

Marching Beyond the Libraries

Leadership, Creativity, and Innovation

Editors

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LEVERAGING TECHNOLOGY FOR SKILL DEVELOPMENT IN THE LEARNING RESOURCE CENTRE: A STUDY IMPLEMENTING SMART LIBRARY SYSTEM AT WORLD SKILL CENTER

-Niranjan Mohapatra, Satyajit Nayak and Manas Ranjan Mishra

ABSTRACT

Library technology, including ILMS, RFID, AR, and VR, can enhance efficiency, reduce errors, and improve patron and librarian convenience. The World Skill Center (WSC) uses cutting-edge technology to improve services, engage students, and offer vocational education. The study evaluates library technology use, including challenges, infrastructure, staff training, and cost. Koha ILMS improves library operations and user experience, while RFID automation and AR/VR enhance learning. However, challenges include technical, financial, data security, user adaptability, staff training, change management, learning curve, digital divide, inclusivity, and content and resource development. Successful integration requires libraries to adapt to modern technologies and include users.

Keywords:ILMS, RFID, AR, VR, Automation, Smart Library

INTRODUCTION

Libraries are transforming into digital navigators, offering digital collections, online access, and open-access initiatives, bridging the digital divide for underserved communities, and educating citizens about digital phenomena. As the library moves from bridging the digital divide by providing access to technology to addressing more complex digital democratic issues, how should it serve citizens today (Sofia, 2023). Considering these challenges, there is an immediate necessity for a comprehensive, modern library management information system that improves workflow, reduces errors, and improves convenience for both patrons and librarians. A system that utilizes the internet and computers would allow users to easily search for and obtain book information, transforming the borrowing process and ensuring libraries stay relevant and adaptive in the digital era (Mohapatra & Das, 2017). Libraries serve a crucial function in fostering literacy and continuous education. They

provide programs and resources that assist individuals of all ages in acquiring new knowledge and enhancing their skills (shaikh, 2022).

Using innovative technologies requires library preparation, resource allocation, and staff training. Strategically integrating these tools can make library services innovative and engaging in the digital age. VR and AR transform our physical and digital interactions. AR overlays digital information on the real world, while VR simulates it. These technologies are useful in education, and training (Isiaka et al., 2024). Smart libraries automate operations, improve user experience, and create immersive learning environments using ILMS, RFID, AR/VR. For lifelong learning and digital literacy, libraries offer online courses, self-study resources, and skills development platforms. Libraries combine physical and virtual services. Staff training, infrastructure investments, and privacy are digital data management challenges.

World Skill Center

The World Skill Center (WSC) is an advanced skill development institute focusing on vocational education and training. Established in 2021, it is part of the state government's "Skilled-in-Odisha" program. WSC offers industry-relevant training in high-demand sectors like manufacturing, technology, hospitality, and healthcare. It aims to deliver world-class technical education, promote lifelong learning, facilitate industry partnerships, and leverage technology to prepare a skilled workforce for the future job market (WSC, n.d.).

Technological Transformation

Libraries are embracing modern technologies like Integrated Library Management Systems (ILMS), Radio Frequency Identification (RFID), Augmented Reality (AR) and Virtual Reality (VR) to improve operational efficiency, user experience, and relevance in the information-driven world. These innovations automate core library functions, reduce human error, enhance security, and create engaging learning environments (Mohapatra et al., 2023). By embracing these technologies, libraries stay relevant, offer new services, and stay ahead of the curve.

PURPOSE OF THE STUDY

This study explores the use of advanced technologies like ILMS, RFID, and AR/VR in libraries to enhance efficiency, accessibility, and interactivity. It highlights how these technologies can make learning more engaging and effective, particularly in a skills-driven institution like the World Skill Center. The paper also provides an implementation blueprint for these technologies, discussing challenges and opportunities, infrastructure, staff training, and cost issues, as well as the long-term benefits for students, staff, and the institution.

METHODOLOGY

This study adopted a mixed-methods research design to gain both quantitative and qualitative insights. The mixed-methods approach allows for comprehensive data collection and analysis, capturing both measurable outcomes and nuanced perspectives. Quantitative methods were used to assess IT infrastructure, hardware software used for the Smart Library System. Qualitative methods were focused on understanding the user experience, challenges faced during implementation, and feedback on the impact on skill development. Data was collected through surveys, statistics and observational studies.

OBJECTIVES

- To evaluate how the Smart Library System facilitates skill development among users at the World Skill Center LRC.
- To assess the impact of technological tools within the Smart Library System on the accessibility, efficiency, and effectiveness of library resources.
- To identify challenges faced by both staff and users in the implementation and use of the system.

Technology Integration at the WSC Learning Resource Centre (LRC)

The Learning Resource Centre (LRC) at the World Skill Center (WSC) is a vital hub for skill development and educational improvement. Operated under the Academy department, it utilizes advanced technologies to enhance services, engage learners, and achieve its goal of delivering exemplary vocational education. The LRC includes automation, self-check-in and check-out stations, OPAC kiosks, smart cards, patron counters, RFID security gates, cloud-based online services, and reservation/renewal on web portals and mobile apps. The centre also offers virtual reality and self-learning tools, electronic resources platforms, and a Developing Library Network (DELNET) and National Digital Library (NDLI) Club. The library services at WSC LRC are designed to ensure access to both traditional and digital resources while maintaining operational efficiency.

The World Skill Center (WSC) is focused on providing advanced technical and vocational education, and its library services play a crucial role in supporting these educational objectives. The existing library systems and processes at WSC are designed to ensure access to both traditional and digital resources while maintaining operational efficiency. Here is an overview of the key components of WSC current library services:

Integrating ILMS

An Integrated Library Management System (ILMS) is a comprehensive solution designed to manage various library functions efficiently, combining different modules that automate tasks such as cataloguing, circulation, acquisitions, inventory, and user account management (Sarma, 2016). At the World Skill Center (WSC), implementing the open-source Koha ILMS can significantly streamline library operations and enhance the overall user experience which is shown in figure 1. Both Physical and online operations are automated by Koha ILMS at WSC Learning Resource Centre.

Practical benefits of ILMS Integration in LRC

The implementation of Koha ILMS at WSC LRC was initiated by the WSC Academy team & IT team with support of SOUL (Sustainable Outreach and Universal Leadership)Ltd. Bhubaneswar. Koha was installed in a cloud-based server, and it integrated with WSC ERP, WSC LRC mobile Apps and LRC PTC (Patron Traffic Counter). The work of the service provider. The ILMS also integrated with RFID technology.

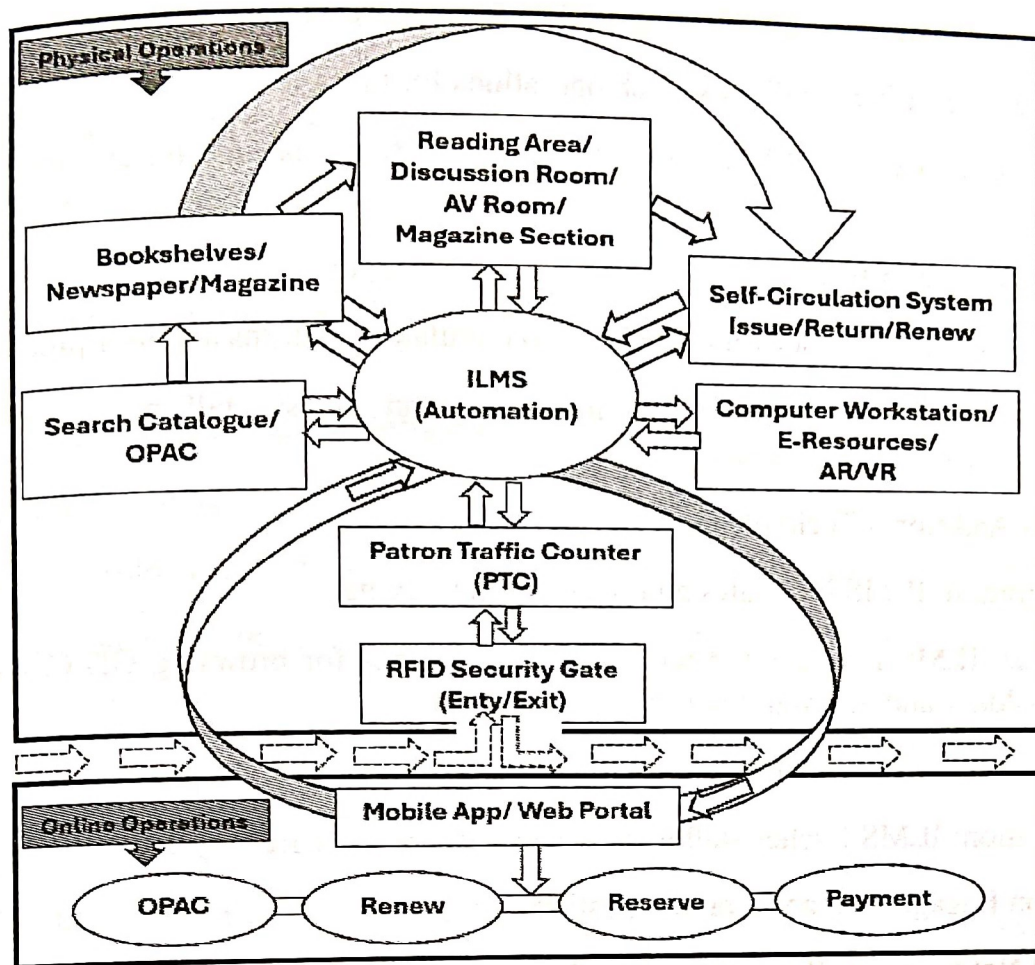


Figure 1: Automation System and Operations of WSC LRC

Optimized Library Operations:

- Automated Circulation Processes: ILMS eliminates manual processing, reducing errors and saving time.
- Self-Service: RFID-integrated kiosks allow users to independently check out and return items.
- Inventory Management: ILMS provides real-time monitoring of all library assets.

Centralized Resource Management:

- Unified Catalogue: ILMS manages physical and digital assets.
- Streamlined Acquisitions: ILMS consolidates the acquisition process.
- Enhanced Collection Management: ILMS monitors circulation data and user trends.

Improved User Experience

- User-Friendly OPAC: Allows users to easily search library holdings.
- Customized User Accounts: Users can manage borrowed items, place holds, review borrowing history, and renew materials.
- Mobile Access: ILMS platforms provide mobile access for browsing the catalogue.

Enhanced Efficiency and Reduced Workload:

- ILMS automates routine tasks, allowing staff time for more valuable activities.
- Batch Processing: ILMS facilitates batch operations for tasks.
- Improved Collaboration: ILMS facilitates collaboration via interlibrary loans or shared collections.

Real-Time Data and Reporting:

- Detailed Analytics: ILMS delivers insights into circulation patterns and user preferences.
- Performance Monitoring: Library administrators can assess staff performance, resource circulation, and acquisition trends.

Integration with Additional Technologies

- RFID Integration: ILMS facilitates automated item tracking.
- Mobile Apps: ILMS is integrated with LRC mobile apps for browsing OPAC, checking user accounts, holding and renewal items, fine payment.
- Patron Traffic Counter (PTC): PTC fetches real-time data from Koha ILMs.
- ERP Integration: ILMS fetches staff and student data from the ERP system.

Enhanced Patron Engagement and Communication

- Automated Notifications: ILMS can dispatch automated notifications.
- Customized Services: ILMS enables the library to provide individualized services.

Improved Security and Loss Mitigation

- Tracking and Monitoring: ILMS integrates RFID and Accession numbers for efficient material circulation.
- Controlled Access: ILMS ensures only authorized individuals can borrow resources.

Scalability and Flexibility

- ILMS systems adapt to library growth and include customizable features.

Ecological Advantages:

- Paperless Operations: ILMS reduces paper usage and optimizes resource utilization.

Key Steps for ILMS Integration in LRC

Step 1: Assessment of Needs and Requirements

- Evaluate current library processes and tools to identify gaps and inefficiencies.
- Define objectives for ILMS integration, including improving resource accessibility, automating routine tasks, enhancing user experience, and supporting digital learning materials.

- Ensure compatibility with existing infrastructure such as RFID, OPAC, and any digital repository systems.

Step 2: Selection of the ILMS Platform

- Research ILMS solutions that suit the specific needs of WSC.
- Consider key features like cataloguing and metadata management, circulation management, acquisition and inventory control, user account services, digital resource integration, and scalability.

Step 3: System Customization and Configuration

- Tailor the ILMS to fit WSC's specific workflows and policies.
- Define separate roles within the system for library staff, administrators, and users.
- Customize the public-facing catalogue (OPAC) to match WSC branding.

Step 4: Data Migration

- Transfer existing data from the current system into the new ILMS.
- Clean up old, duplicate, or outdated data before migrating.
- Ensure data fields from the old system map correctly into the new ILMS.

Step 5: Integration with RFID and Other Technologies

- Ensure ILMS is compatible with RFID technology to streamline check-in/check-out processes, inventory management, and security.
- Ensure ILMS works seamlessly with RFID-enabled self-checkout kiosks.
- Integrate with digital repositories for a unified access point for users.

Step 6: Training and User Support

- Provide comprehensive training for library staff on how to use the ILMS.
- Develop user-friendly tutorials and guides for library users.
- Set up a support system for both users and staff to troubleshoot issues post-implementation.

Step 7: Testing and Pilot Implementation

- Run a pilot with a small group of users and resources before full-scale implementation.
- Gather user feedback to ensure the system meets their needs and adjust before full deployment.

Step 8: Full-Scale Rollout

- Launch the ILMS across the entire library system.
- Monitor and optimize system performance.

Implementing RFID

Radio Frequency Identification (RFID) technology revolutionizes library operations by automating processes, alleviating staff workload, and enhancing operational efficiency. It enables fast, simple transactions with minimal errors (Mohideen et al., 2012). RFID systems utilize tags integrated into library materials, readers that identify these tags, and software to oversee the data transmission. When executed properly, RFID optimizes library functions, improves user services, and yields substantial cost and time efficiencies. This outlines the practical advantages of RFID and the necessary procedures for its successful implementation in the Centre of WSC.

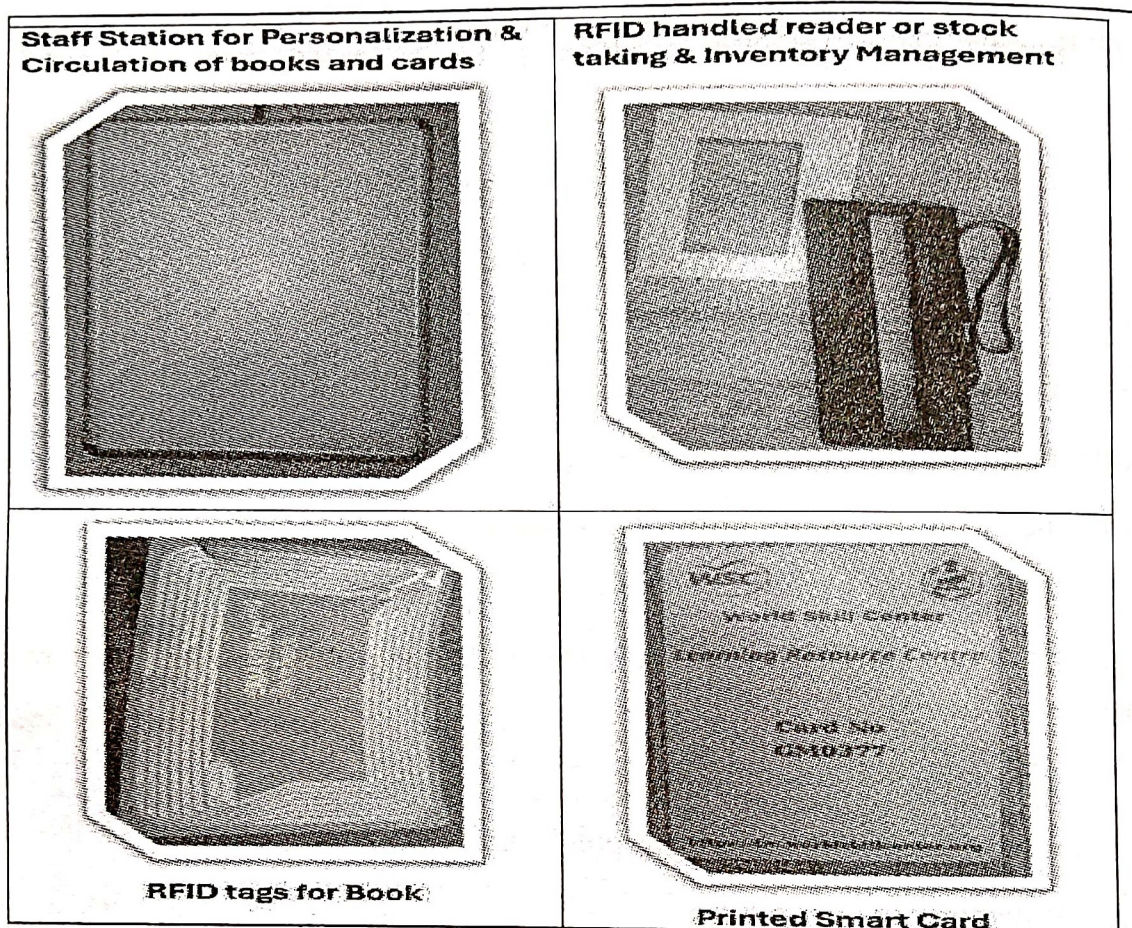


Figure 2: Some RFID devices and equipment at WSC LRC

Practical benefits of RFID in LRC

SOUL Ltd. Bhubaneswar with support from CELECT (Continuum Electroproducts) Pvt. Ltd., New Delhi has implemented RFID technology at WSC. The RFID technology was integrated with ILMS of WSC LRC and offers the following benefits.

Automated Check-in/Check-out:

- Uses RFID-enabled kiosks for independent check-outs.
- Provides faster service and reduces staff workload.
- Enhances user experience with less wait time.

Better Security/Theft Prevention

- RFID security gates detect unauthorized item removal.
- Increases security and reduces losses. Also, count the foot fall of library users.

Effective Inventory Management

- Allows quick inventory checks without direct line-of-sight.
- Reduces human error and provides real-time inventory updates.

Simplified Item Location

- Handheld RFID scanners aid in finding books and shelves.
- Enhances service speed and resource availability.

Smart Attendance System:

- Patron Traffic Counter (PTC) integrates with the RFID system to record user footfall at the library.

Steps for RFID Adoption in LRC

Step 1: Assessment and Planning

- Conduct a Needs Assessment to identify current library processes and RFID potential.

Define Objectives for RFID adoption.

- Develop a budget for RFID tags, readers, gates, software, staff training, and maintenance.

Step 2: Vendor Selection

- Research and compare RFID vendors.
- Request proposals and demos to evaluate features, costs, and usability.
- Consider scalability for future needs.

Step 3: Tagging the Collection

- Tagging each item in the collection with an RFID chip.
- Implementation of the system through a pilot program.
- Tag assignment of each RFID tag with the item's unique identification number.

Step 4: Installation of RFID Readers and Gates

- Install Self-Service Kiosks, RFID Security Gates, and Handheld RFID Scanners.

Step 5: Staff Training

- System training on RFID equipment use.
- Change management guidance on RFID changes.

Step 6: User Education

- Promote Self-Checkout and Library Tours and Tutorials.

Step 7: System Integration and Testing

- Ensure smooth integration with the existing Integrated Library Management System (ILMS).
- Conduct extensive testing of the RFID system's performance.

Step 8: Monitoring and Continuous Improvement

- Track system performance using RFID analytics.
- Collect feedback to evaluate the system's impact and identify areas for improvement.

Enhancing Learning with AR/VR

Augmented Reality (AR) and Virtual Reality (VR) technologies are transforming education by providing immersive and interactive learning experiences that surpass conventional methods. Currently, VR technology is being utilized across various sectors, including entertainment, business, and education (Luna, 2022). In other words, Augmented reality augments the present situation by adding digital elements to a live visual (Adewusi et al., 2024). In the library context, these technologies offer novel methods to augment learning, engage students, and facilitate skill development. The World Skill Center (WSC) utilizes AR/VR to develop a Smart Library that revolutionizes how learners' access, engage with, and assimilate information. Figure 4 presents the steps for the functionality of VR system in WSC LRC. Figure 3 presents a flow chart of the VR system in WSC LRC.

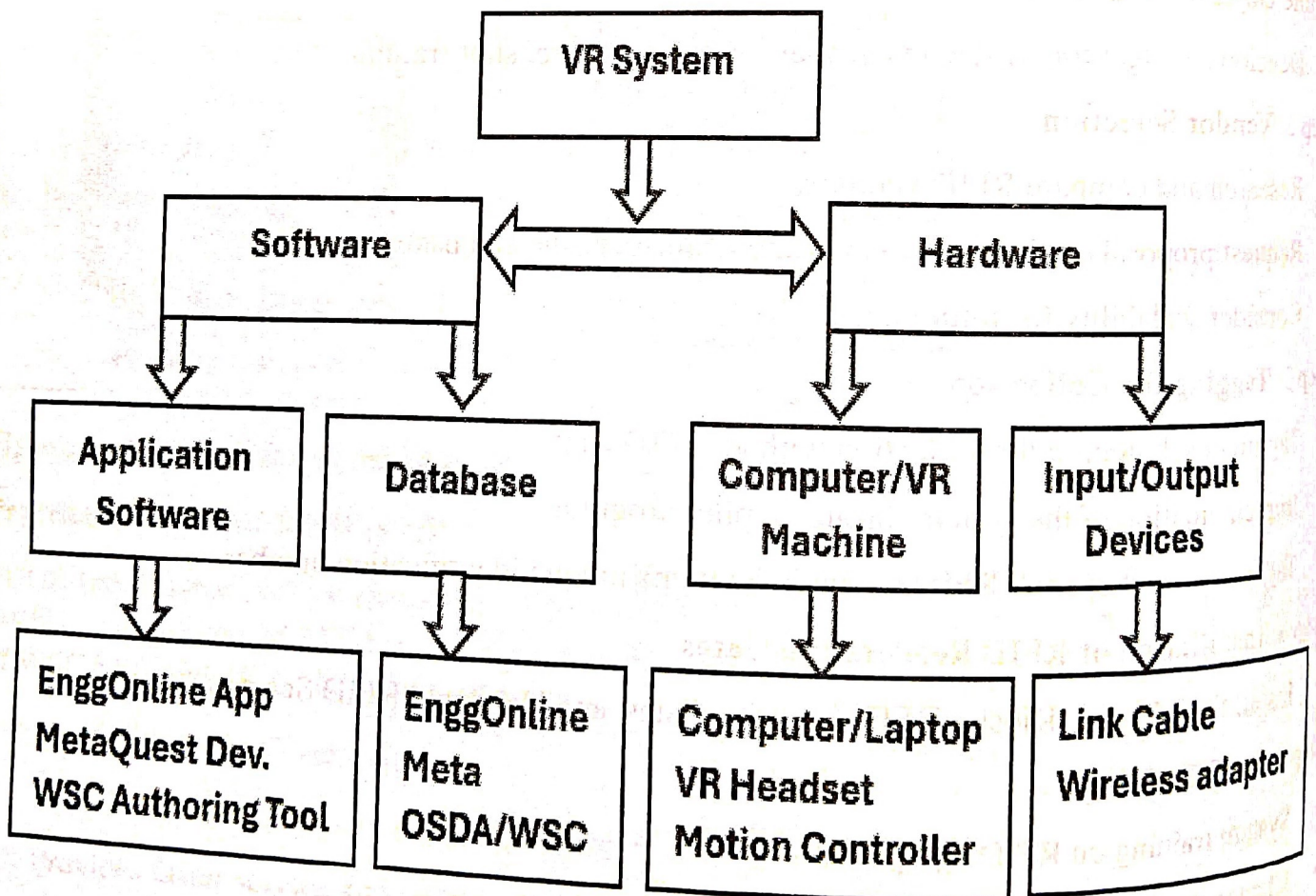


Figure 3: Virtual Reality (VR) system at WSC LRC

Practical benefits of AR/VR in LRC

FEAST Software Pvt Ltd., Mumbai with support of EnggOnline, Mumbai provided AR/VR services for WSC Learning Resource Centre. The important thing is that all the contents are homemade. The content shot at WSC labs and voiceover and video lectures given by WSC trainers.

Enhancing Library Resources with AR/VR

Virtual Reality Classrooms: Trainers at WSC can start a VR classroom (pre-recorded video) and trainees/students can join the live VR classroom at the VR workstations. Students/Trainees from outside of WSC also can join a VR Classroom through “WSC authoring tool” Application. The VR classroom is based on a 360° video model and voice chat interaction of trainees with trainers also available in this platform.

Virtual Reality Content Management: Trainer can upload contents i.e. 3D models, 360° videos, images, and Quiz in “WSC Authoring tool”. Users/trainees can solely view the content using VR workstations at WSC LRC.

Hands-On Experimentation and Skill Development

Skill-Based Workshops and Labs: The Centre has an “EnggOnline” App which runs Virtual Reality Laboratory and workshop experiments. Using VR headset (Oculus) and VR controller students/trainees can practice their lab works available for different Engineering courses i.e. Pneumatic of Mechatronics, Nitrogen leakage test of Air conditioning and refrigeration, basic fire extinguisher of fire safety etc.

Life and Employability Skills Practice: There are three different scenarios for this VR module of Life and employability skills i.e., Job Interview, Entrepreneurship, Design Thinking. Students/Trainees can practice virtual reality Job interviews, Business Plan Presentation and Market Survey etc. through this VR module which is run by “MetaQuest Developer” Apps. The interesting thing about this module is that it recognises/runs on fingertips instead of a VR controller.

New Experiment Attracting Users

Interactive self-Learning Materials: VR platform works as self-learning tools where AI gives instructions to the learner step by step. It attracts students/trainees who need more skill practice repeatedly or are unable to attend/understand in their physical workshop/practical provided by the trainer.

VR-based training sessions allow students to practice real-world skills in a virtual environment. For example, students can perform a virtual experiment, assemble a machine, or conduct a virtual repairing Air-condition refrigerator. These immersive simulations attract users who want to apply theoretical knowledge in a practical, risk-free setting.

Steps for introducing AR/VR in LRC

Implementing AR/VR technologies in the World Skill Center’s Learning Resource Centre (LRC) required careful planning, resource allocation, and a phased approach to ensure successful integration. Below are the key steps to introduce AR/VR in the LRC effectively:

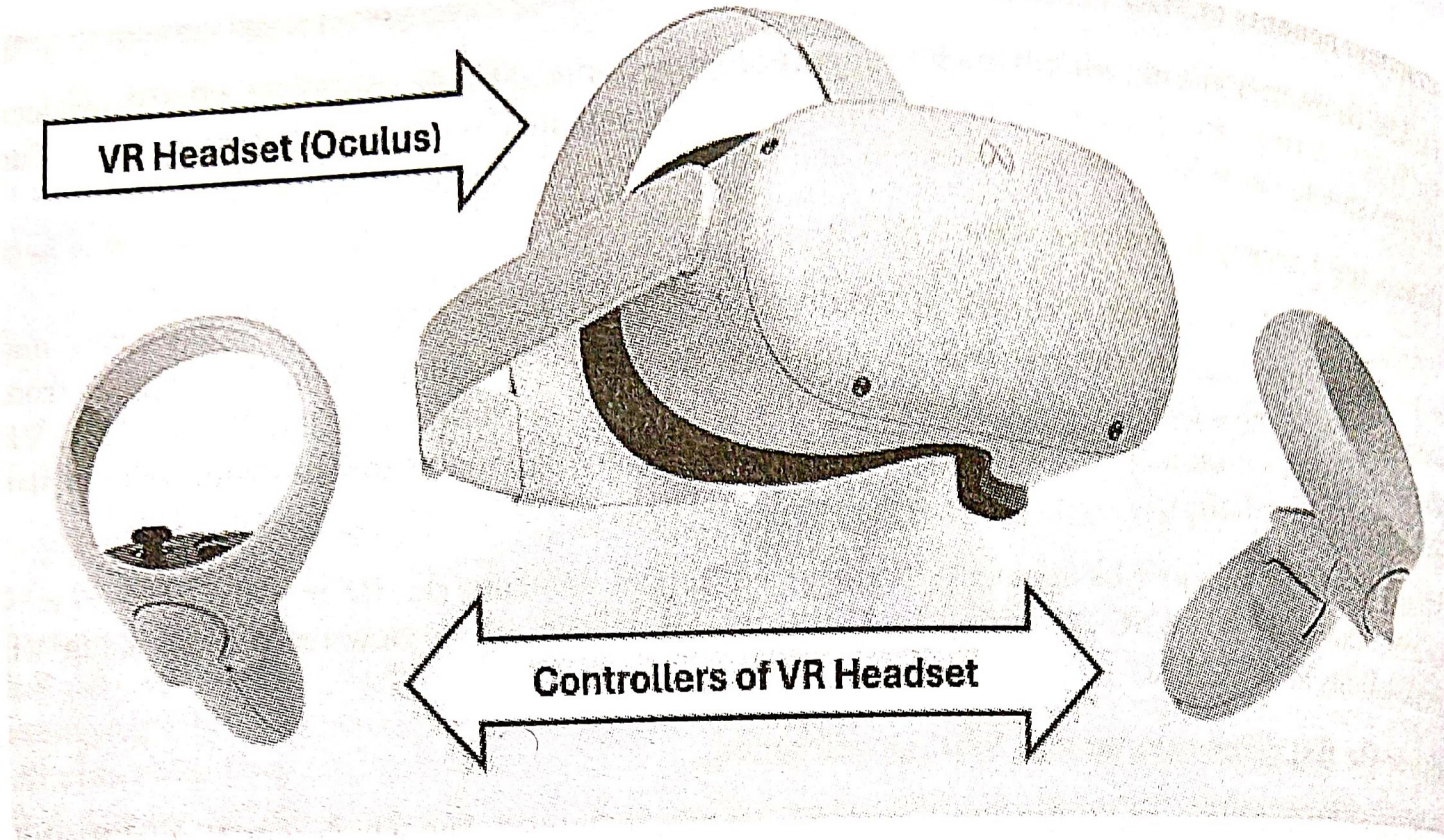


Figure 4: Virtual Reality (VR) Machine set

Step 1: Identifying Educational Needs and Goals

- Identify educational needs for AR/VR integration.
- Set clear goals for AR/VR integration.

Step 2: Researching AR/VR Tools

- Explore available AR/VR platforms, software, and hardware.
- Assess content from educational simulation resource providers.
- Develop custom AR/VR applications.

Step 3: Obtaining Funding and Budget Allocation

- Plan budget and estimate investment.
- Seek funding through educational grants or industry partnerships.
- Choose cost-effective options.

Step 4: Creating a Pilot Program

- Start small to evaluate AR/VR technologies in a few courses.
- Target early adopters for feedback.

Step 5: Infrastructure Setup/Installation

- Arrange AR/VR stations in the library.
- Install content and software.
- Establish power and network needs.

Step 6: Staff Development Training

- Train library staff to help users use AR/VR technologies.
- Train faculty/staff members for integration into teaching.
- Create user guides/manuals for AR/VR tools.

Step 7: Promoting AR/VR to Users

- Launch awareness campaign.
- Host demonstrations and workshops.
- Create AR/VR-focused events.

Step 8: Getting Feedback and Assessing Performance

- Regularly collect user feedback.
- Track learning results and usage statistics.

Step 9: Growing the Program

- Refine from pilot feedback.
- Integrate into more courses.
- Regularly update AR/VR content.

Step 10: Maintaining Support and Sustainability

- Create a plan to service, update, and replace AR/VR hardware and software.
- As the program grows, assign technical support staff for troubleshooting and training.

Automation System & Operations of WSC LRC

As shown in figure no.1, WSC LRC have both physical and online operations of automation using technology. Web portal and mobile apps are available for access online services i.e. OPAC, Renew, Reserve/Hold, Book suggestion, Payment etc. along with online e-resources. However, the physical operations or onsite automation operations include RFID security gates, Patron Traffic Counter, Search Catalogue, Self-check in/Out, etc., which pictures are shown in figure 5. The previously mentioned diagram in fig.1 shows the rout map of operations. Every user of the library must have to entry exit through RFID security gate and PTC Smart attendance system. Users can move directly to Self-check in/out if they have to return library materials. For borrow/issue, they must go through bookshelves and, if required, go through OPAC and reading space, discussion room, etc. Users can access computer workstations for using e-resources or AR/VR directly after their attendance at PTC. From attendance to user feedback and RFID to mobile apps are managed by ILMS Koha.

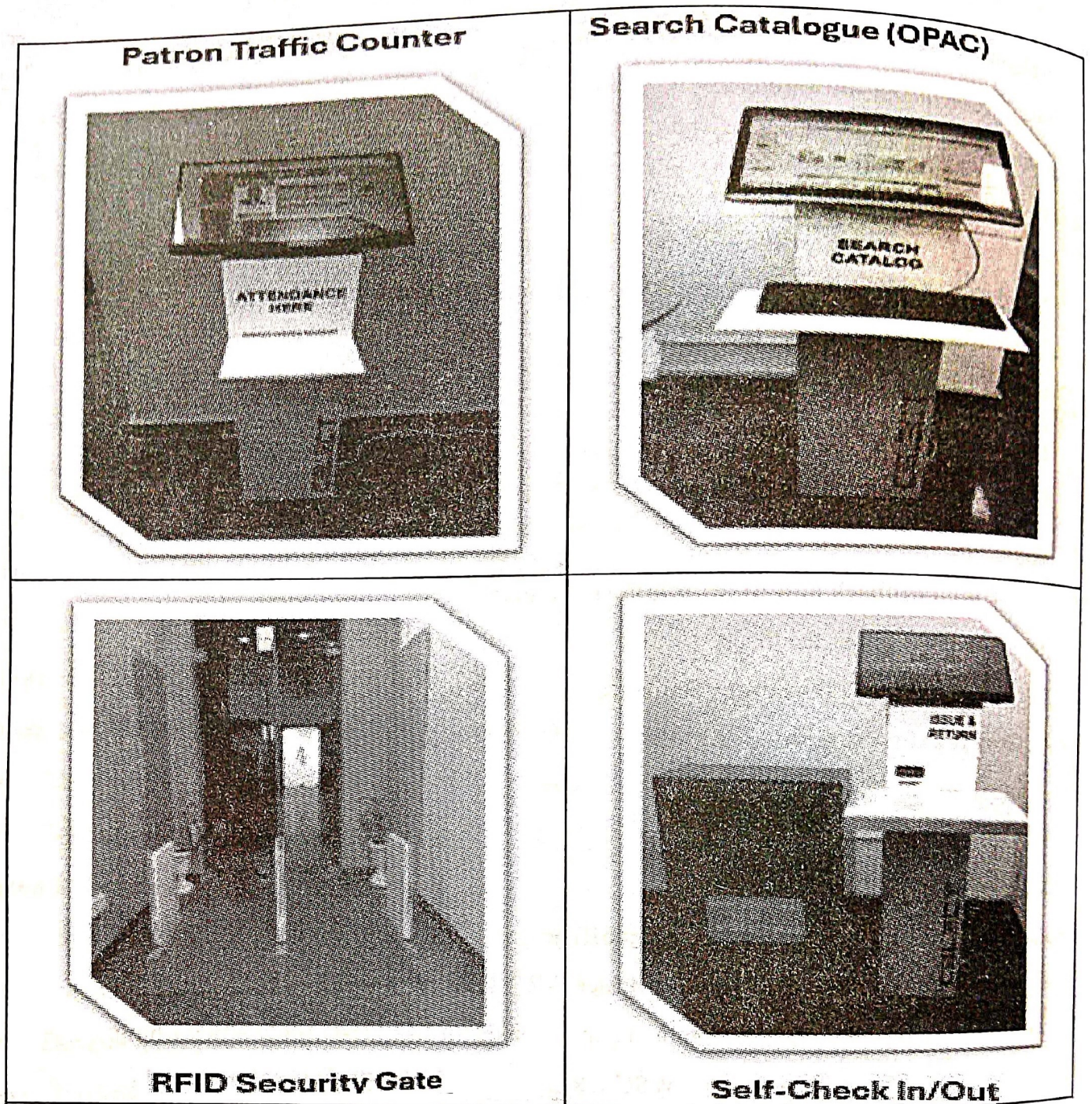


Figure 5: Automation System Used in WSC LRC

CHALLENGES AND CONSIDERATIONS

Innovative technologies like ILMS, RFID, and AR/VR can improve library functionality and user experience, but they also present several challenges that must be overcome. Technical, financial, data security, and user adaptation issues are among these challenges. Understanding these factors is essential for creating strategies to ease the transition to a more technologically advanced library.

Technical Challenges

- **Infrastructure Requirements:** Implementing ILMS, RFID, and AR/VR technologies requires significant upgrades to library infrastructure.

- **System Integration:** Merging innovative technologies with existing systems can be complex, leading to compatibility issues.
- **Maintenance and Upgrades:** Regular maintenance and updates are required for the technology to remain functional and secure.

Financial Considerations

- **Initial Investment Costs:** Libraries must consider the costs of purchasing and installing these technologies.
- **Ongoing Operational Costs:** Libraries must consider ongoing expenses of maintaining these systems.
- **Cost-Benefit Analysis:** Libraries must evaluate the benefits of adopting these technologies.

Data Security and Privacy Concerns

- **User Data Protection:** Libraries collect a vast amount of user data through ILMS and RFID systems, raising concerns about the protection of sensitive information.
- **RFID Security Risks:** RFID tags pose security risks if not properly encrypted.
- **Compliance with Data Protection Regulations:** Libraries must ensure they comply with data protection laws.

Staff Training and Change Management

Staff Skill Development: Staff must learn new skills and adapt to different workflows.

- **Resistance to Change:** Effective change management strategies are essential for overcoming resistance.
- **Learning Curve:** Both staff and patrons may face a steep learning curve when using advanced systems like AR/VR.

User Adoption and Accessibility

- **User Familiarity with Technology:** Clear instructions, user-friendly interfaces, and support services are needed to assist users in navigating these technologies.
- **Digital Divide:** AR/VR experiences or online catalogs in ILMS may be inaccessible to users without access to required technology.
- **Inclusivity:** Libraries must ensure technology adoption does not alienate patrons with disabilities or other special needs.

Content and Resource Development

- **Creating Relevant AR/VR Content:** Libraries may need to collaborate with educational institutions, tech companies, or content creators.
- **Customization for Local Needs:** Technologies like ILMS and AR/VR should be tailored to the specific needs of the library and its user base.

CONCLUSION

In conclusion, a Smart Library System at the World Skill Center (WSC) shows how technology may improve skill development and learning resource management. The library's operations are now more efficient, interactive, and user-centered thanks to innovative tools like ILMS, RFID, and AR/VR. The WSC Smart Library System automates essential library functions and improves user experience, streamlining workflows, increasing resource accessibility, and creating immersive learning possibilities. This change supports WSC's mission to promote vocational skills and continuous learning by giving users tools to improve their education.

The study found that deploying these technologies requires significant infrastructure investment, data security considerations, and staff and user training. These difficulties demand careful planning, coordination, and ongoing maintenance and assistance. The Smart Library System at WSC can continue to inspire skill-based libraries to succeed in the digital age by addressing these aspects. This study emphasizes the role of technology in connecting traditional library services to modern educational needs, offering insights that other institutions might use to improve their library systems.

REFERENCES

- Adewusi, M. A., Sophia, K., Odekeye, O. T., & Egbowon, S. E. (2024). Augmented reality in the library automation: students' perception. *Educational perspectives*, 12(1). <https://www.researchgate.net/publication/377028340>
- Isiaka, A.O.; Soliu, A.; Aremu, B.A.; Bamidele, B.A.; SabaJibril, S.; Ibitoye, A.R. (2024). The Evolving Role of Libraries in the Fourth Industrial Revolution: Navigating Digital Transformation". *Library Philosophy and Practice (e-journal)*. <https://digitalcommons.unl.edu/libphilprac/8141>
- Luna, Alvin Alburo De (2022). *Introduction to Virtual Reality*, Canada: Arcler Press. <http://rguir.inflibnet.ac.in:8080/jspui/bitstream/123456789/16380/1/9781774693209.pdf>
- Mohapatra, N., Das, B.K. (2017). Modern and smart library in the information age. *INFOLIB*, 10 (1-2), 1-6. <https://www.researchgate.net/publication/335465812>
- Mohapatra, Niranjana, Nayak, Satyajit, and Parida, Dillip Kumar. (2023). Unleashing the Potential of the Internet of Things in Transforming Libraries into Intelligent Hubs of Digital Knowledge. *Library Philosophy and Practice (e-journal)*. 7659. <https://digitalcommons.unl.edu/libphilprac/7659>
- Mohideen, Z. A., Muhamad, S., Ghadzali, M. P., & Arshad, M. R. M. (2012, November). A practical approach to radio frequency identification library management system. In *2012 IEEE International Conference on RFID-Technologies and Applications (RFID-TA)* (pp. 323-329). IEEE.
- Sarma, G. K. (2016). OPAC module in open source library management software: A comparative study. *DESIDOC Journal of Library & Information Technology* 36(1), pp. 56-6. DOI: 10.14429/djlit.36.1.9223

- Shaikh, J. (2022). Libraries in the Digital Age: Their Value and Role. Medium. <https://medium.com/@jaafarshaikh2573/libraries-in-the-digital-age-their-value-and-role-9ddab9fc7f56>
- Sofia, S. (2023). The role of the library in a digital age: Designing for public digital culture. Uppsala University, Faculty of Social Sciences, Department of Informatics and Media. <https://uu.diva-portal.org/smash/get/diva2:1800028/FULLTEXT01.pdf>
- World Skill Center. (n.d.). About Us. Official Website of WSC <https://www.worldskillcenter.org/>