Bhaskar joshi, Head Teacher GPS Mateeladhura Tarikhet Almora

Using Technology for Social Good in the Classroom (A classroom experience)

Introduction: As an elementary teacher dedicated to enhancing education, I believe in the power of technology to bring about social good, especially in classrooms where resources may be limited. In my efforts to make learning accessible and engaging, I have integrated various technology tools into my teaching practices.

I use the *Moodle learning platform* to create an interactive learning environment for my students, providing them with a structured approach to online education. For more personalized learning experiences, I developed two mobile applications—*Bajela Online Education* and *English Guru*, which offer free resources like NCERT materials, worksheets, quizzes, and assignments to support students' learning, especially in remote areas. These applications have been particularly helpful in minimizing the digital divide and ensuring that students stay connected to their lessons during times like the COVID-19 pandemic.

Along with these apps, I also use *energized workbooks* to make learning more engaging. To take learning beyond traditional methods, I incorporate *virtual reality 360* experiences with VR headsets, bringing subjects to life in an immersive way. My *educational blog* (*www.educationforall.in*) is another platform where students can ask questions through an integrated *chatbot*, helping them access immediate assistance for their learning queries.

In addition, I maintain a *Google site* for sharing the latest knowledge, and I have created NCERT chapter videos on *YouTube* to reinforce lessons. QR codes are used in the classroom for quick access to resources, while *gamified quizzes* keep the students motivated and excited about learning. I also created

a school magazine, *Dug Dugi*, where we showcase students' creative work and share it with the community.

For classroom teaching, I frequently use *Microsoft PowerPoint presentations* and projectors to present lessons in a visually engaging way. To ensure that all students, regardless of their access to technology, can participate, I incorporate tools like *Plickers* to conduct evaluations without the need for smartphones or computers.

By integrating these diverse tools into my teaching practices, I aim to provide a more inclusive and interactive learning environment, demonstrating how technology can be used for social good in the classroom, even in rural and resource-limited areas.

Problem Description :

In many parts of the world, including rural areas like my own, education systems face significant challenges, such as limited resources, outdated teaching methods, and a lack of access to technology. This creates a *digital divide*, leaving students in these areas at a disadvantage compared to those in more urban settings. As an elementary teacher, my goal has been to bridge this gap and ensure that all students, regardless of their geographical location

or access to resources, have the opportunity to engage in meaningful and interactive learning.

Despite the vast potential of technology to transform education, many schools, especially those in remote regions, struggle to integrate it effectively into the classroom. The scarcity of computers, tablets, or even reliable internet connectivity often restricts students from accessing the digital tools and resources that can enhance their learning experience. Furthermore, the traditional methods of teaching are often insufficient to engage students in an increasingly technology-driven world.

The challenge becomes even more pressing when we consider the barriers that prevent many teachers from effectively using technology in their classrooms. Many educators lack the necessary training, resources, or support to integrate technology into their teaching. In rural areas like mine, where digital literacy is still emerging, teachers may feel ill-equipped to navigate and utilize digital tools effectively, making it difficult for them to create interactive and innovative learning environments.

With the advent of the COVID-19 pandemic, the problem was further exacerbated, as schools closed, leaving students with limited options for continued learning. The transition to online learning was a struggle for many students, especially those without access to devices or the internet. For teachers like myself, it became clear that there was a need for easy-to-use, low-cost technological solutions that could connect students and teachers even during times of crisis.

To address these challenges, I have sought to create accessible technological solutions that empower both teachers and students in rural and underserved areas. Using platforms like *Moodle*, *Bajela Online Education*, and *English Guru* apps, I have worked to ensure that all students, even those with limited resources, can benefit from modern, engaging, and interactive learning methods. Additionally, I have integrated tools like *virtual reality 360*, *QR*

codes, and *gamified quizzes* to make learning more dynamic and to help bridge the *digital divide*.

The core issue at hand is the need to make technology accessible and usable for both students and teachers, particularly in rural settings, so that learning becomes more engaging, interactive, and inclusive. By leveraging technology, I aim to address these problems and provide students with the tools and opportunities they need to succeed, ensuring that education can truly be a universal right, regardless of one's location or resources.

Detailed Description: Using Technology for Social Good in the Classroom

As an elementary teacher deeply invested in the growth and education of my students, I have always sought innovative ways to enhance the learning experience. In the remote village of Bajela, Uttarakhand, where access to educational resources is often limited, I have worked tirelessly to bridge the gap between traditional learning methods and the modern digital world, ensuring that all children, regardless of their location, have access to quality education.

1. Teaching with Technology:

The journey began by incorporating technology directly into my classroom. Understanding the importance of interactive learning, I invested my own resources to purchase projectors and televisions, transforming our classrooms into "smart classes." I also utilized the tablets provided by the government and established computer systems in the school to ensure that students could experience digital learning firsthand.

2. Innovative Android Apps:

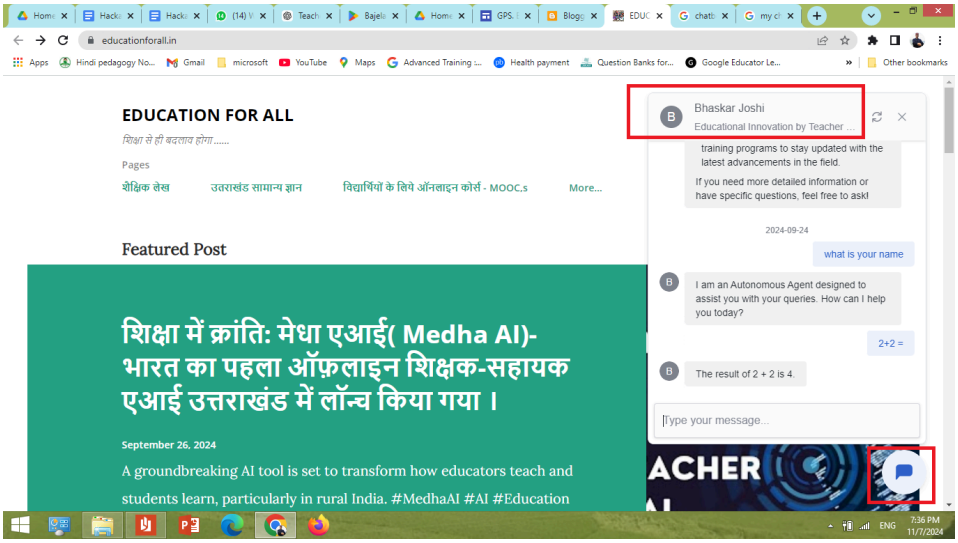
Recognizing the lack of connectivity in remote areas, I took the initiative to develop two Android applications: *Bajela Online Education* and *English Guru*. These applications provide access to educational resources, including video lessons, worksheets, assignments, and more, ensuring that students in even the most secluded areas can continue learning. These apps serve as a bridge, connecting students with a world of digital knowledge.

3. Creating LMS bjguru.com:

Not stopping at just apps, I built a Learning Management System (LMS) called *bjguru.com* to serve as an online platform for students, parents, and fellow educators. This LMS provides a space for online learning, skill development, and the sharing of educational resources, making learning more accessible for everyone, regardless of their geographical location.

4. Educational Blog with chatbot

To reach out to the wider community and help students in Bajela village access educational opportunities, I launched my educational blog, www.educationforall.in. The blog serves as a hub for job opportunities, educational resources, and community-driven initiatives. Additionally, the blog is connected to a chatbot, enabling students to ask their queries and get instant responses, fostering a sense of connection even outside the classroom.

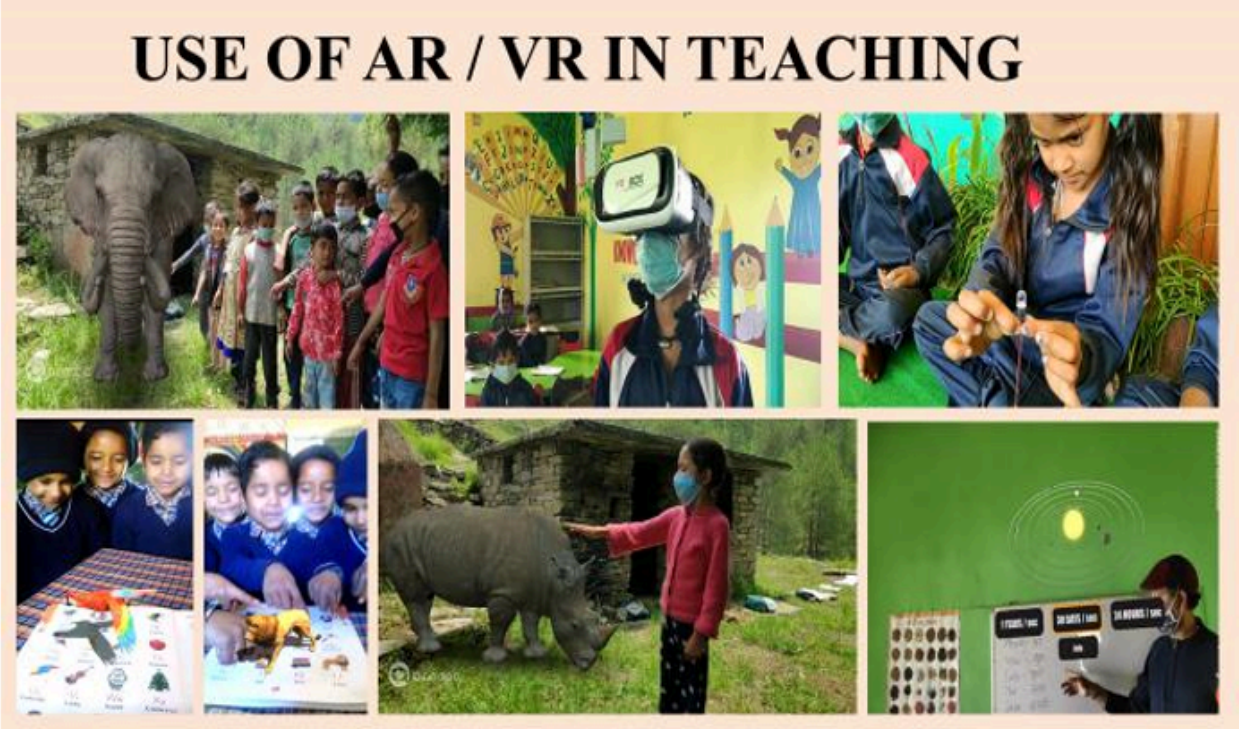


5. QR Code-Stickered Flora Exploration:

In order to cultivate curiosity and environmental awareness, I introduced a QR code-based learning system on the school grounds. These codes, placed on trees and plants, allow students to scan and learn more about the flora in their surroundings. This initiative turned the school campus into a living, breathing classroom where students can explore and discover nature, connecting their academic knowledge with real-world observations.

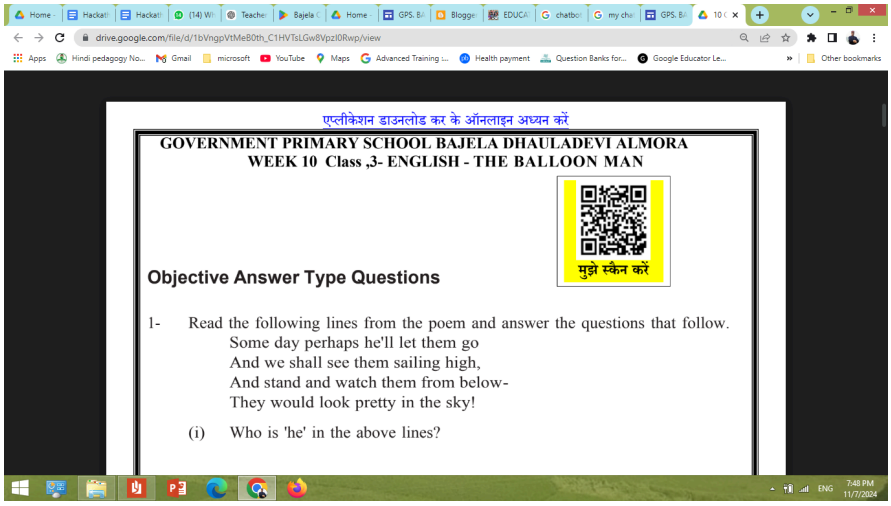
6. Revolutionizing Learning with AR/VR Technology:

To take learning to the next level, I integrated Augmented Reality (AR) and Virtual Reality (VR) technologies into my teaching. By using VR headsets and AR applications, students could explore virtual worlds and concepts, from historical landmarks to the human anatomy, bringing abstract lessons to life in a way that traditional methods simply couldn’t.



7. Energized Worksheets for Active Learning:

I also developed *energized worksheets*, designed to go beyond traditional worksheets by incorporating multimedia elements such as videos, animations, and interactive quizzes. These worksheets not only reinforce classroom lessons but also encourage critical thinking and active engagement, making learning both fun and effective.

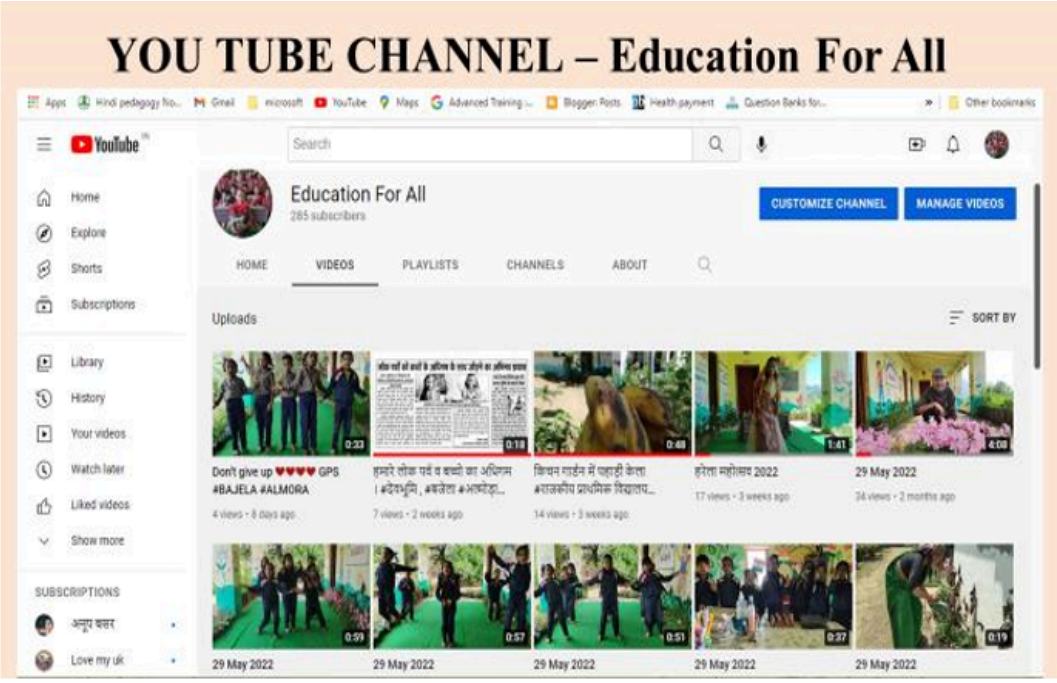


8. Padta Chal Badha Chal - Online Digital Library:

A key part of my educational mission has been to promote reading. To support this, I created an online library named *Padta Chal Badhta Chal*, which is integrated with the *Bajela Online Education* app. This library offers students access to a wide range of educational PDFs and e-books, encouraging them to explore new topics and broaden their knowledge, anytime and anywhere.

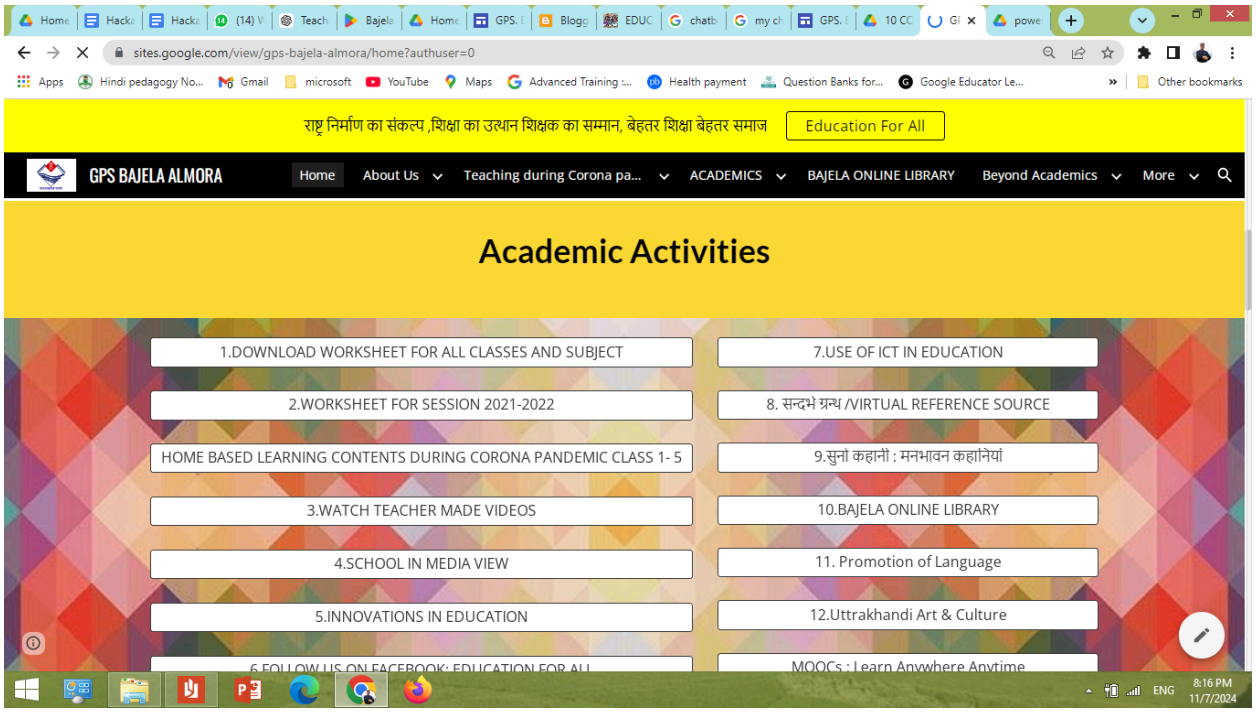
9. “EducationForAll” YouTube Channel:

To expand my reach and provide high-quality educational content, I launched the *Education For All* YouTube channel. This platform hosts educational videos on a variety of subjects, as well as showcases the achievements and activities of our school. It serves as a resource for students, parents, and the community to access quality learning material.



10. Google Site for School Showcasing and Educational Content:

To provide transparency and share our school's work with the broader community, I developed a Google Site dedicated to showcasing our achievements. This site also serves as a resource hub, regularly updated with educational materials, study guides, articles, and other useful content to support both students and parents.



11. Teaching with PowerPoint Presentations:

Understanding the importance of visual learning, I have incorporated *Microsoft PowerPoint presentations* into my classroom teaching. These presentations help to explain complex topics more clearly, making learning more engaging and interactive for students.

Click Here for PPTs

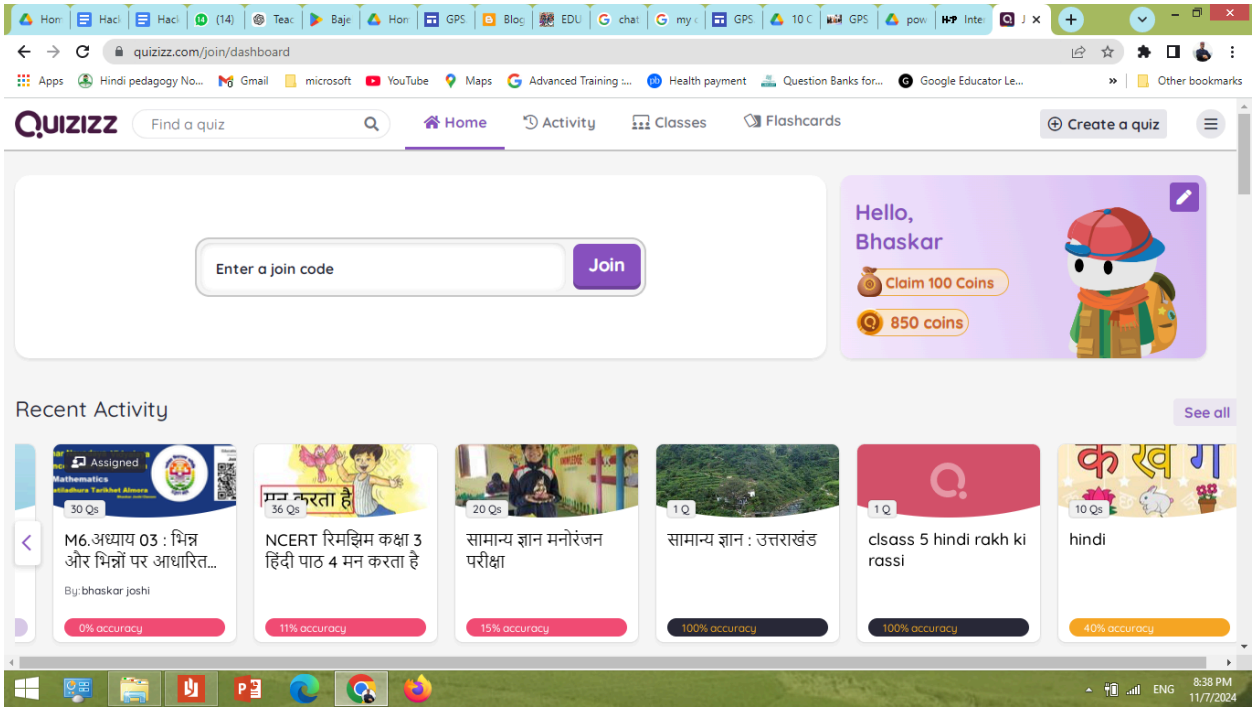
12. Inspiring Creativity with "Dug Dugi" Digital Magazine:

To encourage creativity and pride in their work, I launched a digital school magazine called *Dug Dugi*. This magazine provides a platform for students to showcase their artistic talents, creative writing, and innovative projects. By celebrating their achievements, *Dug Dugi* inspires students to continue expressing themselves and excelling in their endeavors.

Through these efforts, I have been able to create a dynamic and inclusive learning environment that leverages the power of technology to benefit both students and the wider community. This project not only aims to bridge the digital divide but also ensures that no child is left behind, empowering them to learn, grow, and succeed in today's digital world. My journey continues, and I am excited to see the future unfold as I strive to provide quality education for all.

13.Gamified Education: Leveraging the power of gamification, I use tools like *Kahoot*, *Quizziz*, *Quizlet*, and *Lumni Education* to make quizzes and assessments exciting. These interactive platforms foster friendly competition

and encourage participation, making learning feel more like a game than a chore.



14.Plickers for Evaluation: To bridge the digital divide, I utilize *Plickers*, an evaluation tool that allows me to assess students' understanding without needing individual devices. Plickers lets students answer questions by holding up response cards, providing real-time feedback and assessment without requiring high-tech equipment, which is ideal in low-tech environments.

Impact and Utility in Hilly Areas like Uttarakhand

The impact of "Using Technology for Social Good in the Classroom" is especially significant in hilly areas like Uttarakhand, where geographical isolation often limits access to educational resources. By integrating digital tools and self-made applications, I've been able to provide students with a continuous, quality learning experience even in a remote setting. The online platforms and mobile applications allow students from isolated villages to learn at their own pace, access high-quality content, and develop digital skills that prepare them for future opportunities.

By using *Bajela Online Education*, *English Guru*, and *Padta Chal Badhta Chal*, students can connect with learning resources without needing to travel long distances. The implementation of tools like *QR Code Flora Exploration* brings the beauty of their natural surroundings into an educational context, while the addition of *AR/VR* experiences allows students to transcend physical limitations, gaining exposure to subjects and places they may never have a chance to explore otherwise. In a region where mobile networks may be the only reliable technology, these mobile-accessible resources and the offline availability of certain tools make an enormous difference in expanding students' horizons.

Moreover, gamified quizzes and *Plickers* for assessment enable meaningful engagement without the need for one-to-one digital devices, which can be scarce. The school’s educational blog, YouTube channel, and digital magazine also bridge gaps, helping students stay connected with broader educational trends and showcasing their work to a larger audience, thus fostering pride in their achievements.

Conclusion

The initiative "Using Technology for Social Good in the Classroom" has proven to be an effective approach in overcoming educational challenges posed by remoteness, limited resources, and the digital divide. By

implementing customized digital tools, multimedia learning, and online resources, I've worked to create an inclusive and interactive educational environment that benefits students, parents, and the broader community in Uttarakhand. These efforts contribute to building digital literacy, expanding learning opportunities, and inspiring students to actively engage with their education.

The success of this project highlights the potential of technology to serve as a powerful equalizer, ensuring that even in the most remote areas, students can access the same quality of education as their urban counterparts. Technology, when used thoughtfully and strategically, not only enhances the learning experience but also cultivates self-reliance, curiosity, and critical thinking skills that are essential for success in the modern world.

Future Plan

Building on the positive outcomes achieved so far, my future plans include:

1. **Enhancing Offline Capabilities**: Expanding offline accessibility for *Bajela Online Education* and other applications to ensure uninterrupted learning in areas with limited internet connectivity.
2. **Developing More MOOCs and Interactive Content**: Creating additional Massive Open Online Courses on *Moodle* to cover a broader range of subjects, with interactive quizzes, videos, and assessments that help students learn independently.
3. **Expanding Digital Magazine and Blog Contributions**: Allowing more student-led content on *Dug Dugi* digital magazine and the educational blog *Education for All*, empowering students to share their insights and creativity.

By continuing to innovate and adapt these tools, I hope to create an enduring model of inclusive, tech-based education in rural and remote settings that can inspire similar initiatives across other underserved regions in India.