

## USE OF MULTIMEDIA, ONLINE LEARNING & HYBRID LEARNING IN EDUCATION

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### Abstract:-

*Multimedia simply combines these elements into a powerful new tool, especially in the hands of teachers and students. Interactive multimedia weaves five basic types of media into the learning environment: text, video, sound, graphics and animation. Since the mode of learning is interactive and not linear, a student or teacher can choose what to investigate next. For example, one does not start on the first page of a linear document and read to the end. Interactive multimedia learning mode is more like constructing a spider's web, with one idea linked to another, allowing choices in the learner's path.*



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**Key words:-** Multimedia, Online learning & Hybrid learning, Higher Education, Elements of Multimedia in Education, Top Online Learning Sites

### Introduction:-

**Multimedia** combines five basic types of media into the learning environment: text, video, sound, graphics and animation, thus providing a powerful new tool for education.



**Online learning** is education that takes place over the Internet. It is often referred to as “e-learning” among other terms. However, online learning is just one type of “distance learning” - the umbrella term for any learning that takes place across distance and not in a traditional classroom. Distance learning has a long history and there are several types available today, including: -

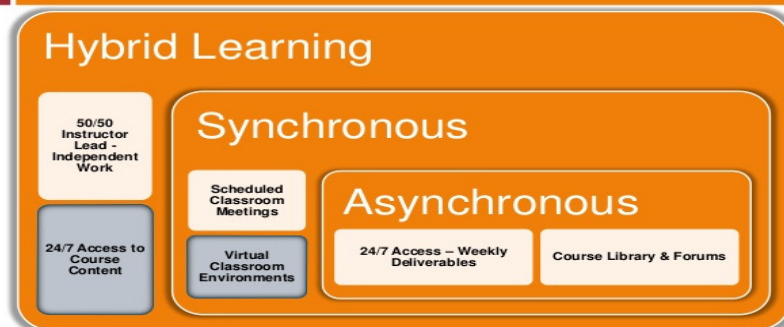
- Correspondence Courses:- conducted through regular mail with little interaction.
- Telecourses: where content is delivered via radio or television broadcast.
- CD-ROM Courses: where the student interacts with static computer content.
- Online Learning: Internet-based courses offered synchronously and/or asynchronously.
- Mobile Learning: by means of devices such as cellular phones, PDAs and digital audio players (iPods, MP3 players).



### Hybrid Learning:-

Defining hybrid or blended education is a trickier task than one might think—opinions vary wildly on the matter. In a report on the merits and potential of blended education, the Sloan Consortium defined hybrid courses as those that **“integrate online with traditional face-to-face class activities in a planned, pedagogically valuable manner.”** Educators probably disagree on what qualifies as “pedagogically valuable,” but the essence is clear: Hybrid education uses online technology to not just supplement, but transform and improve the learning process.

## Hybrid Learning Model



### **The Elements of Multimedia in Education:-**

A *Multimedia Learning* environment involves a number of components or elements in order to enable learning to take place. Hardware and software are only part of the requirement. As mentioned earlier, multimedia learning integrates five types of media to provide flexibility in expressing the creativity of a student and in exchanging ideas (See Figure 1).

#### ***Text***

Out of all of the elements, text has the most impact on the quality of the multimedia interaction. Generally, text provides the important information. Text acts as the keystone tying all of the other media elements together. It is well written text that makes a multimedia communication wonderful.

#### ***Sound***

Sound is used to provide emphasis or highlight a transition from one page to another. Sound used creatively, becomes a stimulus to the imagination; used inappropriately it becomes a hindrance or an annoyance. For instance, a script, some still images and a sound track, allow students to utilize their own power of imagination without being biased and influenced by the inappropriate use of video footage. A great advantage is that the sound file can be stopped and started very easily.

#### ***Video***

Video can stimulate interest if it is relevant to the rest of the information on the page, and is not 'overdone'. Video can be used to give examples of phenomena or issues referred to in the text. For example, while students are reading notes about a particular issue, a video showing a short clip of the author/teacher emphasizing the key points can be inserted at a key moment; alternatively, the video clips can be used to tell readers what to do next.

#### ***Animation***

Animations are primarily used to demonstrate an idea or illustrate a concept. Video is usually taken from life, whereas animations are based on drawings. There are two types of animation: Cel based and Object based. Cel based animation consists of multiple drawings, each one a little different from the others. When shown in rapid sequence, for example, the operation of an engine's crankshaft, the drawings appear to move.

#### ***Graphics***

Graphics provide the most creative possibilities for a learning session. They can be photographs, drawings, graphs from a spreadsheet, pictures from CD-ROM, or something pulled from the Internet. With a scanner, hand-drawn work can be included. Standing commented that, "the capacity of recognition memory for pictures is almost limitless". The reason for this is that images make use of a massive range of cortical skills: color, form, line, dimension, texture, visual rhythm, and especially imagination.



**Reasons to Use Multimedia in the Classroom:-**

1. Facilitate and develop a community of learners through online ice-breaker activities.
2. Help students visualize difficult concepts or procedures more easily by using static or dynamic multimedia.
3. Scaffold learning through activities enhanced by videos and online games.
4. Make language and culture come alive through the viewing and creation of audio and video instruction.
5. Provide a “menu” of authentic assignment options for students to complete, allowing them to explore and identify their passions and talents.
6. Enhance accessibility through the use of powerful multimedia software tools.
7. Enable visualization of concepts and their connections through collaborative construction and discussion of concept maps.
8. Encourage collaboration and feedback by integrating assignments with tools that support conversations and comments.
9. Make learning situated and personal with easy to access information from you and the rest of the world.
10. Help students document and present their learning through authentic assessments.

**50 Top Online Learning Sites:-**

Many of these sites offer free lessons; some require payment or offer verified certification for a nominal fee. Some sites offer very general non-academic lessons, others provided actual college / university curriculum course material. Whatever you are looking to learn, check out the list below before trying to wade through pages of search engine listings.

**Art and Music**

- Dave Conservatoire — Dave Conservatoire is an entirely free online music school offering a self-proclaimed “world-class music education for everyone,” and providing video lessons and practice tests.
- Drawspace — If you want to learn to draw or improve your technique, Drawspace has free and paid self-study as well as interactive, instructor-led lessons.
- Justin Guitar — The Justin Guitar site boasts over 800 free guitar lessons which cover transcribing, scales, arpeggios, ear training, chords, recording tech and guitar gear, and also offers a variety of premium paid mobile apps and content (books/ ebooks, DVDs, downloads).

### **Math, Data Science and Engineering**

- Codecademy — Codecademy offers data science and software programming (mostly Web-related) courses for various ages groups, with an in-browser coding console for some offerings.
- Stanford Engineering Everywhere — SEE/ Stanford Engineering Everywhere houses engineering (software and otherwise) classes that are free to students and educators, with materials that include course syllabi, lecture videos, homework, exams and more.
- Big Data University — Big Data University covers Big Data analysis and data science via free and paid courses developed by teachers and professionals.
- Better Explained — BetterExplained offers a big-picture-first approach to learning mathematics — often with visual explanations — whether for high school algebra or college-level calculus, statistics and other related topics.

### **Design, Web Design/ Development**

- HOW Design University — How Design University (How U) offers free and paid online lessons on graphic and interactive design, and has opportunities for those who would like to teach.
- HTML Dog — HTML Dog is specifically focused on Web development tutorials for HTML, CSS and JavaScript coding skills.
- Skillcrush — Skillcrush offers professional web design and development courses aimed at one who is interested in the field, regardless of their background — with short, easy-to-consume modules and a 3-month Career Blueprints to help students focus on their career priorities.
- Hack Design — Hack Design, with the help of several dozen designers around the world, has put together a lesson plan of 50 units (each with one or more articles and/or videos) on design for Web, mobile apps and more by curating multiple valuable sources (blogs, books, games, videos, and tutorials) — all free of charge.

### **General – Children and Adults**

- Scratch – Imagine, Program, Share — Scratch from MIT is a causal creative learning site for children, which has projects that range from the solar system to paper planes to music synths and more.
- Udemy — Udemy hosts mostly paid video tutorials in a wide range of general topics including personal development, design, marketing, lifestyle, photography, software, health, music, language, and more.
- E-learning for kids — E-learning for Kids offers elementary school courses for children ages 5-12 that cover curriculum topic including math, science, computer, environment, health,

language, life skills and others.

- Ed2go — Ed2go aims their “affordable” online learning courses at adults, and partners with over 2,100 colleges and universities to offer this virtual but instructor-led training in multiple categories — with options for instructors who would like to participate.
- GCF Learn Free — GCFLearnFree.org is a project of Goodwill Community Foundation and Goodwill Industries, targeting anyone look for modern skills, offering over 1,000 lessons and 125 tutorials available online at anytime, covering technology, computer software, reading, math, work and career and more.
- SchoolTube — SchoolTube is a video sharing platform for K-12 students and their educators, with registered users representing over 50,000 schools and a site offering of over half a million videos.
- creativeLIVE — CreativeLive has an interesting approach to workshops on creative and lifestyle topics (photography, art, music, design, people skills, entrepreneurship, etc.), with live access typically offered free and on-demand access requiring purchase.

#### General College and University

- MIT Open Courseware — MIT OpenCourseWare is the project that started the OCW / Open Education Consortium [<http://www.oecconsortium.org>], launching in 2002 with the full content of 50 real MIT courses available online, and later including most of the MIT course curriculum — all for free — with hundreds of higher ed institutions joining in with their own OCW course materials later.
- Open Yale Courses — Open Yale Courses (OYC) are free, open access, non-credit introductory courses recorded in Yale College’s classroom and available online in a number of digital formats.
- Open Learning Initiative — Carnegie Mellon University’s (CMU’s) Open Learning Initiative (OLI) is course content (many open and free) intended for both students who want to learn and teachers/ institutions requiring teaching materials.
- Khan Academy — Khan Academy is one of the early online learning sites, offering free learning resources for all ages on many subjects, and free tools for teachers and parents to monitor progress and coach students.
- MIT Video — MITVideo offers over 12,000 talks/ lecture videos in over 100 channels that include math, architecture and planning, arts, chemistry, biological engineering, robotics, humanities and social sciences, physics and more.
- Stanford Online — Stanford Online is a collection of free courses billed as “for anyone, anywhere, anytime” and which includes a wide array of topics that include human rights, language, writing, economics, statistics, physics, engineering, software, chemistry, and more.



- Canvas Network — Canvas Network offers mostly free online courses source from numerous colleges and universities, with instructor-led video and text content and certificate options for select programs.

### IT and Software Development

- Udacity — Udacity offers courses with paid certification and nanodegrees — with emphasis on skills desired by tech companies in Silicon Valley — mostly based on a monthly subscription, with access to course materials (print, videos) available for free.
- Apple Developer Site — Apple Developer Center may be very specific in topics for lessons, but it's a free source of documentation and tutorials for software developers who want to develop apps for iOS Mobile, Mac OS X desktop, and Safari Web apps.
- Google Code — As with Apple Developer Center, Google Code is topic-narrow but a good source of documentation and tutorials for Android app development.
- Code.org — Code.org is the home of the “Hour of Code” campaign, which is aimed at teachers and educators as well as students of all ages (4-104) who want to teach or learn, respectively, computer programming and do not know where to start.
- Mozilla Developer Network — MDN (Mozilla Developer Network) offers learning resources — including links to offsite guides — and tutorials for Web development in HTML, CSS and JavaScript — whether you're a beginner or an expert, and even if you're not using Mozilla's Firefox Web browser.
- Learnable — Learnable by Sitepoint offers paid subscription access to an ebook library of content for computers and tablets, and nearly 5,000 videos lessons (and associated code samples) covering software-related topics – with quizzes and certification available.
- Pluralsight — Pluralsight (previously PeepCode) offers paid tech and creative training content (over 3,700 courses and 130K video clips) for individuals, businesses and institutions that covers IT admin, programming, Web development, data visualization — as well as game design, 3D animation, and video editing through a partnership with Digital-Tutors.com, and additional software coding lessons through Codeschool.com.
- CodeHS — CodeSchool offers software coding lessons (by subscription) for individuals who want to learn at home, or for students learning in a high school teacher-led class.
- Aquent Gymnasium — Gymnasium offers a small but thorough set of free Web-related lesson plans for coding, design and user experience, but filters access by assessing the current knowledge of an enrollee and allows those with scores of at least 70% to continue

### The Hybrid Learning Trends - Higher Education:-

Over the past few years, education has seen the rise of a hybrid method of learning that combines traditional face-to-face approach with tech-powered e-learning. **Both students and**

educators have agreed on the efficiency and benefits of blended learning method since it combines the best of both worlds allowing less costly, time-saving and more personalized ways of knowledge acquisition.

The shift the blended learning brought to higher education presents an ongoing process that is continually reshaping the learning process, as a result, several blended learning trends that define higher education of today.

### 1. Ease Of Access

Firstly, a blended learning system provides several learning models such as flex, self-blend, rotation, and enriched-virtual that could easily meet the needs of any personal student requirement. Therefore, resources students can choose from various methods of digital and face-to-face delivery in order to incorporate quality education with their time and space resources.



### 2. Interactive Pedagogy

Secondly, blended approach to learning managed to cause better student engagement which is more difficult to achieve in a traditional classroom. Fast development of Learning Management System platforms and features results in various means to encourage students to take a more active role and employ individual approach in the process of knowledge acquisition, thus creating opportunities for better student collaboration.

### 3. The Rise In The Development Of Functional Learning Management System Features



With the more cost effective alternatives to enterprise Learning Management System software, such as WordPress web development tools and availability of free resources for



setting up an education website, it is becoming easier for local schools and individual tutors to build a great site with minimum investments.

#### 4. Cost Effectiveness

One of the most significant quality of this particular trend in blended learning is that it works both ways, meaning that both users and providers of the program can experience cost savings. Students could benefit from reduced transport costs. As for universities, cost effectiveness is achieved through much faster and more effective access to global market as well as by reductions in the physical space requirements.

#### 5. Improved Academic Achievement



*Finally, with the benefits of blended learning method such as time/space flexibility and a variety of appropriate learning models which result in better academic achievement, more interaction is being created constantly.* Furthermore, this scenario provides tutors and teaching specialists with enough resources to work with smaller groups of students during in-person sessions thus utilizing the time much more efficiently, which, ultimately leads to considerably greater learning satisfaction, and consequently enhances students' overall performance.

#### Conclusion:-

The technology needed to support classroom teaching has increased in complexity. Until only a few years ago all that a lecture room needed were some seats for the students, and a blackboard and a lectern or table for the teacher. Then came the overhead projector, slide projector and the return of TV with video player. Now there is the computer, networks and related display tools. From having a next to zero maintenance cost, the teaching room is becoming not only costly to equip, but costly to run and maintain, including the escalating costs of security. Figure 2 shows a typical multimedia based educational environment. The main teaching spaces are equipped with a standard set of presentation equipment, and full details of what is, and is not, available in each room. Multimedia offers the lecturer many benefits including: satisfying educational objectives, increasing students understanding, demonstrating events, showing places, conducting experiments which would otherwise be impossible. Sharing of multimedia outputs is done carefully such that it will not disturb

other learners working in the same classroom! Not only may a number of students be performing similar activities at the same time on a network, the lecturer must decide whether to control the activities via the media of the computer. The use of multi-party desktop conferencing with the lecturer chairing the running of the conferencing session, showing selected parts of a video is a case in point.

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