Exploration of the Development of Online Live Teaching in the Post - Pandemic Era

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Abstract: Before the Lunar New Year of 2020, Wuhan experienced an outbreak of the novel coronavirus pandemic. Over the following four years, the recurring nature of the pandemic led to increasingly significant impacts on various sectors such as work, life, economy, and education. Amid this context, schools at all levels - primary, secondary, universities, and vocational institutions - faced repeated closures. Responding to the Ministry of Education's directives, institutions embarked on a journey of online live teaching. However, this new mode of education presented fresh challenges and problems for both students and teachers. As the pandemic situation gradually eased, the pace of development for online live teaching has slowed. Whether it remains necessary to continue encouraging its development in the post - pandemic era has become a question worthy of exploration for educational institutions.

Keywords: Online Live Teaching; Post-Pandemic Era; New Teaching Methods; New Challenges

1. Current Status of Online Live Teaching in the Post-Pandemic Era

The emergence and development of online live teaching are closely tied to advancements in internet technology. Initially, online teaching primarily relied on pre-recorded courses. With improved living standards and active promotion by educational enterprises and institutions, the potential of online live teaching was gradually realized. Fueled further by growing market demand, its application scope expanded significantly, accelerating its rapid development.

The outbreak of the pandemic severely disrupted the normal operations of schools nationwide. To prevent the spread of infections caused by large gatherings, schools implemented policies such as delayed return to campus and postponed semester openings. To ensure that students' learning activities and schools' teaching schedules remained unaffected, institutions adopted online live teaching, allowing students to attend classes from home.

However, in the post-pandemic era, online live teaching was quickly replaced by traditional in-person teaching. Local educational institutions resumed on-campus instruction and discontinued the online live teaching model for the following main reasons:

1.1 Poor Attendance and Engagement

During the pandemic, students were restricted from freely leaving their homes, making home-based online learning a necessity. However, this mode of teaching was entirely new to both local schools and students, presenting significant differences from the traditional in-person classroom experience. While the initial novelty of online live teaching led to a relatively high level of acceptance among students and teachers, ongoing implementation revealed various issues. For example, many students struggled with psychological inertia, finding it difficult to shift into a learning mindset at home. This lack of adaptability resulted in students failing to attend classes on time or engage effectively.

1.2 High Demands on Network and Equipment

Online live teaching, compared to traditional in-person instruction, places significantly higher demands on equipment. To ensure the quality of live-streamed lessons, both students and teachers are required to meet new standards for their internet and devices. High-speed, stable internet connections are essential, and many are forced to invest in high-performance computers or tablets for streaming and attending classes, increasing their financial burden.

Moreover, many teachers are unfamiliar with

live-streaming equipment and lack experience in online teaching, which often leads to poor teaching effectiveness. For students in remote or underprivileged areas, inadequate network infrastructure and the lack of access to proper devices make participating in online classes nearly impossible, rendering live teaching impractical in such regions.

1.3 Challenges in Student Assessment and Assignment Grading

Unlike traditional in-person classes, live-streamed lessons make it difficult for students to complete assignments on time. According to student feedback, distractions at home often prevent them from focusing on their studies and finishing their work. Additionally, once assignments are submitted, teachers face challenges in grading them effectively and providing timely feedback, which impacts the overall quality of teaching.

Furthermore, assessments conducted at home differ significantly from those held on campus. Teachers struggle to monitor online exams effectively, leading to issues such as cheating, lack of focus, and a diminished sense of responsibility toward the exam. Many students fail to approach exams with the necessary seriousness, treating them as less important and often lacking a proper learning mindset.

From the above information, we can see that the sudden outbreak of the pandemic brought online live teaching to the forefront, catching both teachers and students off guard. Many teachers and students were unprepared for home-based learning, which led to various teaching challenges. Additionally, online live teaching placed new demands on teachers, requiring adjustments in lesson preparation, grading, and instructional design, thereby increasing their workload and taking up additional personal time.

However, in the face of a crisis like the pandemic, online live teaching proved to be an effective solution, allowing education to continue while ensuring personal safety. Its advantages became particularly evident during this time.

2. Advantages of Online Live Teaching

In recent years, the rapid development of online communication and collaboration software has led to widespread use in areas such as virtual meetings and remote collaboration. With its multi-platform accessibility, ease of use, high interactivity, and timely communication, this software is perfectly suited for online live teaching, creating a unique teaching model. The advantages of online live teaching are mainly as follows:

2.1 Real-Time Interaction:

Online live teaching allows for real-time interaction between teachers and students, which is a significant departure from traditional teaching. In conventional classrooms, students may have questions during the lesson but must wait until the teacher finishes or after class to ask. This delay may cause students to forget their questions. In contrast, online live teaching eliminates this issue. Students can interact with teachers through online chat or direct questioning, allowing even those who are usually hesitant to ask questions to voice their concerns. Teachers can then address these questions after the lesson, using the chat records to clarify and explain, which encourages students to think more critically and engage in meaningful discussions, leading to a deeper understanding of the material.

2.2 Flexibility:

Traditional teaching follows a set curriculum and syllabus, often requiring the teacher to cover material that students may already understand. Live teaching, however, offers greater flexibility in how lessons are delivered. Teachers can adjust the pace and content based on students' needs and feedback, making real-time changes to ensure that the lesson is aligned with student comprehension and progress. This flexibility is particularly important when addressing diverse learning needs and varying student progress, ensuring that no student is left behind.

2.3 Resource Sharing:

Online live teaching enables the sharing of educational resources in a more efficient way. In traditional classrooms, teachers must prepare and distribute materials in advance, often through printing. With live teaching, educational materials, courseware, and other resources can be easily shared online. Students can access these materials at any time and from anywhere, promoting a paperless learning

environment. This also increases efficiency and prevents the loss of important documents or resources. In addition, this format makes it easier for teachers to update and modify content in real-time, ensuring that students receive the most up-to-date and relevant information.

2.4 Increased Interactivity:

Live teaching enhances student interaction, which is often limited in traditional classrooms. With live teaching, students can engage in group discussions, collaborate with peers, and participate in online activities through live software. This fosters a more engaging and participatory learning experience, encouraging students to think critically and work together, ultimately enriching their learning and growth. Furthermore, it offers students a greater sense of agency in their learning, allowing them to explore topics at their own pace through interactive tools and exercises.

2.5 Visualization:

Traditional teaching methods may not offer a clear view of students' understanding of the material. In contrast, online live teaching allows for the visual presentation of content through images, videos, and other multimedia tools. This enables teachers to more effectively assess students' grasp of key concepts and identify challenges. Additionally, it helps students visualize their own understanding, pinpoint areas of difficulty, and focus on targeted practice, ultimately leading to a deeper and more comprehensive comprehension of the material. The ability to assess learning in real time and adjust instruction accordingly is a powerful tool for improving overall teaching effectiveness.

3. How to Conduct Effective Live Online Classes

Although online live teaching gained recognition and importance during the pandemic, both teachers and students are still relatively unfamiliar with this mode compared to traditional teaching. As a result, the full potential of online live teaching is not always realized. Therefore, how to effectively conduct an online live class remains a critical area of exploration.

For teachers, instructional design is key. Instructional design involves transforming teaching principles into plans for materials and activities that align with educational goals. A well-crafted instructional design enhances the efficiency and engagement of learning by making the acquisition of knowledge and skills more effective. However, online live teaching requires a different approach to course design than traditional face-to-face instruction. There are three key points to consider when designing an online live course:

3.1 Teaching Content

The content presented in online and offline courses may significantly differ, reflecting the distinct characteristics of each mode of delivery. For theoretical lessons, traditional teaching typically relies on multimedia presentations—such as slides, charts, and diagrams—combined with detailed theoretical explanations delivered by the instructor. In contrast, online courses have the ability to leverage a wide range of internet resources, including 3D models, high-quality images, videos, animations, and other advanced multimedia technologies. These tools enable instructors to present content in a much more dynamic, intuitive, and engaging manner. This online approach places a greater emphasis on visual effects and interactive elements, which can help students grasp difficult or abstract concepts in a more comprehensive and enjoyable way. For practical or experimental content, traditional in-person classes offer invaluable hands-on experience, which is essential for subjects that require physical manipulation or real-time observation. Online courses, on the other hand, often make use of simulation software and virtual labs to replicate these experiences. Such simulations provide students with more opportunities for trial and error, enabling them to deepen their understanding of the experimental content by interacting with virtual environments. While not a perfect replacement for in-person experience, these virtual simulations can help students develop a solid grasp of the concepts before applying them in real-world situations.

3.2 Teaching Methods

The teaching methods employed in online and offline classes also exhibit significant differences, influenced by the unique characteristics of each format. Online teaching, in particular, often emphasizes interactivity

and continuous feedback to foster a more collaborative and engaging learning environment. Since students can participate through digital platforms, the teaching strategies employed in online courses can more easily incorporate group discussions, peer collaborations, and real-time interactive exercises. This flexibility allows instructors to organize and facilitate diverse teaching methods, such as cooperative learning, problem-solving tasks, and discussions, in ways that would be difficult to implement in traditional face-to-face classes. These activities not only enhance students' understanding of the subject matter but also promote a deeper sense of involvement and accountability in the learning process. Additionally, the online environment encourages students to take more ownership of their learning, as they often have to actively engage with the material and interact with their peers, thereby improving their critical thinking skills and their ability to work collaboratively.

3.3 Teaching Tools

The tools available for use in online and offline teaching are also fundamentally different, reflecting the technology-driven nature of online education. In traditional classroom settings, teachers rely on physical resources such as textbooks, printed handouts, and whiteboards to convey lessons. However, online teaching places a much greater emphasis on technology and digital tools, offering a wide range of resources that can be used to enhance the learning experience. Since students attend classes remotely and rely on the internet to access content, online instructors can utilize various software tools, including virtual whiteboards, interactive quizzes, multimedia presentations, and digital collaboration platforms, to explain complex or abstract concepts more effectively. These tools provide additional opportunities for differentiation and individualized learning, allowing instructors to cater to a wider range of student needs and learning styles. Furthermore, compared to traditional in-person classes, online teaching offers a more versatile and enriching experience for both teachers and students. The use of digital resources allows instructors to incorporate diverse types of content, such as interactive graphics, video clips, and real-time polling, which can significantly increase engagement and understanding. This digital versatility also enables instructors to create a more personalized learning experience for students by adapting content to suit their preferences or comprehension levels. However, to fully capitalize on these tools, both teachers and students must have adequate training and access to the necessary technological infrastructure.

In conclusion, to maximize the effectiveness of online lessons, it is crucial for educational institutions to provide comprehensive training and support not only for teachers but also for students. Training should focus on familiarizing teachers with the tools and techniques necessary to deliver engaging and interactive online classes, as well as improving students' ability to navigate digital platforms and engage with content independently. Furthermore, schools should prioritize the development of robust live streaming infrastructures that can support the demands of online teaching, including reliable internet connectivity and high-quality video conferencing systems. In addition to this, a system for monitoring student learning and engagement should be put in place to ensure that students are actively participating and progressing through the course material. Both hardware and software requirements must be continuously evaluated and optimized to meet the evolving needs of online live teaching, ensuring a smooth and effective learning experience for all participants.

4. Conclusion

Online live teaching, which emerged as an essential response to the challenges posed by the pandemic, has now established itself as a significant component of the educational landscape. By harnessing the power of the internet and multimedia technologies, it offers real-time, interactive learning experiences that overcome the limitations of geographical and temporal constraints. This mode of teaching provides several key benefits, including enhanced interactivity, greater accessibility, flexibility, and convenience, making it a vital part of the future of education. As technological advancements continue to evolve, the demand for online learning is expected to grow, and educational institutions will likely receive increasing support from national

policies that promote digital learning initiatives. However, despite its many advantages, online live teaching also faces several challenges that must be addressed to unlock its full potential. Key issues such as ensuring consistent teaching quality, maintaining student engagement, and fostering self-discipline need to be resolved for this model to thrive. As digital transformation in education accelerates, institutions must embrace new technologies and pedagogical innovations, adapting to the changing needs of students and teachers. This forward-thinking approach will help institutions remain competitive and provide students with the most effective, inclusive, and engaging educational experiences possible.

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