Master of Education (M. Ed.)

Title of the Course: S.Et. 3(b) Modern Educational Technology
(Semester: I, II, III & IV)

Credits: 4

MM: 100 (External: 70, Internal: 30)

Contact Week 15

Introduction of the Course

In contemporary pedagogy, fluency in modern educational technologies is indispensable for expertise. Comprehensive knowledge necessitates critical examination of augmented reality, virtual reality, artificial intelligence, digitalization, relevant policies and innovations in this rapidly evolving domain. Integrating these technologies has become imperative for educators to excel. This course presumes foundational awareness of advanced educational technologies, though hands-on proficiency may vary. The overarching goal is cultivating discernment and efficacy in leveraging modern ICT as dynamic teaching-learning instruments and critical support systems. With conceptual scaffolds and abundant practical application, core competencies are intentionally fostered. A blended format optimizes differentiated learning despite heterogeneous familiarity levels regarding augmented reality, virtual reality, artificial intelligence and other emerging technologies. By working in supportive peer groups, collaborative knowledge construction is enabled through interdependent guidance. The course essentially functions as skill-development training focused on grasping the pedagogical affordances of technologies and making informed selections for educational usability. The culminating outcome is equipping student-teachers not only with technical capabilities but also the higher-order perspective to integrate modern innovations with wisdom and purpose.

Learning Outcomes

After completion of the course student will be able to:

1. To explore and revisit the relevant resources in order to develop basic understanding of concept of modern educational technology
2. To evolve learning tasks involving augmented reality, virtual reality and artificial intelligence
3. To explore artificial tools and techniques available for teaching, learning and content development
4. To develop the critical understanding about tools and software for teachers
5. To exercise studying e-content development and digitalization based on experiences of classroom interactions and policy documents
6. To hold group discussions and write articles on recent trends and practices in educational systems based upon policies and priority areas

Number of Units: 4 **Weeks 15 = 60 hours**

Unit 1: Modern Educational Technology **(4 weeks = 16 hours)**

- Concept and evolution of modern educational technology.
- Augmented reality, virtual reality and artificial intelligence in education.

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Unit 2: Augmented Reality and Virtual Reality in Education (4 weeks = 16 hours)

- Concept of AR and VR from face to face to virtual/online interaction, significance of AR and VR in education.

Unit 3: Artificial Intelligence in Education (4 weeks = 16 hours)

- Artificial intelligence in learning and teaching.
- Artificial intelligence in content development.
- Changing role of teachers and learners.

Unit 4: Recent Trends in Education (3 weeks = 12 hours)

- Consumer to prosumer. Teacher as a content developer.
- Dimensions of trends and development in modern educational technology.
- Technology in education and beyond. Cyber security and safety.

Practicum/ Suggested Projects / Assignments (Any Two)

1. Paper/article writing on augmented reality and virtual reality
2. Developing and applying artificial intelligence tools in education
3. Analysis of NEPs and their roles in digitalization of education
4. Paper/article writing based on recent trends in education

Note: On the basis of the above, the teacher may design his/her own relevant projects/ assignments.

Essential/ Recommended/ Suggested Readings

- Apple, M. (1995): Education and power. New York: Routledge.
- Barron, A.E., Orwig, G.W., Ivers, K.S. & Lilavois, N. (2002). Technologies for education: A practical guide, reference sources in science and technology series, (ed 4). New York: Libraries Unlimited.
- Cheng, I., Safont, L.V. & Basu, A. (2009). Multimedia in education: Adaptive learning and testing. New Jersey: World Scientific Pub Co Inc.
- Collins, J., Hammond, M. & Wellington, J.J. (1997). Teaching and learning with multimedia. London: Routledge.
- D'Antoni, S. & Savage, C. (Eds) (2009). Open educational resources: Conversations in cyberspace. New York: United Nations Educational, Scientific and Cultural Organization.
- Ehlers, U.D. & Schneckenberg, D. (Eds) (2010). Changing cultures in higher education: Moving ahead to future learning. London: Springer.
- Goswamy, B.P. (2006). Shaikshik takniki evam kaksha-kaksh prabandh. Delhi: Swati Publication.
- Jonassen, D.H. (Ed) (2003). Learning to solve problems with technology: A constructivist perspective, (ed 2). California: Merrill.
- Joyce, B.R., Weil, M. & Calhoun, E. (2009). Models of teaching, alternative e-text formats series, (ed 8). Boston: Pearson/Allyn and Bacon Publishers.
- Kanvaria, V.K. & Kukreja, D. (2018). Educational cyberspace: The prospects for higher education in India. In S.K. Panda (Ed.) Higher education in India: Opportunities and challenges (150-163). Delhi: Ankit Publications.
- Kanvaria, V.K. & Suraj, M.T. (2023). Education and HR management in the age of artificial intelligence: An overview of available tools. In S. Lodha, N. Joshi & S. Gaikwad (Eds.) Emerging technologies in business management (220-229). New Delhi: Bloomsbury Publishing.

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- Kanvaria, V.K. & Yadav, A. (2023). Augmented reality: Prospects for environmental science education. In C.Y. Patil, N.V. Mahale & S.M. Ingole (Eds.) Recent trends in humanities, social sciences, sciences and commerce, vol 1 (65-67). Pune: Jyotikiran Publication.
- Kanvaria, V.K. & Yadav, A. (2023). Moving towards education for sustainable development 2030: Issues and trends in India. In M. Maheshwari, A.K. Gupta, A. Kumar & P. Gaur (Eds.) India's diamond era: Moving towards sustainable and inclusive growth (48-57). Delhi: Renova International Publications.
- Kanvaria, V.K. & Yadav, A. (2023). Revolutionizing education in India through digital initiatives: Trends and future possibilities. European Chemical Bulletin (Scopus).
- Kanvaria, V.K. (2014). A comprehension on educational technology and ICT for education. GBO: Delhi.
- Kanvaria, V.K. (2021). Digitalization in education: A shift in learning, teaching and pedagogue-development. In S. Pal, T.Q. Cuong, & R.S.S. Nehru (Eds.) Digital education pedagogy: Principles and paradigms (23-48). USA: Apple Academic Press (Taylor and Francis Group).
- Kanvaria, V.K. (2023). Digital learning and teaching: An innovative strategy for quality learning. In B. N. Panda (Ed.) Digital learning: An innovative strategy for quality learning. Bhubaneswar: RIE (NCERT).
- Kanvaria, V.K., Yadav, A. & Monika. (2023). Augmented reality and virtual reality. Bangalore: Archers and Elevators Publishing House.
- Leonard, D.C. (2002). Learning theories: A to Z. Westport: Greenwood Publishing Group.
- Mayer, R.E. (2009). Multimedia learning, (ed 2). New York: Cambridge University Press.
- Mishra, S. & Sharma, R.C. (Eds) (2005). Interactive multimedia in education and training. London: IGI.
- OET (2000). E-learning: Putting a world-class education at the fingertips of all children: The national educational technology plan. Office of Educational Technology, US Department of Education. New York: Diane Publishing.
- Pathak, R.P. (2007): Shaikshik prodyogiki ke naye aayaam. Delhi: S.M. Books.
- Roblyer, M.D. (2007). Integrating educational technology into teaching, (ed 4). Delhi: Pearson Education India.
- Saxena, P.K. (2008): Shaikshik prodyogiki evam kaksha prabandh. Delhi: KK Publications.
- Sharma, S. & Gupta, N. (2007): Shaishik takniki evam kaksha kaksh prabandhan. Jaipur: Shyam Prakashan.
- Singh, Y.K., Sharma, T.K. & Upadhyay, B. (2008). Education technology: Teaching learning. New Delhi: APH Publishing.
- Solomon, G. & Schrum, L. (2007). Web 2.0: New tools, new schools. Washington: International Society for Technology in Education.
- Spencer, K. (1991). The psychology of educational technology and instructional media. Liverpool: United Writers Press.
- Timothy J.N., Donald A.S., James D.L., & James D.R. (2010). Educational technology for teaching and learning, (ed 4). Noida: Pearson Education.

Teaching Learning Resources (Digital and others):

UNESCO Website, NCERT Website, MoE Website, UGC Website, NCTE Website and various other relevant websites

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Teaching Learning Process

The course will be taught through interactive pedagogic methods such as classroom discussion, debates, film discussions, critical media analysis, collaborative learning tasks which enhance reading comprehension of core writings in the area and innovative projects. Reflective expression and learning will be encouraged.

Assessment Method

The assessment will be formative in nature and will factor in student participation. Individual and group tasks and assignments will be given. Summative evaluation will be done through end-semester examination.

Key words: Modern Educational Technology, Augmented Reality and Virtual Reality in Education, Artificial Intelligence in Education, Recent Trends in Education

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