

**RESEARCH PAPER****NEP 2020 & Multimedia Supported Teacher Education Program****Syeda Yasmeen and Fatima Kazmi**

MATS University, Arang, Raipur (C.G)

Email: yasmeen72kazmi@gmail.comReceived: 20th Feb. 2023, Revised: 10th March 2023, Accepted: 20th March 2023**ABSTRACT**

Teacher education is an amalgamation of teaching skills, diverse learning styles, curriculum, teachers, educators, students, and infrastructure. Information and Communication Technologies, which have taken a central role in the past few decades, can contribute towards enhancing teaching abilities and learning quality in teacher education. National Education Policy, 2020 has a special focus on multimedia support in teacher education. The paper discusses the new trends in Teacher Education with the implementation of multimedia with a few recommendations regarding NEP-2020. Utilizing Multimedia applications in educational settings, however challenging it may be, can accelerate the learning outcomes as it provides proactive learning techniques with an all-inclusive environment. It provides varied opportunities and methods to boost the process of gaining knowledge in a holistic manner. Hence, this paper focuses on integration of multimedia in teacher education. This paper makes the strong claim that for multimedia to have any significant effect on education, the educational multimedia applications must be designed by the teachers of those classes. The paper begins with an introduction discusses what is a multimedia and a multimedia authoring tools and describes some typical areas of multimedia application development. Finally the paper ends with the action plan and concludes that we must need as an educator to create our own multimedia applications if we really want to make use of the multimedia applications as an effective tool in education to initiate the NEP 2020.

Key words: Education, Learning, Multimedia applications, authoring tools

INTRODUCTION

The National Education Policy (NEP) 2020 has been proposed by the newly renamed Ministry of Education and approved by the union cabinet of India in July 2020, envisioned to reinvent and reshape the education system in the global world. In internationalizing indigenous knowledge via digitalized course material, mixed learning is important to assist achieve the aims of NEP-2020. Darling Hammond and Berry (2005) suggest that "For widespread change to occur, teachers need to incorporate the opportunities of the emerging technological infrastructure into their overall curricular thinking (P.19).

A National Educational Technology Forum (NETF) has been created where the e-courses will be developed in regional languages and virtual labs will be developed and to help enhance learning, assessment, planning, and administration to support the professional development of pre service and inservice teachers, improve classroom processes, enhance educational access for disadvantaged groups and streamline educational planning, administration, and management as an appropriate integration of technology into all levels of education. Multimedia provide an array of powerful tools that may help in transforming the present isolated, teacher-centred and text-bound classrooms into rich, student-focused, interactive knowledge environments.

KEY INITIATIVES IN EDUCATION REGARDING NEP-2020

NEP, 2020 realized the importance of digital technologies and leveraging technology for teaching learning at all levels from school to higher education. Following are the key initiatives recommended by NEP, 2020:

1. Experimental Trial For Online Education: In NPE educational agencies such as CIET, NIOS, NETF, IITs, NIT, IIMs, and IGNOU, etc. will be identified to conduct a series of pilot studies to evaluate the benefits of digital education along with other study areas like modules of e- content,

student device addiction, etc. The results of these pilot studies will be used for the continuous improvement of online education.

2. Digital Framework: Evolvable, public digital infrastructure in the education sector that can be used by multiple platforms and point solutions, to solve for India's scale, diversity, complexity and device penetration. This will ensure that the technology-based solutions do not become outdated with the rapid advances in technology.

3. E- Platform and Tools: E-learning platforms such as SWAYAM and DIKSHA will be extended to provide teachers with a structured, user-friendly, rich set of assistive tools for monitoring the progress of learners. Tools, such as two-way video and two way-audio interfaces for holding online classes are a real necessity as the present pandemic has shown

4. E Content Creation and Digital Repository: A digital repository of content including the creation of coursework, Learning Games & Simulations, Augmented Reality and Virtual Reality will be developed, with a clear public system for ratings by users on effectiveness and quality. For fun-based learning student- appropriate tools like apps, gamification of Indian art and culture, in multiple languages, with clear operating instructions, will also be created. A reliable backup mechanism for disseminating e-content to students will be provided.

5. Accessibility of Digital Devices: A major section of the population whose digital access is highly limited, the existing mass media, such as television, radio, and community radio will be extensively used for telecasts and broadcasts of educational programs available 24/7 in different languages to cater to the varying needs of the student population. A special focus on content in all Indian languages will be emphasized and required; digital content will need to reach the teachers and students in their medium of instruction as far as possible.

6. Development of Virtual Labs: E-learning platforms such as DIKSHA, SWAYAM and SWAYAMPBHA will also be leveraged for creating virtual labs so that all students have equal access to quality practical and hands-on experiment- based learning experiences. The possibility of providing adequate access to SEDG students and teachers through suitable digital devices, such as tablets with pre-loaded content, will be considered and developed.

7. Developing Tech-Savvy Teachers: Teachers will undergo rigorous training in learner-centric pedagogy and on how to become high-quality online content creators themselves using online teaching platforms and tools. There will be an emphasis on the teacher's role in facilitating active student engagement with the content and with each other. National Education Policy 2020

8. Assessment Framework: Proposed National Assessment Centre or PARAKH, School Boards, NTA, and other identified bodies will design and implement assessment frameworks encompassing the design of competencies, portfolios, rubrics, standardized assessments, and assessment analytics. Studies will be undertaken to pilot new ways of assessment using education technologies focusing on 21st-century skills.

MULTIMEDIA AND THE AUTHORING TOOLS

According to (Sethi, 2005); (Mayer, 2001) Multimedia refers to the integration of two or more different information media within a computer system. These media can include text, images, audio, video, and animation. Vaughan (2011) defined multimedia as a combination of digitally manipulated text, photographs, graphic art, sound, animation, and video elements.

When the user has some control of what is presented it becomes interactive multimedia. Before producing any application you should be very clear about why you wish to produce it and what you expect to gain from it. Spend time finding out what other courseware is already available in your subject area that you can modify using a tutorial shell which will greatly reduce the programming effort required, and may provide you with a good quality user interface that has already been through a testing and evaluation cycle with students.

Vaughan (2011) defines authoring tools as 'These software tools are designed to manage individual multimedia elements and provide user interaction' (Vaughan 2011, p.2). Generally authoring systems provide lots of graphics, interaction, and other tools educational software needs.

Depending on the educational multimedia application which is to be developed, what information is to be conveyed, who the audience will be, and how much interaction there will be between the application and the user, an appropriate tool can be chosen. Educational multimedia applications can be subdivided into four typical educational multimedia application areas as follows:

1. Text-Based Applications:

Many multimedia applications provide efficient navigation through a large resource of primarily text-based information which need to be searchable so that relevant information can be found easily and quickly. Development tools, which cater to this type of application, provide hypertext capabilities similar to regular text, except that it contains information pointing to another point in an application. Microsoft Windows Help is an example of a hypertext, searching program. Some form of an overview, table of contents, or map of the information available in such an application helps the user to navigate efficiently. These applications can also often handle embedded images, sounds, and movies, which make them true educational multimedia applications. Adobe Acrobat is another text-based package which is hypertext-capable, but has limited search capabilities. screen design is use to coordinate text and graphic elements in order to present sequenced content to facilitate learning and enhance student's understanding. Each instruction that display on screen in a multimedia application must provide effective instruction and navigation tools to the students. a good screen design should require focusing student's attention, maintaining their interest, promoting processing and engagement between student and lesson content,that help student find and organize the information and facilitate lesson navigation.

2. Interactive Applications:

The majority of educational multimedia applications fall into the category of interactive, graphical applications. The multimedia tools which can handle all media formats, providing interactivity with the user. It also offer a very high level language or interpreted scripting environment for navigation control and for enabling user inputs and it provides the ability to allow specific feedback to the user, keep track of results, and customize the application to a specific user as a function of responses. Authoring tools, which cater to this type of application generally, included programing future, commands and functions provided in the Apple Media Tool Programming Environment from Apple, and Course Builder from Discovery Systems are professional-quality, sophisticated multimedia packages, but are quite expensive. Development packages like Sum Total Systems Multimedia Tool Book, and Claris Corp's Hypercard are very capable development tools which cost significantly less. , it allows student to interact and control the flow of information and stage of learning with the multimedia application. Interaction and feedback also enable student active participant in the instruction learning process and provide feedback immediately. Feedback is information about the correctness or appropriateness of student's response which usually displayed on screen.. Navigation feature can enhance learning outcome and make an interactive multimedia applications easy to use by the students. Navigation provides students some control over the events and allows them to jump into new sections or revisit the information from earlier screen.

3. Web Applications:

A new area of educational multimedia applications is emerging with the purpose of providing information to an audience over a wide geographical area. via the Internet in conjunction with new content management system (CMS) providing services to 10-20 million people from commercial and academic organizations. Browsers are capable of retrieving information from all over the world via the Internet in the form of text, graphics, sounds, and movies. One of the important capabilities of the CMS is its support of hypertext, which allows users to maneuver quickly from one page to another with the click of a button. One of the serious drawbacks of this web technology is its lack of organization. Information is made accessible on the World Wide Web using a mark-up language called HTML (Hyper Text Markup Language) which provides protocol for rich-formatted text, embedded graphics, sounds, movies, and hypertext. Recently there has been the development of Image mapping that allows selected regions on an image to contain link which, when clicked, take the user to another document. To provide documents on the Internet with these capabilities requires setting up a World Wide Web server, and composing documents in HTML. The benefit of

system is that a user can gather information free of charge, as long as Internet access exists. It is the standard method for providing many types of information to a wide-area audience.

4. Mobile (Smart) Phones Applications:

Gale research group define mobile phone as an electronic telecommunications device that can make and receive telephone calls. It connects to a wireless communications network through radio wave or satellite transmissions (Gale Research, 2008, p. 658). Nowadays, in addition to telephony, mobile phones support a wide variety of other services, such as text messaging, MMS, email, Internet access, short-range wireless communications (infrared, Bluetooth), multimedia applications, gaming and photography. It is used to play all types of multimedia, e.g. play sounds, view images and watch videos. Mobile phones that offer these and more general computing capabilities are called smart phones. Mobile Applications are the software that runs on a mobile device and performs certain tasks that may include Games, Web Browser, Camera, Media Player, Social Networks, Calendar, Calculator, Image Viewer, etc. The Emantras, a company that develops online and mobile educational tools, has officially launched Mobl21, a platform for creating, managing and distributing educational content to the web and mobile devices. Mobl21 is an educational application created to facilitate mobile learning by complementing current learning methods. Available as a mobile app, desktop widget or web application, provides users with access to customizable learning material, which can be accessed anywhere. It targets individual students and teachers, as well as institutions like colleges and universities. Each account allows users to create educational content like study guides, flash cards or quizzes. Another example of a Mobile multimedia authoring tool is Wapple Canvas. It is a design and publishing platform, enabling the development of highly functional, creative and scalable educational mobile websites.

WHY DO WE NEED TO CREATE OUR OWN MULTIMEDIA APPLICATIONS?

For most of us working at small educational institutions (Schools, colleges, educational centers) where resources are few, money is scarce, time is limited, and professional multimedia developer team is virtually an impossible feat. "The development of educational multimedia inevitably requires the commitment of substantial amounts of time and money. Both are typically in short supply in educational institutions. Research has shown that different students learn better in different ways; there are visual learners, tactile learners, and auditory learners. Also, different subjects and topics are often more understandable when taught in different ways. The use of several media of instruction facilitates the movement of information from short-term memory into long-term memory (Pashler, McDaniel, Rohrer, Bjork, 2008).

With Multimedia applications, students can shift their focus from acquiring information to the task of hand - synthesis, analysis and presentation of information. "Teachers get new competencies and new roles in a multimedia-learning environment. Besides having a broad knowledge base, teachers have to offer pedagogical guidance and supervision by inspiring, motivating and guiding students in their search for knowledge "(Andresen & Brink, 2013, p.13).

Educational Multimedia applications are not, and will never be, transformative on their own. It requires the assistance of educators who integrate Multimedia applications into the curriculum, align it with student learning goals, and use it for engaged learning projects. As instructors, we must realize this fact and adjust our curriculum accordingly. If the full range of multimedia types (images, sounds, animations, and movies) are to be included, a more costly and capable machine is required. On the other hand, projects which provide exclusively text-based information can be implemented on a system requiring fewer extras, and therefore will be less expensive.

ACTION PLAN

The educational institutions staff, administrators, teachers, and parents and community members in order to achieve the aims of NEP 2020 can take the following steps to promote developing educational multimedia applications within the academic community at educational institutions:

- Professional development for technology use should be an integral part of the school technology plan in order to improve teaching and learning.
- The multimedia development effort on educational institutions should be consolidated and organized to increase the efficiency with which applications can be developed, and to share

technical and artistic knowledge. Demand of today's era is that new teaching technologies should be included in the syllabus of teacher training programs.

- Staff members should be educated on the importance of selecting an appropriate multimedia development tool, the challenge of incorporating various media into a production, and the balance, which is necessary between the content, presentation, and programming of an application.
- Communication between academic institutions should be improved to facilitate the sharing of multimedia applications, which are being developed, to avoid repetition of application creation, and to distribute computer-based learning knowledge more widely.
- Government and private institutions of all types of education should organize seminars, workshops and Faculty Development Programs etc. on new teaching technologies to make the teachers aware about these.

CONCLUSION

Multimedia applications can be used to deliver information in an interesting way by combining the elements of texts, images, audios, videos, animations and user control. Multimedia applications have a lot of advantages for the education purposes which can help students have further understanding on certain information or topics. Screen design, interaction and feedback, navigation, video and audio elements are the characteristic of multimedia applications that can be used as a tool to assist teachers and lecturers to achieve educational effectiveness. However, multimedia applications for educational purposes have its disadvantages too. Developing a good multimedia application has high cost that involves time and effort of the developer.

Educational institutions must recognize that Educators and students have needs that our current delivery system is not meeting. We face financial constraints that will not quickly disappear, as well as both global and private competition. To survive these challenges, we must develop our own multimedia applications that contribute to solve these problems and really become an effective tool to enhance learning. It is our responsibility to empower children and make them capable to face the challenges of the future and it can be made possible only by improving teacher education with modern technologies Teacher education program offered by the present system of education must be upgraded by adopting technology-enhanced learning and effective management practices. The great challenge is to change the curriculum and process of teaching learning to make students capable in understanding this changing world efficiently. There is an urgent need to collaborate technology-mediated approaches of education with teacher education programs to enhance the education system in all aspects.

REFERENCES

1. Agarwal Kavita (2022): Digitalized Education and NEP 2020: Reinventing. The Classroom RJPSSs, Vol. XLVIII No.1, June 2022.
2. Kaur Manpreet (2019): ACM Press the Seventh International Conference- Leó n, Spain (2019.10.16-2019.10.18). Proceedings of the Seventh International Conference on Technological Ecosystems for Enhancing Multiculturality- TEEM'19 - ICT in teacher education. 571-574. doi:10.1145/3362789.3362917.
3. Mahajan Gaurav (2012): Multimedia in Teacher Education: Perceptions & Uses Journal of Education and Practice, 3(1): 5.
4. Rathee Neeru and Saini Shobha (2022): ICT Empowered Teacher Education in Today's. ERA, 9(3). <https://www.researchgate.net/publication/363884554>
5. Sharma M., Devi M., Raj T. and Kumar S. (2022): A study on students' perceptions on application of blended learning (BLA) an approach towards NEP. International Journal of Health Sciences, 6(S1): 1580-1589.

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