



SanChi: Empowerment Through Education (Vidyalankar Volunteering Committee)

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ABSTRACT

SanChi is a web-based volunteering-driven platform developed under the Vidyalankar Volunteering Committee, sponsored by RedBox Agency. Designed to bridge educational and social awareness gaps, it provides free access to structured learning resources and engagement tools across multiple domains, including Girls' Education, Primary Education, Health Awareness, Digital Literacy, and Environmental Conservation.

The platform offers audiobooks, video resources, scratch notes, and notes uploads, ensuring continuous learning, even in low-connectivity areas. With multilingual content, SanChi caters to a diverse student base, fostering inclusivity and accessibility.

Built using HTML, CSS, JavaScript, Express.js, and PostgreSQL, SanChi ensures a responsive, scalable, and user-friendly experience. Through volunteer-driven initiatives and digital accessibility, the project empowers students, enhances academic engagement, and promotes lifelong learning opportunities for underserved communities.

1. Introduction

Education and community development play a crucial role in shaping a progressive society. SanChi is a dedicated platform under the Vidyalankar Volunteering Committee, designed to provide educational resources, awareness programs, and volunteer-driven initiatives across multiple social domains. The project focuses on Girls' Education, Primary Education, Unprivileged Students Welfare, Physical Health & Wellness, Mental Health Awareness, Environmental Initiatives, Digital Literacy, and Anti-Narcotics Awareness.

With the support of Vidyalankar Polytechnic, RedBox Agency, and DadsInTown, SanChi aims to empower individuals, promote inclusivity, and drive social awareness through digital learning and community engagement. The platform offers audiobooks, video resources, scratch notes, and notes uploads, ensuring accessible and structured learning across all domains.

By integrating technology with social impact, SanChi provides a centralized hub for information, learning materials, and volunteer participation, fostering a well-informed and socially responsible community. Through its collaborative efforts, SanChi strives to create a sustainable model for education, health, digital literacy, and environmental awareness, making a meaningful difference in society.^{[9][10]}

2. Review of Literature

Girls' Education: Evaluation of NanhiKali.org^[1]

NanhiKali.org is the digital platform of the Nanhi Kali initiative, a non-profit organization dedicated to providing primary education to underprivileged girls in India. The table below evaluates the website across various parameters:

Parameter	Pros	Cons
Impact Presentation	Showcases stories of beneficiaries, projects, and the tangible impact of the initiative, building a strong emotional connection with visitors.	Impact stories are compelling but limited; additional detailed case studies or statistical data could further strengthen their credibility.

Donation Mechanism	Provides a user-friendly and secure donation process with multiple payment options, encouraging contributions.	Limited options for recurring donors or corporate sponsorships; expanding these features could enhance long-term support.
Educational Resources	Includes information on how funds are utilized for education, scholarships, and skill-building activities for girls, aligning with its mission.	Could add downloadable resources or toolkits for educators, parents, or volunteers to increase engagement.
Website Responsiveness	Mobile-friendly design ensures easy access across devices, enhancing usability for diverse audiences.	Some sections load slowly, and optimizing performance could improve user experience further.

Primary Education - Evaluation of Pratham.org^[2]

Pratham is a non-profit organization working toward improving foundational literacy among children in underserved communities. The platform focuses on early learning programs and teacher training to enhance the quality of primary education. The table below evaluates the website across various parameters:

Parameter	Pros	Cons
Foundational Learning	Provides structured literacy programs for young children, improving early education outcomes.	Lacks interactive digital learning tools like videos or audiobooks.
Teacher Training	Conducts professional development workshops for educators, ensuring improved teaching methods.	No dedicated resources for parents or community-driven engagement.
Accessibility	Works with schools in rural areas to ensure widespread reach.	No dedicated digital platform for self-learning and offline content access.

Unprivileged Students Welfare - Evaluation of SaveTheChildren.in^[3]

Save The Children is an international organization focused on education, healthcare, and protection for underprivileged children. The platform emphasizes child rights advocacy and emergency relief programs.

Parameter	Pros	Cons
Educational Equity	Works toward ensuring access to education for marginalized children.	Lacks a structured digital resource library for independent learning.
Community Involvement	Engages in advocacy, fundraising, and policy-making for child welfare.	No interactive volunteer engagement platform to connect students with mentors.
Welfare Programs	Provides healthcare, nutrition, and disaster relief for underprivileged children.	Lacks a digital space for personalized educational content and engagement.

Physical Health & Wellness - Evaluation of NHM.gov.in (National Health Mission)^[4]

The National Health Mission (NHM) is a government initiative aimed at improving healthcare access across India. It conducts health checkup camps, vaccination drives, and public awareness programs.

Parameter	Pros	Cons
Healthcare Access	Offers free health checkups and medical support to underserved communities.	Lacks a digital learning platform for preventive healthcare awareness.
Public Awareness	Conducts large-scale health campaigns on nutrition, sanitation, and hygiene.	No dedicated volunteer-driven health education programs.
Resources	Provides government healthcare schemes and services to citizens.	Lacks structured self-learning materials, such as videos or interactive resources.

Mental Health Awareness - Evaluation of VandrevalaFoundation.com^[5]

The Vandrevala Foundation offers mental health helplines, counseling services, and awareness programs to address psychological well-being in India.

Parameter	Pros	Cons
Counseling Services	Provides 24/7 helpline support for individuals experiencing mental health crises.	Lacks structured educational resources for long-term mental health awareness.
Mental Health Awareness	Promotes well-being through online content and expert-led programs.	No community engagement platform for peer support or mentorship.
Accessibility	Ensures accessibility through multilingual helplines and remote counseling.	No digital repository of structured learning content for self-paced education.

Environmental Initiatives - Evaluation of EarthDay.org^[6]

Earth Day Network promotes global environmental awareness, sustainability campaigns, and conservation efforts to protect the planet.

Parameter	Pros	Cons
Global Reach	Engages millions worldwide in environmental conservation and activism.	Lacks region-specific volunteer programs for grassroots environmental initiatives.
Educational Campaigns	Conducts awareness programs on climate change, plastic pollution, and sustainability.	No structured curriculum for school-based environmental education.
Sustainability Initiatives	Encourages tree plantation, waste reduction, and carbon footprint awareness.	No direct integration with digital learning tools for environmental education.

Digital Literacy - Evaluation of DigitalIndia.gov.in^[7]

The Digital India initiative is a government program promoting digital transformation and technology adoption across India.

Parameter	Pros	Cons
Digital Access	Encourages digital inclusion through e-governance and connectivity programs.	Lacks grassroots digital literacy training for underserved communities.
E-Governance	Implements technology-driven solutions in government services.	No focus on community-based training for hands-on learning.
Awareness Campaigns	Educates citizens on cybersecurity, online transactions, and digital infrastructure.	Lacks structured learning resources and volunteer-driven digital education programs.

Anti-Narcotics Awareness - Evaluation of NarcoticsIndia.nic.in^[8]

The Narcotics Control Bureau (NCB) works toward **drug prevention, enforcement, and public awareness** on substance abuse.

Parameter	Pros	Cons
Drug Prevention Programs	Conducts national awareness campaigns on substance abuse.	Lacks structured educational resources tailored for schools and colleges.
Public Awareness	Focuses on law enforcement and reducing illegal drug distribution.	No interactive tools for youth engagement in drug awareness programs.
Rehabilitation Services	Supports de-addiction centers and recovery programs.	Lacks digital learning tools to educate students on the dangers of substance abuse.

3. Methodology:

The methodology adopted for developing *SanChi: Educational Reference Website* follows the Scrum Agile Process, ensuring flexibility, adaptability, and continuous improvements based on real-time user feedback. The approach allows for iterative refinements while maintaining a structured workflow, ensuring accessibility, scalability, and effectiveness across all eight domains of the Vidyalankar Volunteering Committee. ^{[9][10]}

Below are the key methodologies employed:

SCRUM AGILE PROCESS

Scrum follows an iterative and incremental approach, emphasizing collaboration and continuous development. The project was divided into multiple sprints, each delivering a potentially shippable product increment. The core elements of Scrum, including Sprint Planning, Daily Standups, Sprint Reviews, and Retrospectives, ensured alignment with user needs and technical requirements.

Steps Involved in Development:

1. Product Backlog Creation (Information Gathering & Analysis)

- Conducted **interviews** and **questionnaires** with educators, students, and stakeholders to gather insights.
- Performed a **feasibility study** to assess technical requirements and ensure multi-device compatibility.
- Analyzed existing educational platforms to identify gaps and challenges, such as **limited connectivity and language barriers**.
- Adopted **Object-Oriented Analysis** to organize system requirements efficiently.

2. Sprint Planning (Design & Development Preparation)

- Defined sprint goals and prioritized features.
- Created **interface designs** focused on **multilingual support, intuitive navigation, and accessibility**.

- Developed **flowcharts, prototypes, and module designs**, including:
 - Study Resources
 - User Authentication and Profiles

3. Sprint Execution (Coding & Development)

- Developed the platform using:
 - **Frontend:** HTML, CSS, JavaScript
 - **Backend:** Node.js, Express.js
 - **Database:** PostgreSQL
- Key focus areas:
 - Implementing **Audiobooks, AI Chatbot, Offline Access, and Multilingual Support**.
 - Ensuring modular development for **scalability and debugging**.
- Daily standups were conducted to track progress and resolve blockers.

4. Sprint Review & Testing

- Conducted multiple testing phases, including:
 - **Unit Testing:** Verified individual modules.
 - **Integration Testing:** Ensured smooth interaction between frontend, backend, and database.
 - **Usability Testing:** Gathered feedback from students and educators.
 - **Performance Testing:** Ensured the platform could handle concurrent users.
- Stakeholder reviews were held to incorporate necessary refinements.

5. Sprint Retrospective & Maintenance

- Regular retrospective meetings were conducted to improve development efficiency.
- Continuous deployment practices ensured smooth feature releases.
- Future enhancements focus on **AI-based learning, personalized recommendations, and scalability**.

This **Scrum Agile Process** ensures that *SanChi* remains a dynamic, user-centric, and sustainable **Educational Resource Hub** for students in rural areas.

4. Objective:

- To provide free and structured educational resources across multiple domains, ensuring inclusivity and accessibility.
- To promote multilingual learning by offering study materials in regional languages, bridging the language barrier in education.
- To facilitate community engagement and volunteer participation through structured awareness campaigns and learning initiatives.
- To offer domain-specific educational materials in areas such as Girls' Education, Health Awareness, Digital Literacy, and Environmental Conservation.
- To integrate modern web technologies (Express.js, PostgreSQL, Vercel) for a seamless, secure, and responsive platform experience.
- To encourage self-paced learning through audiobooks, videos, scratch notes, and downloadable study materials.
- To maintain data privacy and security while providing user authentication and role-based access for students, educators, and administrators.
- To ensure continuous development and updates based on user feedback and evolving educational needs.

5. Advantages:

- Centralized educational platform integrating diverse learning resources across multiple social domains.
- Multilingual support ensuring accessibility for students from different linguistic backgrounds.

- Offline access allowing rural students to continue learning without internet dependency.
- Inclusive design catering to diverse learners, including differently-abled individuals.
- Interactive learning tools enhancing engagement through audiobooks, videos, and scratch notes.
- Community-driven approach connecting students, teachers, and volunteers for collaborative learning.
- Empowering education for girls and fostering gender equality in academic and career opportunities.
- Cost and time efficiency by providing comprehensive, free, and structured educational resources.
- Secure and reliable platform with robust data protection and user authentication measures.
- Scalable architecture supporting future enhancements like AI-driven learning and personalized education paths.
- Encouraging lifelong learning by integrating diverse tools for self-paced education and skill-building.

6. Results:

SanChi successfully bridges educational disparities by providing a centralized and inclusive platform designed for underserved communities. Through multilingual content, offline accessibility, and interactive learning tools, the platform ensures equal learning opportunities for all students, regardless of location or background.

With its user-friendly design and accessibility features, SanChi creates a collaborative learning space, connecting students, teachers, and volunteers. This fosters community-driven education, enabling knowledge sharing, mentorship, and academic support.

By integrating modern web technologies, SanChi empowers rural students, enhances digital literacy, and promotes social awareness across various domains. Through continuous innovation and refinement, the platform is shaping a sustainable and equitable future for education and community development.

Outputs:



Fig.1 Home Page



Fig.2 Home Page (Marathi)



Fig.3 Home Page (Hindi)



Fig.4 About Page



Fig.5 About Page (Marathi)



Fig.6 About Page (Hindi)



Fig.7 Home Page: Domain's



Fig.8 Scratch Notes



Fig.9 Audio Book

References

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