information technology and wireless telecommunication networks, mobile devices have proliferated rapidly and become important tools for Terrible people. The use of M-Services and applications (apps) on mobile devices has become commonplace in people's everyday lives. Mobile applications are the gateway to the transfer of human knowledge. Learning is a continuous process and now the focus has completely shifted to eLearning. Thanks to mobile phones and various function-oriented apps, students can learn at their own pace and take their time understanding things because everything is just a click away. The integration of mobile devices into the teaching-learning process heralded a new era in education. It has made the teaching-learning process more interactive and hands-on. Quality education can be provided to anyone, anywhere. In general, implementing mobile phone applications and technologies can provide many benefits for a quality educational environment. The provision of education for all in India remains a distant dream, despite the significant government investment expended on it. This document covers the use of mobile phone applications, how to help the Indigenous community, especially students and the community of Chhattisgarh, and what steps the Chhattisgarh government has taken to uplift the educational system and empower tribal students and community with various mobile phone apps to bring the underprivileged from darkness to light.

Keywords: Education, Mobile Phone Apps, Tribal Students and Community, Digitization.

Introduction

An application (also known as a mobile application) is a type of application designed to run on a mobile device, which can be a smartphone or tablet. Although applications are often small pieces of software with limited functionality, they still manage to provide users with quality services and experiences. Unlike apps designed for desktop computers, mobile phone apps stay away from embedded software systems. Instead,

each mobile phone app offers isolated and limited functionality (Hanna & Wigmore, 2023) For example, this can be a game, a calculator, or a mobile web browser.

Mobile phone apps promise to accelerate tribal empowerment, improve the effectiveness and efficiency of existing initiatives, provide new tools to expand knowledge and create new opportunities for students to connect and share information (NEPT, 2017). Considering mobile applications in ICT can completely change the way traditional learning works. Learning through different games can shape a child's thought process differently (Dey, 2020). You can teach a child to understand things from different perspectives and get them to think outside the box (Campbell, 2022). According to a research study, there are more mobile phones, including featured phones, smartphones, and tablets, on Earth than people. Research showed that smartphones and cell phone technology are growing five times faster than the human population. With this immense growth in mobile technology, mainly due to its easy accessibility, intelligent features, and app ecosystem, it becomes more and more important to interact with the mobile world (Rosenberg, 2019). Mobile devices greatly impact our daily lives, including our classrooms (Radu, 2021). According to a PBS poll, 56 per cent of kids ages 8 to 12 have cell phones; 58% of teens have access to a tablet; 91 per cent of teens use a mobile device to go online at least occasionally; more than 50% of parents said schools should make more use of mobile applications for teaching. In the same study, 86% of students find that technology makes them more effective and efficient at learning new tasks. 68% of parents agree that mobile devices and apps can help with learning to read and 67% believe they can help with math class. Children now learn to slide before they can tie their shoes. And iPads, iPhones, and tablets are often given away to teenagers and children. Given these facts, it's easy to see why educational apps are gaining popularity (Dividend, 2016).

Mobile phones are becoming a part of the daily culture of almost every student and teacher. They introduce new types of communication styles that remove spatial and temporal complexities (Alexander, 2004). The data connectivity and communication aspects of mobile devices support social interaction, collaboration, and the construction of learning (Low and O'Connell, 2006). Mobile phone applications can provide easy handling for children because a separate keyboard and mouse will not be required here. Studies highlight that today's children feel more comfortable using touch devices like mobiles (Oliemat et al. 2018). Children are found to spend considerable time in front of a screen (Papadakis et al. 2017). In such a context, it is crucial to arrange to adopt mobile phone applications in school education particularly for tribal students in India since in India, a massive number of children are going to schools to acquire facilities of free and compulsory education. Additionally, tribal communities have been empowered by apps that provide news updates, weather forecasts, and information on government programs, Agriculture, healthcare, and education decision-making are better with this information access. Mobile apps have a good impact on education and skill development, as platforms offer language learning, vocational training, and skill development courses. These resources aid tribal youngsters by increasing their employability and earning potential.

Educational applications cover a wide range of topics while encouraging interactive learning through quizzes and lessons, hence improving comprehension and retention. Productivity tools help you organise your tasks, manage your time, and reduce academic stress. Language learning apps let you grasp new languages, which is useful for language courses or competence exams. Collaboration tools such as Google Workspace and Microsoft Teams offer seamless group projects and resource sharing across regional boundaries. Mental health support apps offer meditation and mindfulness exercises to help students manage stress and anxiety, which are common problems in their academic path.

It is noted that children would not learn if they did not use befitting technology (Torkar et al. 2018). Smart mobile devices have become a very popular medium for primary education (Zaranis 2016) as well as university education (Ojino and Mich 2018). The students can learn by sharing knowledge through mobile phone apps with their teachers and among themselves. This, of course, requires the sincerity of the child users (Madden et al. 2013). Therefore, mobile phone applications will be an important requirement for the ICT laboratory in schools. The app is expected to improve schooling and the launch of the mobile app is expected to lead to better student outcomes in tribal schools.

Objective of Study:

The Major objectives of the study are:

- 1- To Understand the concept of mobile phone apps.
- 2- To identify the mobile phone apps assisting Tribal students and the community.
- 3- To know the benefits of mobile phone apps for Tribal students and the community.
- 4- To suggest some remedial measures in the field of implementation of mobile phone apps.

Present Scenario of Mobile Phone Apps in Chhattisgarh

Chhattisgarh, the 26th state of India, was excavated in Madhya Pradesh on November 1, 2000. Chhattisgarh lies between 17- and 23.7 degrees north latitude and 8.40- and 83.38 degrees east longitude. Chhattisgarh has a population density of 189 people per square km. The highest concentration of population in the state is in the districts of the central and north-central parts. The dispersion of the urban population also differs in its degree of concentration. Raipur and Durg account for almost half of Chhattisgarh's total urban population. Proposed tribes are concentrated in the southern, northern, and northeastern counties of the state. The

largest concentration is in the Bastar District. Chhattisgarh absorbed 25.9 per cent of the planned tribes and 9.47 per cent of the planned caste population. At 55.1 per cent, the Gonds make up the largest proportion of the tribal population. They are almost evenly distributed between urban and rural areas. They are distributed almost equally in the urban and rural areas. The Oraons, the Kawars, the Halbis, the Bharias or humans, the Bhatras and the Napesias also form a substantial portion of the tribal population. There are 9,500 villages, or 48 per cent of all inhabited villages, with more than half the population belonging to tribal groups. Thirty per cent of all inhabited cities have more than three-quarters of the population from planned tribes. Raipur, Durg, and Janjgir Champa districts have less than twenty per cent, tribal people. In addition, the state also has a large population of Kanwar, Brinjhwar, Bhaina, Bhatra, Oraon, Munda, Kamar, Halba, Baiga, Sanwra, Korwa, Bharia, Nageshia, Manghwar, Kharia, and Dhanwar tribes. Surguja and Raigarh districts. The importance of education in tribal development is recognized and emphasized in various periods of the plan. The importance of education is perceived as a catalyst not only to improve the quality of human resources but also to generate economic development and hence greater socio-cultural assimilation.

The present Scenario of Mobile apps in Chhattisgarh is in developing condition in urban areas of the state. However, in rural and tribal societies, it is in an unsatisfactory condition. The percentage of urban people are maximum literate and educated. They have the concept of mobile app technology with ICT which they are adopting smoothly. On the other hand, the rural tribal people are lagging in the field of the Mobile app concept. The literacy rate of the state is about 70.28% but the digital literacy rate is below 30%. According to the census 2011 tribal male literacy rate is 71.70 per cent and the female literacy rate is 54.4 per cent Literacy rate among the tribals remains low in comparison to all social groups, the female literacy rate is further low among the tribals in comparison to male (*Study on Cost Disability in TSP Areas of Chhattisgarh, Jharkhand and Odisha*, n.d.). The tribal students are interested but their illiterate parents are not at all interested in mobile apps. A good percentage of tribal students are very much interested in implementing the aspects of mobile apps. Those who are students of English medium schools affiliated with CBSE Board are quite successful in this endeavour but the students of Hindi medium schools affiliated to C.G Board do not possess so much interest. Till now a maximum percentage of tribal students of the state board schools do not know the use of various educational applications also he doesn't know how to search for study material in educational apps or websites etc. Recently Chhattisgarh Government has taken a good step toward the Sanchar Kranti Yojana (SKY). Under the scheme, students will be given free smartphones. The objective of the scheme is to increase digital literacy and encourage to use of digital mediums as much as possible.

Need for Mobile Phone Applications

The introduction of applications in the educational sector has helped in the development of new learning methodologies. There are enjoyable games available on mobile applications that engage pupils in a healthy mental process and assist them in understanding things from a different perspective (Sunitha & Elina, 2020). Consider communication methods such as internet browsing, voice chat, Facebook, Twitter, and so on. Every ordinary cell phone now has a Facebook application. Users can share with their friends and family from any location, such as a car or a train. People can utilize messengers to communicate with one another. We may make low-cost calls to any part of the world by using a VoIP program and the Internet (Radu, 2021). In federal, state, and local governments, citizen-oriented applications outnumber enterprise-focused apps. These apps are used to deliver new innovative public services and to engage the public in decision-making processes (Ganapati, 2015). The need for mobile phone apps in this modern time is very relevant for the country which is on the track of developing and accelerating conditions. The needs are as follows:

- To make fast and easy access of public services to citizens through mobile devices.
- To make a digital dividend between urban haves and ruler-nots.
- To Produce universal digital literacy.
- To make enjoyable teaching-learning processes.
- To make availability of digital services and resources in Indian languages.
- To reduce the problems of communication with citizens due to widespread geography, massive population and cultural diversity.
- To facilitate digital libraries to all forms of education.
- To help them achieve the goal of sustainable development.
- To produce a fast communication bridge between government bodies and Tribes.

Essential characteristics of Mobile Phone Applications

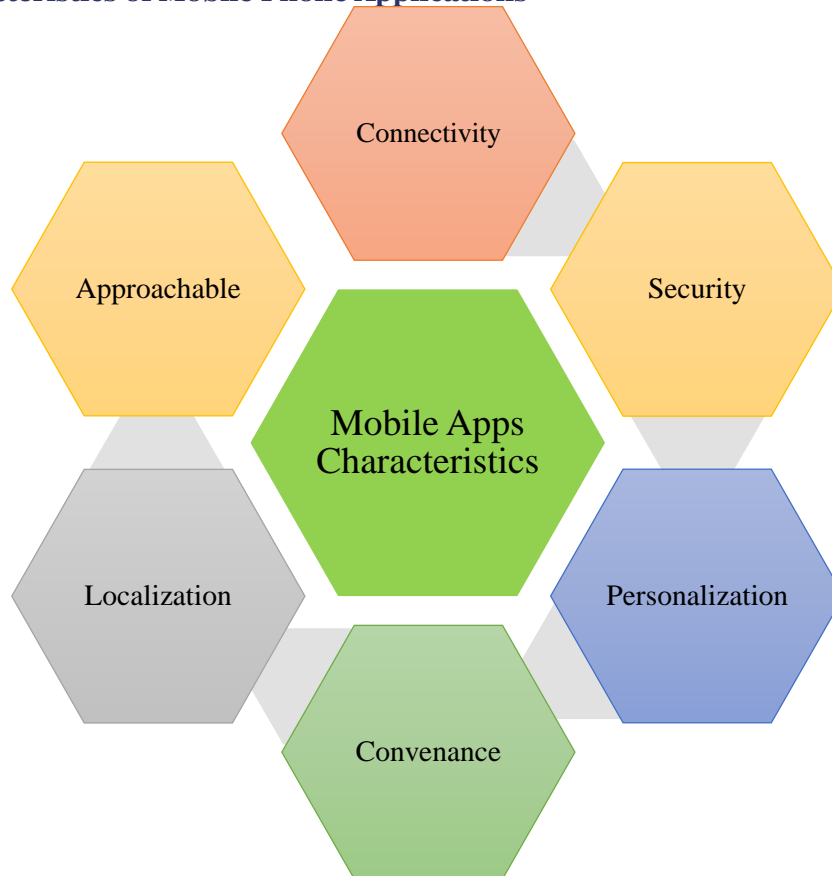


Figure No-1 Characteristics of Mobile Phone Applications

The Concept of Six Major Characteristics

The concepts of six characteristics have been discussed below (Flora et al., 2014)

- (i) **Connectivity:** The device is constantly connected to the cellular network since the applications are constantly online. In this way, certain user information and notifications are pushed into the app as soon as they are accessible. This is an important feature of mobile applications to be available everywhere. Otherwise, the service actively invoked to get a response is worthless in a mobile environment. The ability to push becomes essential for the growth of apps on any smartphone as this feature keeps the app in the minds of the users.
- (ii) **Security:** There are several security considerations such as the transmission of data over a network by an operator network. Some applications synchronize data with online web applications, so storing information on the server must be secure. Another critical vulnerability can be the mobile device itself as I don't want anyone messing with my mobile phone.
- (iii) **Personalization:** Creating customized content based on context or custom usage is another feature. Everyone wants my app to meet my needs and behave the way I want them to. This particular feature not only covers personalized content but aims to control shared and saved data for further actions.
- (iv) **Convenience:** A simple and emotional design ensures high value and acceptance among users. The general usability and structure of the information must be carefully planned to create a joyful and appropriate flow of interaction. Sure, good content is a plus, but analysing user requirements and coming up with useful ideas are also essential.
- (v) **Localization:** Finding information and being able to provide location-based information is a key feature that creates surprising and practical mobility. It works like separating the wheat from the chaff, thus integrating the application depending on the context of the user. The feature might not be perfect for all apps, but it's a good idea to associate the location with notes or photos limit the possible options, and/or classify the locations. The feature wonderfully adds a good user experience.
- (vi) **Approachable:** Accessibility includes additional features provided by the nature of mobile applications. A great app can be used anytime, anywhere, as accessibility becomes constant availability. This feature is for updated information and usefulness. Think of time-sensitive options and relevant content throughout the day.

Various Mobile Phone Application Based Programs and Services Run by Chhattisgarh Government



Figure No-2 Represent Various Mobile Apps Run by the Chhattisgarh Government

Source: <http://surl.li/luvjr>

In the above figure, no -2 indicates that various mobile phone app-based programs are run by the Chhattisgarh Government. This mobile phone App benefits Chhattisgarh's students and tribal community. The following is a description of all mobile phone apps:

- Bhuiyan App:** It is the official mobile app of the Chhattisgarh government for digitizing land records. The land map can also be viewed without a Patwari using the Bhuiya App. Because of the digitization of land records, Khasra (P-11) and Khatauni (B-1) may be easily viewed by all citizens, and copies of these documents can also be simply downloaded; the main thing is that this app eliminates the need to visit the Patwari. Khasra (P-11) and Khatauni (B-1) both have Patwari's digital signature, which is easily accepted in other offices. Bhuiyan is the land record project of Chhattisgarh This mobile app allows Citizens to view the information on land parcels (Khasra) online.
- CG Khadya-Janbhagidari App:** A multifaceted mobile-based Android app from the Department of Food, Civil Supplies and Consumer Protection, Govt. from Chhattisgarh this application is intended for all citizens of Chhattisgarh. The following services are provided by this application: Food ration card information. Store information at fair prices. Receiving products in FPS. Information on the goods is distributed to the beneficiaries. Mini Beneficiary Declaration. Right of the Beneficiary. Information for farmers. Information on MSP of rice and corn. Information on safety regulations, subsidies, etc.

Information on consumer rights, complaints procedures, etc. Information on the nearest fair price shop and Dal Bhat Centre with Google Maps.

- **Mor Bijli App:** Mor Bijli App is a Chhattisgarh company app that allows energy consumers to see the reading on time, details of their monthly power bill, pay their bill, attach their mobile number to their account, and be excluded from the electricity bill half plan. View more information. Viewing the last six months' electricity bill trend, online electricity bills, and other services are all available through a single mobile app. At the same time, it is a useful service for those whose electricity bills do not arrive at their residences and who are not present at home. This mobile app is the official mobile app of Chhattisgarh State Power Distribution Company Limited. This company is a Chhattisgarh Government company and is the largest company in the electricity distribution sector in the State of Chhattisgarh. It is a solution to all problems related to electricity in the population.
- **CG eDiary App:** The CG eDiary app was developed to provide the official government calendar on one digital platform. It includes government holidays and search capabilities for contact details of key government officials, including MPs, members of the Legislative Assembly, members of the judiciary, and county-level officials. It also has the functionality to take notes and rest digitally.
- **Diksha App:** Diksha App is an important App developed by NCERT for school students; with the Diksha mobile App, students from classes 1 to 10 can learn any subject at any time in any language; upper classes can also study in the Diksha App. In addition, each student can learn at home from his mobile device using video, PDF, and HTML. Diksha App is beneficial not only to students but also to teachers; using Diksha App, any teacher may provide online education to their students from the comfort of their own home via mobile. DIKSHA-Chhattisgarh will provide intelligent content based on the core values and guiding principles of "anytime, anywhere, learner-centric" content, aiming to promote a digital learning culture through this platform and transform Chhattisgarh into an intelligent digital city.
- **Padhai Tunhar Duvaar App:** The Chhattisgarh Government School Education Department created this platform in the interests of the students. With this, students can now continue their studies on the electronic platform through a mix of content such as LIVE lessons, offline video lectures, simulations, animations, worksheets, podcasts, etc. Chhattisgarh has been a very proactive state in implementing the technology as it offers a level playing field for all of its beneficiaries. To ensure access, equity, and quality of teaching and learning, the department has implemented several digital initiatives.
- **Godhan Naya App:** The Chhattisgarh government has launched the Godhan Nyay Yojana to protect cow herders and animals. The Chhattisgarh government is acquiring cow dung from cow herders under this scheme at a rate of Rs 2 per kg, and the government has registered the beneficiaries through Gothans. This is being done, and the Chhattisgarh government has developed the Godhan Nyay Hitgrahi App for beneficiary registration and information on other beneficiaries.
- **Dhanha App:** The Dhanha App was developed primarily for crop markets via cooperative marketing. What quantity is accessible in cooperative-restricted crop markets via the Dhanha App? Grain left, how much was lifted, the contact number of committee management that farmers can call if they have any problems, the number of officers involved, and more.
- **REVCASE App:** The Revenue Court of Chhattisgarh has created the REVCASE APP, which is available on the Google Play Store, to deliver information to the general public through revenue-related cases. REVCASE APP allows you to view the full matter from District Collector to Tehsildar, from registration to disposal. REVCASE APP provides information about applications filed in the Revenue Court, case proceedings, pending cases, hearings of parties, and dates.
- **mCHOICE:** m Choice App is a government app created by the government for public services. Using the m Choice App, a citizen can make birth certificates, death certificates, marriage certificates, caste certificates, and income certificates online while sitting at home. In addition, any concern can be reported online.
- **CM Suposhan App:** The Chhattisgarh government implemented the Chief Minister Suposhan Yojana to free malnourished children and women from ailments such as malnutrition and anaemia, and therefore a mobile app, CM Suposhan App, has been established to computerize all information. The CM Suposhan App allows for the online registration of malnourished children up to the age of six, as well as the online registration of malnourished women aged 15 to 49, and plans are made to release the mothers suffering from anaemia and provide sufficient nourishment to the malnourished children.
- **Pravasi Khadya Mitra App:** Pravasi Khadya Mitra App is mostly designed for migrant servicing. Any citizen can examine migrant information on the Pravasi Khadya Mitra app, and any migrant can include the name of his family and members as a migrant.
- **Bultu App:** The Education Department developed the Bultu App for teachers and students. The syllabus of classes is provided via the Bultu App in the form of an audio file, which may be heard on any mobile device. Bultu App runs on Android phones, but if a student does not have an Android phone, he can listen to Bultu on a button phone. You can listen to the course without an online connection or a server by sending the App's lyrics to your mobile device through Bluetooth. Teachers can also take online classes for children using the Bultu App.

- **Bhunaksha CG App:** The Bhunaksha App was created for the convenience of farmers and citizens, allowing citizens to view and download maps of their land without the assistance of a Patwari. Farmers and citizens may readily check the land record information of their land using Khasra now that the Bhunaksha App is available, and they no longer have to make rounds of Patwari for all of this information.
- **Chhattisgarh Rojgar Samachar App:** Chhattisgarh Rojgar Samachar is highly important for Chhattisgarh's unemployed youth; any unemployed youth can acquire employment information and opportunities by ordering Chhattisgarh Rojgar Samachar. A release is released in Chhattisgarh Rojgar Samachar for the recruitment of vacant posts in various departments of the government, through which the young can obtain information for recruitment to the empty posts issued by the government. Chhattisgarh Rojgar Samachar magazine is published every week on Wednesday, in which apart from the recruitment process for vacant posts, information about government policies, instructions and schemes is also given.
- **Mandi Bhav App:** The government provides markets for the purchase and selling of vegetables produced by all farmers; hence, the prices of the farmers' crops are decided through these markets, and farmers living in remote communities are not influenced by market prices. The Chhattisgarh State Marketing Board has released the Mandi Bhav App to help with this. Through the Mandi Bhav App, information on the produce or vegetables coming to the market may be accessed while sitting at home.
- **UDS CG App:** UDS CG App has been developed for the maintenance of elementary and secondary school students; all information about the students studying in UDS CG App is filled in, such as date of entrance in their class, prior class certificate, age, and name. Address, language, subject, and so on.
- **Teams T App:** The Team-T software is a vital software designed for the Education Department's teachers. The information of all teachers, such as their name, residence, education, bank passbook, income, and so on, is updated in Team - T App. According to this, the Education Department promotes, transfers, and so on of posted teachers based on their credentials and preferences, and pupils are also evaluated using the Team-T App.
- **CG Rera App:** The CG Rera App is a project of the Government of Chhattisgarh that allows for plot/land registration. To make a plot on any land, the requirements of RERA must be followed, as well as the land being registered.
- **High Court Chhattisgarh APP:** You all know that every state has a High Court, and similarly, the High Court of Chhattisgarh is in Bilaspur, where numerous issues are lodged and handled. All of this information is kept in the High Court of Chhattisgarh App. You can view the proceedings and resolution of any case by entering the token number or case number into the High Court of Chhattisgarh App.
- **Health Info App:** For citizens, the Health Department has developed the CG Health Info app. Malaria, Child Health, Bal Hridaya Yojana, Sanjeevani Yojana, Bal Shraavan Yojana, AIDS, and other health-related information are available through CG Health Info. Services for pregnant women are also available through the CG Health Info app, which requires the pregnant woman's information.
- **CG Tourism App:** The CG Tourism tool is a very important tool for foreign travellers since it provides the location of jungle safaris, tourist locations, historic sites, big palaces, dams, waterfalls, areas of natural beauty, and so on in Chhattisgarh, as well as the address and all the information about them. Information is provided on the CG Tourism App, as well as a Google map, which is particularly helpful for guests. Any guest can also make a reservation for any location in advance.
- **Narwa Garwa Ghurwa Badi App:** The goal of this app is to promote overall rural development by making effective use of the resources available in the community.
- **Narva:** Water source conservation, groundwater level improvement by the river, and drain restoration.

Garuva: Animal protection, promotion, and breeding improvement in Gauthans, as well as the production of products based on cow dung and urine.

Ghuruva: Bio compost production from agricultural and animal waste. Organic farming should be promoted.

Bari: Increased income from vegetable, fruit, and flower output in the farmer's garden, as well as nutritional improvement.

From the standpoint of the tribal community, the apps must be contextually beneficial in completing a task. Typically, government organizations are the only source for vital citizen services such as licenses, benefits, social security, and so on. When services are delivered through different channels, citizens benefit. Online transactions benefit agencies by reducing costs, increasing delivery speed, and improving accuracy.

Benefits of Mobile Phone Apps for Tribal Students and Community

The mobile phone app offers a great opportunity to leverage the latest technology to “redefine India's service industry paradigms”. A digitally connected India can help improve the social and economic status of the tribal communities by developing agriculture and non-agricultural economic activities and providing access to education, health, and financial services. There are some benefits of mobile apps which are as follows: -

Economic Impact: It can play a vital role in employment generation among a tribal community. Aside from ideology, the economic impact at the "bottom of the pyramid" has been astounding. One study found a link between mobile phone ownership and GDP, claiming that "a developing country with an average of 10 more mobile phones per 100 population between 1996 and 2003 would have enjoyed 0.59 per cent higher per capita GDP growth than an otherwise identical country." (Waverman et al., 2005). The on-the-ground foundations of this link are obvious. In a poll conducted across 14 African countries, 80% of small market firms utilised a mobile phone for business, and 95% thought that mobile phones were vital for their business operations (UNCTAD, 2023).

Social impact: Improving mobile phone adaptability Apps have created a social barrier between parents and children in the Gaddi tribes. It has been identified as a crucial element in the shortening of their social relationships. Mobile Apps have improved economic and communication capabilities while also hardening interpersonal relationships (Sharma, 2022). In Addition, Social sectors such as education, health, and banking cannot reach Terrible citizens due to obstacles and limitations such as illiteracy of intermediaries, poverty, lack of money, and investment. Modern ICT like mobile apps makes it easier for people to access services and resources. Mobile app penetration can be very useful as a complementary channel for delivering public services in addition to creating entirely new services.

Environmental impact: Mobile apps have emerged as major enablers of manufacturing sustainability, revolutionizing many parts of the business. Using mobile apps allows firms to generate positive change, minimize their environmental footprint, and promote environmentally friendly practices throughout their operations (Grodén-Morrison, 2023). Major changes in technology have not only brought about changes in the economic system but also contributed to environmental changes. Next-generation technologies help reduce carbon footprint by reducing fuel consumption, waste disposal, greener stewardship and greener workplaces, leading to a greener ecosystem. A smartphone app, for example, can substitute for a paper invoice, a restaurant menu, or a whole book. Paper tickets can also be effectively replaced by QR scanning. This helps to preserve forests and natural ecosystems while also reducing the amount of energy needed to harvest and process paper. Additionally, if an app is used for a specific purpose, it can assist in streamlining procedures and reduce paper waste even further. (Rai, 2023).

Challenges Related to Mobile Phone Apps Used by Tribal Students and the Community of Chhattisgarh

In our state of Chhattisgarh, we face many challenges regarding mobile application implementation, especially in tribal society. These are:

- Illiteracy among indigenous students.
- Negative thinking due to the complexity of mobile apps.
- Missing concepts for the use of mobile apps.
- Impossibilities of internet service in remote areas.
- Very little knowledge about the English language.
- Lack of English medium schools in rural and tribal areas.
- Lack of awareness of Government schemes in rural areas & remote areas.
- Lack of tribal language mobile apps.
- Lack of computer literacy.
- Human inertia with previous habits and livelihoods.

Possible Measures to Improve the Conditions for Using Mobile Phone Applications by Tribal Student and Community:

To improve the current condition regarding the implementation of mobile applications, some steps need to be taken in government policy as well as on the side of common citizens, which can be:

- To make tribal people educated instead of making them literate.
- To encourage NGOs to establish a greater number of English medium schools.
- To Spread the concept of mobile apps among tribal students through computer education in schools.
- To set up a greater number of government English medium schools in tribal areas.
- Providing smartphones free of cost among tribal families.
- To cover all tribal areas with mobile towers.
- To Spread the optical fibre network in ruler areas.
- To organise mobile app-based programmes in schools.
- To arrange hands-on training about the use of smartphones among tribal students and adults.
- To arrange frequent awareness programmes in Tribal remote areas for adults.
- Employ a mobile app-savvy team in the tribal area to provide ongoing support to the community with mobile apps related to government programs.
- To develop mobile apps in the tribal language.

Conclusion

Mobile technologies (mobile phone apps) play a crucial role in the creation, preservation, and dissemination of Indigenous knowledge and data storage in libraries. Mobile phone applications open a new window of knowledge for tribal students. Benefits of apps such as cultural awareness, portability, and information accessibility for a tribal learner. Rapid obsolescence, dialect differences, and practical limitations of mobile devices were explored as potential challenges for apps as a learning tool. By delivering internet services, mobile phone apps are bridging the divide between the underprivileged and the general population (Das & Debbarma, 2021). The Chhattisgarh Government has taken many steps to strengthen the tribal students and community. Many applications have been launched to provide government services and create equality in tribal societies. Padahi Tuhar Duar Apps has brought great success during the pandemic. Many tribal students learn through this app. The mobile phone apps thus give identity to the tribal students and community worldwide. By using mobile phone applications, they can embellish a community of bows and arrows. They can reach to newer heights and make India shine bright and reach to the highest position in the whole world.

References

1. A Study on the Permeation and Scope of ICT Intervention at the Indian Rural Primary School Level: (2014). *Proceedings of the 6th International Conference on Computer Supported Education*, 363–370. <https://doi.org/10.5220/0004763303630370>
2. Bahia, K., Castells, P., & Pedrós, X. (n.d.). *The impact of mobile technology on economic growth: Global insights from 2000-2017 developments*.
3. Cassels, M., & Farr, C. (2019). *Mobile applications for Indigenous language learning: Literature review and app survey*. 24.
4. Das, M., & Guha, D. (2019). *Impact of technological development on the tribal people: a case study of a selected tribal village in Jhargram district in west Bengal*. 4(5), 10.
5. Das, P. K., Panigrahi, J. K., Naik, I. C., & Das, B. (2019). *Impact Of ICT On Career Aspiration of Students Belonging to Indigenous Communities and Most Backward Sections of India: An Empirical Study of Tribal Development Board Schools of Odisha*. 8(12), 8.
6. Debnath, N. G., & Biswas, D. P. (2021). *Impact of Digitization on Tribal Society with Special Reference to Tripura*. 6.
7. Dey, E. (2020, November 12). How mobile apps can facilitate ICT in school education. *IDream Education Blog*. <https://www.idreameducation.org/blog/how-mobile-apps-can-facilitate-ict-in-school-education/>
8. Dubey, B., & Bhatnagar, A. S. (2017) *Impact of information, communication and social business technology on micro, small and medium-sized entrepreneurship in Chhattisgarh: a short review*. 3.
9. Dubey, D. B., & Bhatnagar, A. S. (2018). *Role of Chhattisgarhi Language in Promoting Digital Literacy: An Overview*. 8, 4.
10. *Government Mobile Apps Chhattisgarh All Department—Morsarkar*. in. (n.d.). Retrieved October 2, 2023, from <https://www.morsarkar.in/2021/04/government-mobile-apps-chhattisgarh-all.html>
11. Groden-Morrison, A. (2023, August 1). *The role of mobile apps in sustainable, eco-friendly manufacturing*. Smart Industry. <https://www.smartindustry.com/benefits-of-transformation/sustainability/article/33009068/the-role-of-mobile-apps-in-sustainable-ecofriendly-manufacturing>
12. Kumar, V., & Bansal, A. (2013). *Information & Communication Technology for Improving Livelihoods of Tribal Community in India*. 3(5), 9.
13. Nayak, S. R., Kant, N., & Anjali, K. (2020). The strategy of using ICT in ODL to disseminate higher education in tribal communities: A case of MP, India. *Asian Association of Open Universities Journal*, 15(2), 189–206. <https://doi.org/10.1108/AAOUJ-05-2020-0029>
14. Nishitha, S. K. S. (2019). ICT Enabled Teaching in Tribal Classical Domestic School. *Novem Ber*, 22(10), 6.
15. Radu. (2021, June 15). *The Impact of Mobile Technology In Our Lives*. <https://blog.mobiversal.com/the-impact-of-mobile-technology-in-our-daily-life.html>
16. Rai, T. (2023, May 4). *Going Green: How Mobile Applications are Helping the Environment | CustomerThink*. <https://customerthink.com/going-green-how-mobile-applications-are-helping-the-environment/>
17. Sammons, J., & Cross, M. (2017). What is cyber safety? In *The Basics of Cyber Safety* (pp. 1–27). Elsevier. <https://doi.org/10.1016/B978-0-12-416650-9.00001-2>
18. Sharma, G. (2022, March 14). *Impact of Mobile App Development on Our Society—Pontikis. net*. <https://www.pontikis.net/blog/impact-of-mobile-app-development>
19. *Study on Cost Disability in TSP Areas of Chhattisgarh, Jharkhand and Odisha*. (n.d.). 107.
20. Sunitha, R., & Elina, S. (2020). *A Study on Mobile Applications in Education*. 11(1).

21. UNCTAD. (2023, September 28). *Digitally deliverable services boom risks leaving least developed countries behind* | UNCTAD. <https://unctad.org/news/digitally-deliverable-services-boom-risks-leaving-least-developed-countries-behind>
22. UNICEF. (2017). Inclusive Education—Understanding Article 24 of the Convention on the Rights of Persons with Disabilities. *Inclusive Education*.
23. Waverman, L., Meschi, M., & Fuss, M. (2005). The Impact of Telecoms on Economic Growth in Developing Countries. *The Vodafone Policy Paper Series*, 3.
24. Zaheer, A. (2019). awareness of ICT knowledge among tribal students of central universities in Hyderabad. *Journal of Information and Computational Science*, 9(12), 8.