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Review

Innovative Clinical Nursing Practice Teaching Model Based on Internet Plus

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Abstract: In the new era, the comprehensive development of Internet technology has driven the overall progress of education. In vocational colleges, institutions focus on the application of advanced technologies to create virtual simulation platforms, transform teaching models, and establish long-term mechanisms to enhance students' professional competencies. For clinical nursing practice teaching, it is increasingly important to address students' practical needs, allowing them to participate in learning and practice anytime, anywhere. Therefore, in the context of the new era, professional teachers should engage in continuous and in-depth exploration, advance information technology integration, and utilize advanced platforms and network models to enhance their clinical teaching capabilities, fostering students' ability to transform knowledge into practice.

Keywords: Internet plus; clinical nursing; practice teaching

1. Introduction

Clinical nursing internship teaching emphasizes the integration of theory and practice, aiming to create realistic work environments that enable students to gain hands-on experience. The Internet plus model offers a new educational approach, allowing students to engage in more meaningful learning, tasks, and practices, significantly promoting their professional development. By leveraging advanced technologies such as virtual simulation, online-offline blended teaching, and artificial intelligence (AI), this model transforms traditional teaching methods, enabling students to internalize theoretical knowledge and apply it in practical scenarios.

This article explores various innovative strategies for clinical nursing practice teaching through a literature review and summary of practical experiences. It highlights the effectiveness of virtual simulation platforms in replicating real-world medical environments, the flexibility and personalization offered by blended learning models, and the potential of AI-driven tools to provide real-time feedback and tailored learning experiences. Additionally, it addresses challenges such as the digital divide and the need for continuous professional development among educators, offering solutions to ensure equitable access and effective implementation.

By examining case studies from countries like the Philippines and the United States, this article demonstrates the global applicability of these strategies and their potential to bridge the gap between theory and practice, particularly in resource-limited settings. The goal is to provide valuable insights and references for educators, enabling them to adopt innovative teaching methods that empower students, enhance their competencies, and ultimately contribute to the advancement of clinical nursing education worldwide. Through these efforts, we can create a more inclusive, efficient, and future-ready educational ecosystem that benefits both students and the healthcare systems they serve.

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2. Virtual Simulation Teaching: Building Realistic Work Environments

With the rapid advancement of technology, various high-quality platforms and functionalities have been deeply integrated into the field of education. For clinical nursing internship teaching in vocational colleges, simulating real operational environments is crucial. By focusing on authentic experiences, students can better master professional skills and apply them comprehensively in practical work, thereby enhancing their professional competence. Therefore, modern teaching methods require teachers to innovate continuously, utilizing diverse platforms to create comprehensive teaching models that support students' practical operations. The overall curriculum design should emphasize interactivity, encouraging students to participate in various levels of practice, ultimately accumulating rich work experience and achieving effective knowledge transformation.

For example, virtual simulation teaching platforms can simulate various medical environments such as human anatomy, operating rooms, emergency rooms, and wards. These platforms typically include modules for general wards, ICUs, emergency rooms, operating rooms, and delivery rooms. By promoting practical applications, students can enhance their cognitive abilities, improve operational skills, and strengthen nursing competencies in immersive environments, thereby achieving more effective learning outcomes. Additionally, training modules are diverse, covering ward management, medication preparation, nursing station operations, performance evaluation, and more, spanning internal medicine nursing, surgical nursing, geriatric nursing, pediatric nursing, and gynecological nursing.

To further enhance the effectiveness of virtual simulation, educators can incorporate haptic feedback technologies and augmented reality (AR) tools. These technologies allow students to "feel" virtual patients' pulses or simulate surgical procedures with greater precision, bridging the gap between theory and practice. Moreover, integrating gamification elements, such as scoring systems and interactive challenges, can motivate students to engage more deeply with the learning material. For instance, a virtual simulation platform might include a scenario where students must respond to a sudden cardiac arrest in an emergency room. The platform could track their response time, accuracy in performing CPR, and decision-making under pressure, providing instant feedback and scores to encourage improvement [1,2].

3. Online-Offline Blended Teaching: Innovating Teaching Models

The innovative application of online-offline blended teaching mechanisms can significantly improve the effectiveness of practical teaching. By breaking through the spatial and locational limitations of traditional teaching, the effective integration of online and offline methods demonstrates numerous advantages. In recent years, many teaching tools and platforms have been updated and widely adopted, with some functionalities becoming relatively mature. Therefore, recording and monitoring the teaching process, and continuously improving teaching plans and strategies based on specific data, have become increasingly important.

Using advanced technologies to transform students' exploratory models and achieve personalized learning has become a focal point in education. Teachers should plan and design from various perspectives. For instance, practical teaching can be supplemented through lectures, micro-courses, MOOCs (Massive Open Online Courses), live streaming, and other methods, helping students research, analyze, and explore key and challenging topics. Additionally, by monitoring students' learning progress, teachers can analyze their data and provide targeted guidance. Finally, based on the dynamic management of students' practical operations and performance, teachers can identify various issues they encounter and implement appropriate solutions and strategies.

To further optimize blended learning, institutions can adopt adaptive learning platforms that use artificial intelligence (AI) to tailor content to individual students' needs. For example, if a student struggles with a specific topic, the platform can automatically

provide additional resources or exercises to address the gap. Furthermore, virtual collaboration tools, such as online discussion forums and group projects, can foster peer-to-peer learning and create a sense of community among students, even in remote settings. For example, a nursing student in a rural area could participate in a live-streamed surgery demonstration, followed by a virtual group discussion with peers and instructors to analyze the procedure and discuss potential improvements [3].

4. Transforming Traditional Clinical Teaching Models

The Internet plus model can promote interaction and communication among students. Establishing real-time information transmission models can broaden students' horizons, enabling them to proactively solve various problems. In intelligent environments, students can also share experiences and build rich cognitive and practical ideas through collective wisdom. For example, teachers can use platforms like WeChat, DingTalk, and online teaching platforms to guide clinical nursing practice teaching, allowing students to share teaching content, disease care operations, and clinical internship experiences. Teachers can also integrate more real-life cases, enabling students to independently analyze relevant data, understand the etiology and clinical manifestations of diseases, and focus on treatment, nursing, and examination aspects, selecting efficient models and techniques. Through various research processes, online training mechanisms can be established to enhance students' professional abilities. Clinical instructors should also maintain online learning logs, recording difficulties and areas for improvement, summarizing experiences, and addressing shortcomings to better enhance clinical teaching capabilities and ultimately improve nursing students' satisfaction.

To further enrich this model, educators can leverage big data analytics to track students' performance trends and identify common challenges across cohorts. This data-driven approach can inform curriculum adjustments and ensure that teaching methods remain aligned with students' needs. Additionally, incorporating virtual patient avatars that simulate real-life medical scenarios can provide students with opportunities to practice decision-making and critical thinking in a risk-free environment. For instance, a virtual patient might present with symptoms of diabetes, requiring students to diagnose the condition, develop a care plan, and monitor the patient's progress over time. Such simulations can be repeated multiple times, allowing students to learn from mistakes and refine their skills without risking real patients' well-being [4].

5. Case Studies and International Perspectives

To further illustrate the effectiveness of the Internet plus model in clinical nursing education, it is beneficial to examine case studies from different countries, including the Philippines. For instance, a study conducted in the Philippines highlighted the success of integrating virtual simulation platforms into nursing education. The study found that students who participated in virtual simulation training demonstrated significantly higher confidence and competence in clinical settings compared to those who received traditional training methods. This underscores the potential of virtual simulation in bridging the gap between theory and practice, particularly in resource-limited environments.

In the United States, the use of online-offline blended teaching models has been widely adopted in nursing education. A notable example is the integration of MOOCs (Massive Open Online Courses) into nursing curricula, enabling students to access high-quality educational content from leading institutions. This approach not only enhances students' knowledge base but also provides flexibility, allowing them to balance learning with other commitments. The success of this model in the U.S. offers valuable insights for other countries, including the Philippines, where access to high-quality nursing education may be challenging due to geographical and resource constraints.

Expanding on this, countries like Australia and Canada have also embraced telehealth training modules, which prepare nursing students to deliver care remotely — a

skill that has become increasingly important in the post-pandemic era. These modules often include simulations of virtual consultations, remote patient monitoring, and digital health record management, equipping students with the competencies needed for modern healthcare delivery. For example, in Australia, nursing students are trained to use telehealth platforms to conduct virtual check-ups for patients in rural areas, ensuring continuity of care despite geographical barriers [5].

6. Challenges and Future Directions

While the Internet plus model has brought numerous benefits to clinical nursing education, its implementation is not without challenges. One major issue is the digital divide, which may exacerbate existing inequalities in educational resources. For example, in developing countries like the Philippines, unstable Internet connectivity and low penetration of digital devices can significantly hinder the effective implementation of online-offline blended teaching models. Many students in remote areas lack access to basic Internet services, making it impossible for them to participate in online learning or use virtual simulation platforms. This inequality not only limits students' learning opportunities but may also widen the educational gap between urban and rural areas.

Addressing these challenges requires multi-faceted strategies. First, governments and educational institutions need to increase investment in digital infrastructure, especially in rural and remote areas, to ensure stable Internet coverage. Second, affordable digital devices, such as tablets or laptops, should be provided, and subsidies or rental programs can help reduce the financial burden on students. Additionally, educators need systematic training to master the use of digital tools and effectively integrate them into teaching practices. For instance, some schools in the Philippines have begun collaborating with technology companies to launch "digital literacy programs," helping teachers and students acquire essential digital skills.

Another significant challenge is the continuous professional development of educators. With the rapid advancement of technology, educators must constantly update their knowledge and skills to keep up with the latest teaching tools and methods. For example, virtual reality (VR) and augmented reality (AR) technologies are gradually entering the field of education, requiring teachers to learn how to design immersive teaching experiences using these tools. Moreover, the application of artificial intelligence (AI) and machine learning (ML) demands that teachers possess certain data analysis capabilities to adjust teaching strategies based on students' learning data. Therefore, educational institutions need to provide ongoing professional development opportunities for teachers, including online training courses, workshops, and practical seminars, to help them stay at the forefront of technology.

Looking ahead, the future of clinical nursing education lies in the deep integration of advanced technologies and innovative teaching models. The development of AI and ML offers exciting possibilities for personalized learning and real-time feedback. For instance, AI-driven virtual mentors can provide students with instant feedback, helping them identify areas for improvement and tailor learning plans based on individual progress. This personalized learning approach not only enhances students' learning efficiency but also reduces the workload on teachers, allowing them to focus on higher-level instructional design.

Additionally, blockchain technology is expected to play a significant role in clinical nursing education. Through blockchain, students' academic achievements, internship experiences, and skill certifications can be securely recorded and verified, ensuring transparency and immutability of data. This not only helps students showcase their qualifications when seeking employment but also provides educational institutions with more comprehensive tools for assessing student competencies.

Another future direction is the popularization of telehealth training. With the growing global demand for telehealth, nursing students need to acquire skills in delivering care

through digital platforms. For example, students can use simulation platforms to practice remote diagnosis, patient communication, and electronic medical record management, preparing them for future careers in telehealth. This training can be further enhanced by incorporating real-world case studies and collaborative projects with healthcare providers, giving students hands-on experience in a rapidly evolving field.

In conclusion, while the Internet plus model presents challenges such as the digital divide and the need for continuous educator development, it also opens up exciting opportunities for the future of clinical nursing education. By investing in infrastructure, promoting digital literacy, and embracing advanced technologies like AI, blockchain, and telehealth training, the field can overcome these challenges and create a more inclusive, efficient, and innovative educational environment. This will not only empower students to excel in their careers but also ensure that healthcare systems worldwide are equipped with highly skilled and adaptable nursing professionals [6-8].

7. Conclusion

In summary, the application of Internet of Things (IoT) technology in clinical nursing education has demonstrated significant effectiveness, effectively enhancing nursing students' professional competencies and meeting the requirements for talent development. Therefore, looking to the future, educators should continuously improve their clinical teaching capabilities, conduct various research and explorations, and actively develop high-quality platforms and functionalities. By building comprehensive models that promote online-offline blended teaching and leveraging virtual simulation tools, students can benefit from convenient operational training, personalized learning, and experience sharing. This approach will ultimately establish a high-quality educational model that empowers students' growth and development.

To further strengthen this model, it is essential to address challenges such as the digital divide and the need for continuous professional development among educators. Investments in digital infrastructure, affordable devices, and educator training programs are critical to ensuring equitable access to these advanced learning tools. Additionally, the integration of emerging technologies like artificial intelligence (AI), blockchain, and telehealth training will play a pivotal role in shaping the future of nursing education. These innovations not only enhance learning outcomes but also prepare students to meet the evolving demands of modern healthcare systems.

By fostering collaboration between educational institutions, technology providers, and healthcare organizations, we can create a dynamic and inclusive learning environment. This environment will not only equip nursing students with the skills and knowledge needed to excel in their careers but also contribute to the overall improvement of global healthcare delivery. Ultimately, the goal is to build an educational ecosystem that supports lifelong learning, innovation, and excellence in clinical nursing practice.

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