

Identifying and Analyzing the Best Software Platforms for Innovative Teaching and Learning Process

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Abstract: *Technology can be used to encourage global teaching-learning process, support to create innovative learning environment and build relationships between all stakeholders of education system. Educators need to find ways to connect students from different parts of the world so that they can learn simultaneously, exchange knowledge and develop cultural understanding and relationships. Problem based, project based, Model-making, audio-visual presentations, role-playing activities and exploring the physical world help to deliver the message of classroom lessons in a more interesting and effective manner through virtual mode. An innovative environment is one that is capable of progressing and adapting as educational practices enhance, evolve and change – thus residual forthcoming intensive. An innovative learning environment includes the physical, social, and pedagogical context in which learning occurs. An innovative environment is one that is capable of evolving and adapting as educational practices evolve and change – thus remaining future focused.*

Here in this paper researcher is identifying and analyzing the best software platforms for innovative teaching and learning process. A learning environment includes the physical, social, and pedagogical context in which learning occurs. An innovative environment supports strengths-based teaching and learning. It offers students and teachers flexibility, agency, ubiquity, and connectedness. Working in an innovative learning environment where teaching and learning is collaborative, reflections and inquiries are shared, and communities engaged leads to a more robust, continuously improving community of practice.

Keyword: Innovative Teaching-Learning Environment, Digital and Virtual Learning Systems (SVLS) Digital and Virtual Teaching Systems (DVTS)

1. Innovative Teaching Process (ITP)

The history of virtual learning environment goes back to as early as the 1700s when lessons were sent weekly to the interested audiences by mail in the US. The correspondence used to be in writing. It was the University of Wisconsin – Madison that first used the term “distance education” in 1892. Later, the University of Houston offered its first college course in 1953 on public television in the United States. The live telecasts aired for 13-15 hours each week at night so that working students could watch the classes.

In 1969, the US Department of Defense commissioned ARPANET – a packet switching network to implement TCP/IP (the foundation technologies of the internet). In 1970, the Havering Computer Managed Learning System was developed in London, and over 100 teachers and 10,000 students were using it by 1980. In 1984, the faculty and students at the University of Waterloo developed applications together by using networked IBM PCs.

Innovation in education encourages teachers and students to explore, research and use all the tools to uncover something new. It involves a different way of looking at problems and solving them. Innovation improves education because it compels students to use a higher level of thinking to solve problems. The thinking process that goes into it will help students develop their creativity and their problem solving skills. Another innovative method of teaching involves encouraging student collaboration for various projects. Teachers can help foster this skill in the classroom by allowing students to learn, study and work in groups. There are many new technologies being used in classrooms today: social networking, online teaching, class blogs and wikis, podcasting, interactive whiteboards, and mobile devices. There are many ways in which we can benefit from the new technologies being developed today.

Innovative Teaching Strategies that Improve Student Engagement Inquiry-Based Learning. Inquiry-based learning is one of the most powerful teaching strategies in the classroom because research tells us that students learn best when they construct their own meaning.

The Top 6 Technology Innovations for Education

- Virtual Reality (VR) in Education
- Artificial Intelligence and Machine Learning
- Cloud Computing for Education
- 3D Printing
- Social Media in Educational Institutions
- Cyber security

Here are some innovative teaching strategies which every teacher can embrace and make their teaching way more interesting-

- **Teaching through Smart Boards**
- **Teaching through Flipping Classrooms**
- **Teaching through collaboration**
- **Teaching through Virtual Reality**
- **Teaching through 3D printing technology**
- **Teaching through Cloud Computing**

The use of technology in the classroom helps to engage the students with different kinds of stimuli and creates an environment of activity-based learning. It makes the content of the classroom more interesting and makes learning fun. For teachers, technology offers an endless set of resources that they can tap into depending on the need of the students. While this blog lists a few such resources, for a teacher looking for effective teaching methods in a classroom, turning towards the latest technology will offer a vast number of updated solutions.

2. Digital and Virtual Teaching Systems (DVTS)

Digital tools means software and platforms for teaching and learning that can be used with computers or mobile devices to work with text, images, audio, and video. Digital education is the innovative use of digital tools and technologies during teaching and learning, and is often referred to as Technology Enhanced Learning. A digital learning platform is a piece of software designed to heavily assist during the educational process. They include: learning management systems (LMS), learning content management systems (LCMS), as well as virtual classroom tools and virtual learning environments (VLE). Any classroom imparting education, whether it is about teaching cooking, horticulture, or engineering, is accompanied by technology, and is applying digital methods like computers, e-books, etc. is known as digital classroom.

The Shift to Digital Learning gives many benefits as-

- Personalized learning.
- Expanded learning opportunities
- High engagement learning.
- Competency-based learning
- Assessment for learning
- Collaborative learning
- Quality learning products
- Sharing economy

For teaching online we recommend that you use a headset with noise reduction microphone. Your built-in microphone has more of a tendency to pick up sounds from you typing on the keyboard which can be distracting for the students. Some of the schools do require that you have a LAN connection to your computer.

We have to plan a virtual classroom in the following ways as-

1. Assess the needs and the necessary conditions to satisfy them.
2. Estimate the development cost, effort, and implications.
3. Plan the virtual classroom.
4. Design the virtual classroom.
5. Prepare and distribute contents.
6. Enable communication.
7. Implement online student assessment methods.
8. Implement class management procedures.
9. Classroom Management Software

Education world. One of the biggest factors transforming the methodologies of education is technology. Including technology in education has enabled instant access to knowledge and made learning a fun activity rather than a burden. The teachers of the current era are educating Gen-Z (people born after 1995) - the

generation constantly surrounded by technology. This generation needs everything on their fingertips within a few seconds. Old methods cannot be used to educate this generation. To keep this generation engaged towards learning, teachers need to find innovative ways using technology. Technology plays a major role in imparting education to this generation in an interesting manner. Executing digital methods in teaching can help students to access the information quickly, and grasp the concepts easily. Digital classroom management software not only helps in educating the students in an advanced manner but also facilitates teachers and administrators in the educational sector to streamline their jobs and decision making processes. It even helps parents to communicate with the teachers and stay updated with the teaching and learning methods.

3. Digital and Virtual Teaching Software's

Choosing the best virtual classroom software for your company, school, or organization is a big deal. Of course the solution needs to work as advertised and the price needs to be right, but there are also other less tangible goals like “What solution is going to enable me to teach my learners most effectively?” or “What platform is the easiest to use?” or even “Which virtual classroom software is going to be the most fun for teaching and learning?” The good news is that it's a choice and today, like with so many other markets, the virtual classroom software market is a buyer's market. There are a lot of different options even with virtual classroom software for online teaching so in this post we'll try to narrow down your initial list.

Before we get into how to choose the best virtual classroom software for your organization, it's important for us to clear the air around what virtual classroom software is. I mean, what's the difference between a video conferencing app like Zoom or WebEx and actual virtual classroom software as we discuss below?

Well, you can find a really great breakdown on the eLearning Industry article [Virtual Classrooms vs. Web Conferencing](#). It comes down to purpose. Why do these solutions exist? In web conferencing apps, you can connect from anywhere with your webcam and share your screen. Is that a classroom? Is that the best way to engage your learners? Probably not. Web conferencing apps enable some basic things, but they do not offer the flexibility nor direction of purpose-built tools for online instruction like the best virtual classroom software.

When discussing the difference between video conferencing apps or virtual classroom software, I like to talk about cars. There are many different cars that are great for many different things. If I live in a city, then a subcompact car is perfect for running errands and fitting in parking spots, but if I'm commuting 2 hours each way, then I'd probably opt for a sedan. The point is you want to make sure you are investing in a solution that meets your specific needs.

Choosing the best virtual classroom software-

Will you be teaching several students simultaneously or more one on one lessons? Will you be providing courses for students or training with adults? People in training and development use virtual classroom platforms a lot more nowadays. Instructors in the K-12, higher learning and tutoring spaces have also stepped up their use of online learning platforms. So how do you choose the best virtual classroom software

for your particular purpose? Well, you'll need to understand what is important to you, your facilitators or teachers, and your learners and students. The best way to do this is to first brainstorm with key stakeholders on what you really need to deliver an amazing learning experience. I suggest creating a list of features that you absolutely "must have" along with a list of features that are "nice to have". You can then start comparing some of the virtual classroom software options you come across to see where they land. Once you narrow down your list, you can reach out to each company and try out their virtual classroom software for free. It's incredibly important to test run your preferred virtual classroom software before making a decision.

To help you on your journey, we have compiled a list of the 7 best virtual classroom software solutions in 2019. The list isn't scientific, but we took into account ease of use, pricing and features.

The Best Virtual Classroom Software for Online Teaching

Newrow Smart	Moodle
Vedamo	Udemy
BigBlueButton	TutorRoom
LearnCube	Smartometry
Electa Live	Easyclass
Adobe Connect	ezTalks Webinar
WizIQ	PeopleLink
BrainCert	

Education management tools depend upon sources such as smart classes, virtual lessons and such digital solutions to make interactive learning accessible to even the farthest of situated learners. Learners and knowledge seekers on the other are free to select the best course available that matches their understanding levels and course requirements. While selecting from the list of best virtual classroom software, look for some essential features like HD video, session recording, mobile connectivity and advanced sharing capabilities. These features of online teaching software will help you connect with an increasing number of students online through virtual classroom platforms.

4. Innovative Learning Process (ILP)

Having taught in various grades, and spending years as an academic advisor for new teachers, I've had the chance to spend time in various classroom environments. I've seen many different ways educators approach teaching--from the traditional learning model to some of the most innovative and creative classrooms. For the purpose of this article, I will focus on some of the most creative and innovative areas I've practiced or have seen over the past decade across classrooms. To create an innovative, open, creative and trustworthy place for students to grow, take risks, and feel comfortable in their own patterns of learning, there are a few

key actions teachers can take to create a more innovative and entrepreneurial classroom. The ability for students to connect, grow and innovate not only with class content, but also with each other, the world around them and with me, was the culture I developed in the classroom. I view culture as one of the most critical aspects to invite innovation and make the classroom a safe place to create, ask questions, and fail in order to learn. Teachers create the mood and tone of the room. Positive classroom cultures that invite authentic learning can lead to more opportunities for students to positively connect with content, their peers, and their teacher.

Here are ten ways teachers can create innovative learning spaces.

1. Mindset
2. Self-Reflection
3. Ask Open-Ended Questions
4. Create Flexible Learning Environments
5. Personality Matters: Create A Place For All Learners
6. Use Problem-Finding
7. Let Students Take Risks And Fail
8. Consider A Flipped Classroom Model
9. Invite Entrepreneurs And Innovators Into The Classroom
10. Use The Design-Thinking Process

5. Digital and Virtual Learning Systems (SVLS)

Digital learning is any type of learning that is accompanied by technology or by instructional practice that makes effective use of technology. It encompasses the application of a wide spectrum of practices including: blended and virtual learning.[1]

Digital Learning is sometimes confused with online learning or e-learning, digital learning encompasses the aforementioned concepts.

A digital learning strategy may include any of or a combination of any of the following:

- adaptive learning
- badging and gamification
- blended learning
- classroom technologies
- e-textbooks
- learning analytics
- learning objects
- Mobile learning e.g. Mobile Phones, Laptops, Computers, iPads.
- personalized learning
- online learning (or e-learning)
- open educational resources (OERs)

- technology-enhanced teaching and learning
- virtual reality
- augmented reality

Through the use of mobile technologies, digital learning can be used whilst travelling as mobile technologies gives us this advantage.

A virtual learning environment is an online-based platform that offers students and professors digital solutions that enhance the learning experience. ... Virtual learning environments are often part of a higher education institution's wider learning management system (LMS). Online Learning: This is any form of instruction that takes place over the Internet. It includes Internet-based instruction; remote teacher online instruction; and blended learning and facilitated virtual learning that involves these two virtual learning methods. It excludes computer-based learning. Simple management. Virtual learning environments help teachers to plan lessons, manage administrative work, track students' performance, activity, and level of engagement as well as provide additional materials and support for those who need. Specifically, virtual learning uses computer software, the Internet or both to deliver instruction to students. This minimizes or eliminates the need for teachers and students to share a classroom. ... Remote Teacher Online: Instruction is provided by a teacher, but that teacher is not physically present with the student. Given the range of different systems available, the first step is to outline what your goals are. Identify your specific needs, prepare a list of questions for providers and see which solutions appear to be the best fit for your setting and budget. Personal computers and the Internet have revolutionized entire sectors of American society. Facebook, Twitter, YouTube, Skype and other online communications media have allowed billions of people around the world to share ideas in a matter of seconds, mostly at a very low cost. These advances in computer technology are as remarkable as they are familiar.

But most people are not aware of how computers and Internet technology are transforming the way students learn. This emerging education paradigm is often called “virtual learning,” [*] and it has the potential to improve student achievement, educational access and schools’ cost-effectiveness.

Specifically, virtual learning uses computer software, the Internet or both to deliver instruction to students. This minimizes or eliminates the need for teachers and students to share a classroom. Virtual learning does not include the increasing use of e-mail or online forums to help teachers better communicate with students and parents about coursework and student progress; as helpful as these learning management systems are, they do not change how students are taught.

Virtual learning comes in several forms:

- Computer-Based
- Internet-Based
- Remote Teacher Online
- Blended Learning
- Facilitated Virtual Learning
- Online Learning

Key Tactics to Create an Impactful Virtual Learning Environment

1. Break learning activities into short, video-based modules
2. Build “extracurricular” learning paths
3. Promote employee collaboration & ideation
4. Try gamification on for size
5. Encourage employee feedback
6. Market new skill development offerings internally

Virtual learning is usually associated with online courses or online environments, but it has much broader dimensions. In this article we will discuss its definition, characteristics, and benefits. We have also made for you a list of the most common forms of virtual learning, which describe the different aspects of learning and teaching process. Virtual learning is a learning experience that is enhanced through utilizing computers and/or the internet both outside and inside the facilities of the educational organization. The instruction most commonly takes place in an online environment. The teaching activities are carried out online whereby the teacher and learners are physically separated (in terms of place, time, or both).

Virtual Learning – benefits

- ✓ Remote access to an unlimited array of educational services (topics and tutors) offered worldwide
- ✓ Individualized learning process that takes into consideration the personal level of competence, individual needs, and different learning styles
- ✓ Safe and secure learning environment
- ✓ Flexible learning in terms of time, location, and pace
- ✓ Cost-effectiveness, time-effective, easily scalable

Virtual learning combines all of the above-mentioned terms. It can overcome many drawbacks of the physical environment such as time, facilities, location, etc. Online environments allow teachers to work with larger numbers of students and optimize their routine tasks. Virtual learning also brings new pedagogical techniques into the traditional forms of education and makes learning more personalized and convenient.

6. Digital and Virtual Learning Software's

A virtual classroom is an online learning environment in which students and teachers interact via the technical tools provided by the software. Virtual classroom software is used by educational institutions to host classes remotely while maintaining the functionality available in a traditional classroom environment. A virtual classroom holds real-time lessons remotely while offering the same collaborative tools and level of interaction possible in a physical classroom. Educational institutions utilize virtual classroom software to provide access to students who may not be able to attend in-person courses. Through the virtual classroom environment, teachers can interact with students and students can engage with lesson materials, view presentations and videos, and take tests, all in real time.

Online course providers may either offer virtual classroom software or utilize it to provide their lessons. Virtual classrooms may come as an integrated part of a learning management system (LMS) or integrate with one.

To qualify for inclusion in the Virtual Classroom category, a product must:

- Contain live video streaming capability
- Provide screen sharing
- Contain an online whiteboard feature
- Provide a comprehensive online classroom environment designed for use by educational institutions as well as individual teachers and tutors
- Stream live rich media interactive presentations

Top 10 Virtual Classroom Software

1. Microsoft Team
2. Zoom
3. Cisco Webex Meetings
4. Adobe Connect
5. Schoology
6. Blackboard
7. Panopto
8. Top Hat
9. LearnCube
10. BigBlueButton

Key Benefits/Features of Virtual Classroom Software

- Enables instructors to deliver live online learning experiences to any student with an internet-connected device
- Facilitates online collaboration among students
- Video conferencing

- Video encryption and password protection
- Multimedia presentations
- Whiteboard
- Text chat
- File sharing and storage
- Screen sharing
- Polls and surveys
- Breakout rooms
- Mobile compatibility
- Quizzes
- Hand raise
- Browser-based connectivity
- Real-time code editor

Digital learning tools and resources

There are a plethora of tools and resources online (many that are free) that can be used to create and enhance a digital learning environment. Listed below are resources and tools 21st century teachers can use for digital learning-

1. RSS or Social Readers
2. Google+ Communities
3. YouTube Channels
4. iTunesU
5. Cloud-based Word Processors (i.e. Google Drive)
6. File-sharing platforms (i.e. Dropbox)
7. Evernote
8. Digital Pocket
9. Zotero
10. Video conferencing software (i.e. TrueConf, Zoom, Cisco Webex, Microsoft Teams)

7. Conclusion

Virtual classroom platforms can capture a variety of data about student attendance, engagement, and performance, then compile it into reports or visual dashboards as a real-time analytics of teaching-learning system. An innovative environment is one that is capable of progressing and adapting as educational practices enhance, evolve and change – thus residual forthcoming intensive. An innovative learning environment includes the physical, social, and pedagogical context in which learning occurs. An innovative environment is one that is capable of evolving and adapting as educational practices evolve and change – thus remaining future focused.

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