M.Ed. –SEMESTER-II

Paper CC8: EDUCATIONAL TECHNOLOGY AND ICT

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Unit-III, Chapter-2

Dear Students,

We will start our chapter-2 of Unit –III**, Technology supported instruction.**

Technology Supported Instruction

Technology Integration

Why Do We Need Technology Integration

Technology is a ubiquitous part of children's lives. It is transparent. Most homes have connected computers or Internet-enabled devices. As prices of technology drop, computers and digital devices may replace television as we know it. When pioneering educational technology advocate Jan Hawkins wrote an essay in 1997,

"The World at Your Fingertips: Education Technology Opens Doors," about how technology brings the tools of empowerment into the hands and minds of those who use them, she couldn't have known her words would be even more relevant today.

Now, walk into a classroom. Are there computers and if so, how are they being used? Are they being used at all? Technology has revolutionized the way we think, work, and play. Technology, when integrated into the curriculum, revolutionizes the learning process. More and more studies show that technology integration in the curriculum improves students' learning processes and outcomes. Teachers who recognize computers as problem-solving tools change the way they teach. They move from a behavioral approach to a more constructivist approach. Technology and interactive multimedia are more conducive to project-based learning. Students are engaged in their learning using these powerful tools, and can become creators and critics instead of just consumers.

Another reason for technology integration is the necessity of today's students to have 21st century skills.

These 21st century skills include

- personal and social responsibility

- planning, critical thinking, reasoning, and creativity

- strong communication skills, both for interpersonal and presentation needs

- cross-cultural understanding

- visualizing and decision making

- knowing how and when to use technology and choosing the most appropriate tool for the task

Why Integrate Technology into the Curriculum

 The Reasons Are Many –

"Integrating technology into classroom instruction means more than teaching basic computer skills and software programs in a separate computer class.

Effective tech integration must happen across the curriculum in ways that research shows deepen and enhance the learning process. In particular, it must support four key components of learning: active engagement, participation in groups, frequent interaction and feedback, and connection to real-world experts."

Technology helps change the student/teacher roles and relationships: students take responsibility for their learning outcomes, while teachers become guides and facilitators. Technology lends itself as the multidimensional tool that assists that process. For economically disadvantaged students, the school may be the only place where they will have the opportunity to use a computer and integrate technology into their learning.

There is a growing body of evidence that technology integration positively affects student achievement and academic performance. The Center for Applied Research in Educational Technology (CARET) found that, when used in collaborative learning methods and leadership that is aimed at improving the school through technology planning, technology impacts achievement in content area learning, promotes higher-order thinking and problem solving skills, and prepares students for the workforce.

What Is Successful Technology Integration

Well-integrated use of technology resources by thoroughly trained teachers makes twenty-first-century learning possible.

Technology integration is the use of technology resources -- computers, mobile devices like smart phones and tablets, digital cameras, social media platforms and networks, software applications, the Internet, etc. -- in daily classroom practices, and in the management of a school. Successful technology integration is achieved when the use of technology is:

- Routine and transparent
- Accessible and readily available for the task at hand
- Supporting the curricular goals, and helping the students to effectively reach their goals

When technology integration is at its best, a child or a teacher doesn't stop to think that he or she is using a technology tool -- it is second nature. And students are often more actively engaged in projects when technology tools are a seamless part of the learning process.

Defining Technology Integration

Before we can discuss how to shift our pedagogy or the role of the teacher in a classroom that is integrating technology, it is important to first define what "technology integration" actually means.

Seamless integration is when students are not only using technology daily, but have access to a variety of tools that match the task at hand and provide them the opportunity to build a deeper understanding of content. But how we define technology integration can also depend on the kinds of technology available, how much access one has to technology, and who is using the technology. For instance, in a classroom with only an interactive whiteboard and one computer, learning is likely to remain teacher-centric, and integration will revolve around teacher needs, not necessarily student needs. Still, there are ways to implement even an interactive whiteboard to make it a tool for your students.

Willingness to embrace change is also a major requirement for successful technology integration. Technology is continuously, and rapidly, evolving. It is an ongoing process and demands continual learning.

"Effective integration of technology is achieved when students are able to select technology tools to help them obtain information in a timely manner, analyze and synthesize the information, and present it professionally. The technology should become an integral part of how the classroom functions -- as accessible as all other classroom tools." -- National Educational Technology Standards for Students, International Society for Technology in Education

When effectively integrated into the curriculum, technology tools can extend learning in powerful ways. These tools can provide students and teachers with:

- Access to up-to-date, primary source material

- Methods of collecting/recording data

- Ways to collaborate with students, teachers, and experts around the world

- Opportunities for expressing understanding via multimedia

- Learning that is relevant and assessment that is authentic

- Training for publishing and presenting their new knowledge

Types of Technology Integration

It is sometimes difficult to describe how technology can impact learning because the term "technology integration" is such a broad umbrella that covers so many varied tools and practices; there are many ways technology can become an integral part of the learning process. Just a few of these ways are listed below -- but new technology tools and ideas emerge daily.

Online Learning and Blended Classrooms

While online learning gains attention around the world many teachers are also exploring blended learning -- a combination of both online and face-to-face education. Blending learning keeps the student attentive, alert and active as they already have some idea about the topic which teacher will take on in the class. The students remain motivated in the class. Good technology integration isn't about using the fanciest tool, it's about being aware of the range of options and picking the right strategy—or strategies—for the lesson at hand.

Project-Based Activities Incorporating Technology

Many of the most rigorous projects are infused with technology from start to finish. In effective project-based learning (PBL) experiences, students are actively engaged in decision-making, confidently manage their team's shared accountability, and develop quality products and performances. PBL is a great structure for students to practice collaboration within teams. Done well, group

work guides team members to help each other understand the content and tackle complex tasks that build deep knowledge of core concepts.

Problems occur when some students do most of the work and other students remain inactive. Three strategies for supporting students in working together effectively are establishing guidelines that include roles and responsibilities, provide criteria and logistical checklists for each role and coach students on how to collaborate.

Game-Based Learning and Assessment

There has been a lot of buzz about the benefits of incorporating simulations and game-based learning activities into classroom instruction. Game-Based Learning demands a "need to know" the content. Instead of pre-teaching, the instructor teaches the material or facilitates the learning of material as students are engaged in the quests. The overall theme and mission is presented to the students, along with the quests and boss levels in order to create engagement to accomplish. During the boss level, revision or addition skills may also need to be taught, but again, there is a need to learn those skills and content.

Learning with Mobile and Handheld Devices

Once widely dismissed as distractions, devices like cell phones, mp3 players, and tablet computers are now being used as learning tools in forward-thinking schools. Speaking of computers, they were supposed to be the transformation of teaching and learning as we know it. In some ways there has been a transformation, but the basics of teaching and learning have remained unchanged. Perhaps, the iPad are the tool that really does transform classroom practice.

The iPad has a number of unique features that provide for interesting possibilities in teaching and learning. The motion sensor of the iPad has a number of intriguing applications to learning. As a completely portable learning tool, the iPad camera allows documentation to be taken to a whole different level. An app called [Field

[Notes LT](#) not only allows students to take copious notes of their observations, it attaches the date, time, GPS location and photographs of what is observed. These notes can be instantly shared, collaborated, and published in the field.Students can also attach videos, and voice recordings to their field notes

Instructional Tools like Interactive Whiteboards and Student Response Systems

In many schools, the days of green chalkboards are over. These days teachers are using instructional tools like interactive whiteboards and student response systems.

Accessing Web-based software (such as Google Earth) and other Web resources further expands the potential for using interactive whiteboards in class. Interactive whiteboards provides teachers a lot of options like:

- Digital storytelling.

- Creating, viewing, and annotating student PowerPoint and multimedia presentations in real time.

- Showing streamed or downloaded videos.

- Using online map and satellite imagery to teach geography.

- Displaying artwork or online museum presentations.

- Demonstrating moviemaking techniques.

- Viewing and analyzing competitive sports and physical education activities.

- Teaching students how to conduct research on the Internet.

- Working collaboratively on writing and editing exercises, math lessons, and science experiments.

- Instructing the class on the use of a software program, keyboarding

Teaching has long been a magnet for new ideas and new technology. And why shouldn't it be? From flash cards to flash drives, tools that bring learning to life and engage students are welcome additions to any classroom.Now joining that wish list are classroom response systems (CRS) -- also known as classroom performance systems -- with names like-

[EduGame!,](link) [einstruction,](link) [Interwrite Learning,](link) [Qwizdom,](link) and [Smartroom.](link)

The goal is to transform abstract learning into a hands-on experience through the use of remote-control-like clicker devices. The clickers -- which usually come in two varieties, radio frequency or infrared -- allow each student to individually answer questions projected onto an overhead screen. As the lesson proceeds, a receiving device and software installed on a classroom laptop tabulate and aggregate the answers. The teacher can then display the results as graphs for all to see.

Web-Based Projects, Explorations, and Research

One of the first, and most basic, ways that teachers encouraged kids to use technology was with online research, virtual field trips, and web quests. Teachers should turn their classroom into a gateway for learning about the world. By using online resources and new media tools for connecting, teachers will help their students see themselves as global citizens.

One of the fastest ways to expand your students' horizon is simply to connect your class with students who live somewhere else in the world. Once you find a partner, host informal get-acquainted videoconferences between your classes using [Skype](link) and a webcam

Student-Created Media like Podcasts, Videos, or Slideshows

One of the central ideas of digital or media literacy is that students should be come creators and critics, not just consumers, of media. Collaborative Online Podcasts are simply audio recordings stored as MP3 files or in another file format. The creator syndicates the recording via the Internet, and the listener plays it using a digital music player on a computer or a mobile device, such as an iPod.

Though the term podcasting combines iPod and broadcasting, however, you don't need a portable MP3 player to create or distribute the audio files. Teachers can even burn the audio files onto CDs so that students who lack iPods or computers at home have access to the material.

When used educationally, podcasts can empower students and teachers to become content producers rather than content consumers, and they can give them audiences beyond the classroom. Student-created podcasts reinforce course concepts, develop writing skills, hone speaking ability, and even help parents stay current on classroom activities.

Communication and the sharing of ideas should take on larger significance in the work world; teachers and students learn to be information artisans -- people who can creatively and artistically reshape information and raw material into compelling information products.

Those information products may take the form of blogs, podcasts, video games, or virtual worlds -- whatever medium is best suited to the learning objectives. School facilities and assessment methods will have to change to embrace the shift, though. Libraries should evolve into digital workshops where students produce multimedia content. In turn, new rubrics will emerge to evaluate students' multimedia work.

Tools like Wikis or Google Docs

Connecting with others online can be a powerful experience, both for teachers and for students. Wikis are Web sites that can be instantly and easily edited by anyone the wiki owner chooses to allow (in the case of Wikipedia, everyone in the world). The teachers who first used them a few years ago started simply by posting assignments and information for their students. Now, the trailblazers use them to create living, breathing classrooms online.

 Wiki is a place to organize group work where everyone can see and contribute to it. A wiki can hold any kind of media -- text, images, videos, or diagrams. The intangible part is that it allows for asynchronous cooperation, so one student can work on a group project in the afternoon, one in the evening, and one at night,

and each will build on what the previous one did. Unbound from fixed meeting times, each team member contributes when she's at her best.

Personal Learning Networks are Virtual Lockers for School kids. Students drive their education with custom-made Web pages equipped with RSS feeds. PLN becomes a student's virtual locker, and its content changes based on the student's current course work. When teacher assign them a term paper, the students comb the Web to sign up for information that will feed into their personalized Web page to construct a PLN for that topic. When they get a new project, they assemble another page.

Constructing a PLN is the essential skill that moves my students into the driver's seat of their own learning. It helps them sort through and manage the proliferation of online materials that jam the information superhighway. I think the ability to create a PLN is fundamental information-management skills that will help students succeed in the future.

Using Social Media to Engage Students

Though social media tools are still blocked in many schools, students around the world spend vast amount of time on social networks outside of school. Teachers should guide students to use social media for educational purpose. It is the foremost responsibility of the teachers that they motivate their students for using social media for good cause. We are struggling once again in education to keep up with the pace of a drastically changing society. Outside of schools, social media outlets are THE way that people now communicate. We need to stop talking cyber bullying and start talking cyber citizenship. Flip to the positive.

 Our focus in schools needs to shift towards responsible, positive use of social media. The giant elephant darting about in the shadows needs to be drug into the light. In a world where this type of communication is king amongst our students, we need to stop ignoring and blocking and start embracing and amplifying.

It is quickly becoming our duty as educators in the 21st century to guide our students towards responsible use of social media. We teach sex ed, we teach healthy living, we teach about drugs, we teach character ed., and on and on. We

do these things each and every day, yet we are ignoring the aspect of our students' lives that is larger than all of these things (and completely interconnected with them as well). It is our duty to our students to start modeling responsible use of social media and encouraging them to follow our lead. We can no longer afford the veil.

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