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CHALLENGES FACED IN ONLINE TEACHING AND LEARNING FOR POST GRADUATE COURSES

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Abstract: To be effective in new way of virtual classes there are certain challenges that are being faced by educators as well as students. In this study we are going to focus on challenge present in higher education during lockdown and suggestion for addressing this concern with agile methods in teaching and learning. Fear of corona infection kept people away from each other. Virtual learning is designed to extend educational experiences. It does not try to replicate them. In virtual learning environments, students access resources and interact in ways they would not in the physical classroom. Online learning is characterized by a structured learning environment, to enhance and expand educational opportunities, providing instruction that is teacher-led is shifted to learner-based, and may be synchronous or asynchronous. building innovative methods in online learning is proving helpful. As traditional face-to-face learning is replaced by virtual there is fear in reopening schools and colleges as mass gatherings can make situation more difficult. Pandemic affected many lives and way of looking at situations. Students have faced challenges in these times such as stress. How we can improve lab-based teaching and learning is objective in this paper.

Index Terms: **agile teaching and learning, pandemic, online learning, lab-based teaching and learning, interactive method**

1. Introduction

In these difficult times that are not foreseen availability resource is challenge which cannot be addressed immediately and this leads to missing opportunities to learn by many students.

Many people lost jobs and are short on money which led to deprive of basic needs in education. Direct contact is not possible and assessing student academic performance is challenge.

The agile teaching/learning is higher education teaching/learning built from practices of software engineering agile methodologies. Today there are many tools and media platforms that are open to students and teachers. Some of them are free and some are paid.

Team work is quality that is part of adapting to needs of learning. Students access to resource is also expanding. Resources such prerecorded lecture videos, presentation process, demonstrations, new learning materials. The new methods of clarification of learning outcomes and evaluation are being developed and issues that can come up with these methods can be solved using agile methods.

Issues related to technical challenge can keep people away from using them.

Technical difficulties that is part of learning process for example installation of app, getting all students follow new strategies and maintain quality of curriculum.

Workplace skills which are require to be make students employable at work also changing. There are two types for evaluating and feedback one is tangible method based on marks and based on body language, one-on-one discussions and allowing time flexibilities to complete assigned task.

Online learning is structured learning environment and agile software development is faster time-to-market and continual integration of new requirements. Flexibility in development practices and software quality. Hence to improve outcomes of online teaching we can incorporate agile methodologies by continuous integration of features based on student's requirements.

Agile is used in organizations from year 2000. We know education sector keeps changing specifically in higher technical education. Agile focuses on dynamic changes and limited planning. These are quality which are required in learning and teaching in online eduction.

2. How agile model can help virtual learning environment (add more paragraph)

1. **Collaboration tools**:

Currently there are apps that are part of virtual teaching and learning such as google meet and Microsoft teams. The student involvement in virtual environments is changed as software gives share screen method to present our material. Educator starts lab by giving instructions and students listen and perform practical simultaneously which can be issue for many students as they are used to face-to-face communication. Maintaining pace while listening and using ide to code in lab session is challenging and students need to turn on mic only if they have query and many times to solve doubts and concerns students get less time or support. Taking notes in virtual session is also challenge as we cannot extend meeting time to take notes. Chat box are used to communicate by students. If multiple chat from multiple students can make reading and attending difficult as some of messages will not deliver in time or may be skipped during reading. When there are more than two people conversing at a time then it can cause noise and difficult to understand.

2. **Features to be added to resolve lab problem faced by post graduate students**

During virtual lab it is important to perform practical and get technical support such as software, hardware version should be match. If switching from meeting app to ide platform during lab can affect learning. Students needs to actively present all the time and be attentive and if in between any instruction missed then rest of practical will also get affected

Involvement: In order to encourage student interaction teaching and learning can follow agile methodology wherein all stakeholders are involved throughout product development similarly in education also during lab-based learning practical students should be actively present throughout practical. Students should take ownership of their learning. This can be possible by being flexible in goals.

Face-to-face learning: we can simulate environment to make learning face-to-face can feel as if we are used to before lockdown using various virtual reality application

Assessment:

Rather than sticking blindly to plans we can adapt to situation and current needs of students. Flexibility to change easily can improve results of students. Individuals and interaction over documentation. In assessment students submit assignment. In online assessment can be uncertain as doubts can remain unsolved. To assess and measurement based on this assignment solely will not help students. Increase interaction can help in getting proper feedback and evaluation of student thinking.

Agile continuous integration approach in teaching and learning will improved speed of understanding and build trust

Students involved throughout course, they can self-assess progress and learn from mistakes.

Availability of learning material in abundance make transparency and will help students gathering knowledge.

Agile methodology will help students to be disciplined.

There are certain EdTech start-ups has emerged to solve education challenge make student friendly environment which provide courses relevant to technology in market.

3. Factors for conclusion

1. **Affordability**:

Online education is more affordable over traditional education. So, these apps are effective for those students who enable to access traditional campus-based learning for variety of reasons. Procedure for accessing the apps is also very easy to understand.

2. **Time saving:**

As agile model delivers “just in time” it will take less time to achieve results. Students in traditional way of learning and teaching invest time in travel. Now students attend labs and lectures through online mode

3. **Social impact:**

In india agile model in online education is not yet implemented. Mostly education is traditional which shifted to online classrooms post pandemic. There are concerns among teachers and students regarding quality as there are many things which are on trial and error. Lot of area is deprived of basic infrastructure. People in society are still not fully aware with these new technologies, a little push is needed towards proper awareness among peers. Agile practices currently are only present in software development industry and students do not get to practice agile model during learning.

4. Impact on students and teachers:

There is rapid change in way of learning. There is digital shift in education. Institutes majorly operated physical environment before covid-19 pandemic. Educators do not have lot e-resources and need produce new material. Students previously used to library and using hard copy of reference books. Now there is no access to physical resources. Students don't have access to books. They faced problems to get soft copies of material. Students now interact with chat interface and not directly to instructors which is not natural experience. There is increased need of digital communication. Communication is based on emails as well as live video-based classes.

5. Economic impact:

In order to access online education, it is mandatory to have digital resources such as high-speed network, pc, laptop, electricity all comes at some cost. Not all students easily get all tools. It creates increased need to find best fit solution to each challenge in education with technologies that is already existing and which is to be developed in future. Jobs and placements in pandemic and restrictions on movement changed way of working. Educators and students started with online virtual internship and work from home opportunities. Many sectors remained shut during lockdown. Where lot of ground level staff to higher level staff loose jobs. Creating strain on payments of fees.

6. Increase use digital space and apps:

More and more students enrolled to online learnings activities like admission, exams, entrance tests conducted are postponed by universities. Increase in online resources like zoom, facebook live, microsoft teams, google meet, e-learning portals like swayam helped providing full online education.

7. Technological impact:

Agile model-based teaching and learning will help students to work with other students with different skills than their own and give respect by listening to other students as agile focus on cross-functional integration of teams to reach product goals. Teachers are responding in best way to shift education in online based platform equipping students with skills to use tools

Conclusion:

These new technologies are still in their early stages of development, they required thorough research to ensure the proper use in academic teaching. Mostly these agile model-based teaching and learning are useful for higher technical education to help teachers and student to able to learn in rapidly changing situations, but they are not replacement for actual in teachers. Also, in agile model conditions changes are required. It is true that these technologies have more positive effects than negative effects, they help learners to reach out for education through online access and students also giving positive response towards this new innovation. To get accepted by higher technical education field these technologies have to work hard on curriculum design. If they do, there might be a window that education field will use them in delivering quality education.

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