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SAMR MODEL IN THE PRACTICAL APPLICATION OF TEACHING IN THE REHABILITATION THERAPY PROFESSION

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ABSTRACT

The SAMR (Substitution, Augmentation, Modification, Redefinition) model, as a framework for guiding and evaluating educational technology integration, is gradually gaining attention and application in education. This study aims to explore the practical application of the SAMR model in teaching for the rehabilitation therapy profession. Through a comparative analysis of traditional teaching methods and the SAMR model, the feasibility and effectiveness of the SAMR model in rehabilitation therapy education will be investigated to provide theoretical and practical support for teaching reforms in the rehabilitation therapy field. This research will delve into the concepts and theoretical foundations of the SAMR model, the current state of rehabilitation therapy education, and the evaluation of the practical application effects. The objective is to provide a reference and insights for teaching reforms in the rehabilitation therapy profession. This study is expected to provide theoretical and practical support for teaching reforms and development in the rehabilitation therapy field while offering new perspectives and practical experiences for applying and promoting the SAMR model.

Keywords: SAMR model, Rehabilitation therapy profession, Teaching reforms.

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INTRODUCTION

Rehabilitation therapy is a comprehensive discipline involving rehabilitation medicine, rehabilitation theory, and related practical techniques. Its teaching content covers multiple disciplines, such as medicine, psychology, rehabilitation studies, and exercise science. In today's society, with increasing demands for a healthy lifestyle, the importance of the rehabilitation therapy profession has become increasingly prominent. However, traditional teaching methods need to be improved in meeting students' personalized learning needs, stimulating their interest in learning, and improving teaching effectiveness.

OVERVIEW OF THE SAMR MODEL

1. Definition and Development of the SAMR Model

The SAMR model was proposed by Ruben Puentedura in 2006 as a framework for evaluating and guiding educational technology integration. SAMR stands for Substitution, Augmentation, Modification, and Redefinition, describing different classroom technology application levels. In the SAMR model, substitution and augmentation represent incremental improvements, while modification and redefinition represent transformative improvements. Since its introduction, the SAMR model has received widespread attention and application, not only in the field of education but also in other areas.

Regarding the development of the SAMR model, after its proposal by Ruben, it gradually gained attention and extension from scholars and educators. Some educational theorists expanded the SAMR model, making it more applicable to teaching scenarios and subject areas. Moreover, the SAMR model has continued to expand internationally, providing new perspectives and methods for integrating educational technology. Over time, the SAMR model has received increasing attention from educators and educational administrators, becoming an important tool for optimizing teaching models.

2. Theoretical Foundations of the SAMR Model

The theoretical foundations of the SAMR model mainly stem from constructivist learning theory, cognitive load theory, and technology integration theory. Constructivist learning theory emphasizes learners' agency and stresses that learners actively construct knowledge through participation in practical activities. The four levels of the SAMR model also reflect different degrees of learner participation, ranging from simple use and substitution to the redefinition of

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learning activities. Cognitive load theory emphasizes that care should be taken in designing instruction to avoid excessive or insufficient cognitive load, and the SAMR model also considers the balance between learning tasks and cognitive load when proposing different application levels. Technology integration theory emphasizes that educational technology should be combined with specific teaching objectives and learning tasks, and the SAMR model also proposes a hierarchical classification of educational technology based on this principle.

3 Application of the SAMR Model in Education

The SAMR model has been widely applied in education, including basic, higher, and vocational education across multiple levels and disciplines. Educators use the SAMR model to evaluate the technologies and tools used in classroom instruction, thereby identifying the optimal educational technology integration solution. At the same time, the SAMR model also provides a theoretical framework for educational research, helping researchers gain a deeper understanding and analysis of the application effects and influencing factors of educational technology.

Applying the SAMR model has also provided new perspectives for educational reform. By introducing the SAMR model, schools and educational institutions can better leverage educational technology to enhance teaching effectiveness. Due to the flexibility and universality of the SAMR model, it can be applied not only in traditional classroom instruction but also in online teaching, distance education, and other new teaching scenarios. Through the SAMR model, teachers and educational administrators can better evaluate and plan educational technology integration, achieving innovation and improvement in teaching models.

ANALYSIS OF THE CURRENT STATE OF REHABILITATION THERAPY EDUCATION

1. Characteristics of Rehabilitation Therapy Education

Rehabilitation therapy education is characterized by interdisciplinary, a strong emphasis on practical skills, and a broad range of subject content. The rehabilitation therapy profession involves multiple disciplines, such as medicine, rehabilitation studies, psychology, and sociology, resulting in complex and diverse teaching content. At the same time, the rehabilitation therapy profession emphasizes practical operational skills, requiring students to master relevant skills and knowledge through hands-on practice. Therefore, the teaching process must focus on practical training components and the development of operational skills.

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Furthermore, the rehabilitation therapy profession covers many subject areas, requiring students to have a solid foundation of knowledge and skills across multiple disciplines. Consequently, the overall level of teaching difficulty is high, placing higher demands on teachers' teaching abilities and educational resources.

2. Problems with Existing Teaching Models

Traditional classroom instruction remains predominant in the current teaching models, and issues such as insufficient practical components and overly theoretical and singular teaching content are prevalent. While rehabilitation therapy education emphasizes cultivating practical abilities, traditional classroom models often fail to meet students' needs in practical settings. The teaching content is often overly theoretical and needs more educational resources closely integrated with actual practice. In the classroom, students primarily receive theoretical knowledge, needing more opportunities to practice practical operational skills, resulting in relatively weak practical skills among students. Moreover, the existing teaching models are relatively uniform, lacking innovative and diverse teaching methods, making stimulating students' learning interests and initiative difficult.

3. The Need for Applying the SAMR Model in Rehabilitation Therapy Education

Facing the problems inherent in the existing teaching models, the rehabilitation therapy profession urgently needs to introduce new models to improve teaching effectiveness and students' practical operational skills. The introduction of the SAMR model provides new possibilities for rehabilitation therapy education.

The SAMR model emphasizes innovation and transformation in educational technology, ranging from simple substitution to the redefinition of learning activities, which can help schools and educational institutions rethink and redesign their teaching models.

In the rehabilitation therapy profession's teaching practice, the SAMR model can inspire schools and educational institutions to rethink and redesign their teaching models. First, by adopting the SAMR model, teachers can better utilize high-tech approaches, such as virtual laboratories, simulated case studies, and online resources, to increase contextualized learning opportunities in real-world settings. This can help students better understand and apply the knowledge they have learned, better meeting the practical needs of the rehabilitation therapy profession. Second, the introduction of the SAMR model promotes the redefinition of teaching content and tasks, enabling better course design around practical application scenarios and integrating teaching

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content with the skills needed for students' future work, thereby strengthening the development of students' professional competencies. Finally, the SAMR model encourages teachers and educational institutions to emphasize personalized and adaptive instruction, carefully designing courses based on students' characteristics and needs and guiding students' continuous growth along personalized learning paths.

At the same time, adopting the SAMR model can help improve teaching effectiveness and students' learning experiences. Teachers can better integrate and utilize modern technology through the hierarchical application of educational technology, enhancing the diversity and appeal of courses and promoting deeper levels of student learning and thinking. Introducing the SAMR model can also increase student interaction and participation, enhancing students' learning motivation and self-awareness and thereby stimulating students to engage more actively in the learning process.

Most importantly, the introduction of the SAMR model promotes professional development and team collaboration among teachers. In applying the SAMR model, teachers need to engage in deep reflection and continuous practice, which helps to enhance their teaching design and evaluation abilities. Furthermore, the application of the SAMR model encourages interdisciplinary collaboration, promoting the sharing of teaching resources and the exchange of teaching philosophies, providing more diverse driving forces for the development of rehabilitation therapy education. Therefore, introducing the SAMR model provides new avenues and potential for promoting reforms in rehabilitation therapy education.

PRACTICAL APPLICATION OF THE SAMR MODEL IN REHABILITATION THERAPY EDUCATION

1. Application in the Substitution Stage

Teachers can introduce the SAMR model at the substitution stage by using digital learning resources to replace traditional paper textbooks and classroom demonstrations. For example, they can utilize digitized rehabilitation case libraries, multimedia courseware, and online video resources to provide students with more abundant learning resources. Additionally, classroom discussions and learning tasks can be transitioned to online platforms to enhance the flexibility and convenience of student learning. Through digital learning resources, students can obtain a more personalized learning experience, allowing them to independently choose suitable learning resources according to their needs, thus better facilitating learning and application.

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2. Application in the Augmentation Stage

In the augmentation stage, teachers can gradually introduce digital tools and teaching methods that enhance the student learning experience and improve learning outcomes. For instance, they can employ virtual laboratories for practical operations, simulating real clinical scenarios to help students develop clinical decision-making and operational skills. Simultaneously, teachers can leverage online collaborative platforms or instant messaging tools to promote cooperative learning and collaborative discussions among students. Furthermore, introducing educational games, online assessments, and other forms can stimulate students' active engagement and interest, increasing the diversity and appeal of teaching. Introducing these tools and methods can significantly enhance student participation and learning outcomes, strengthening their practical operational skills and problem-solving abilities.

3. Application in the Modification Stage

Teachers can fundamentally alter traditional teaching content and tasks in the modification stage through deeper technology integration. For example, they can utilize virtual reality technology for clinical simulation training, assisting students in practicing operations and decision-making in virtual clinical environments. Additionally, they can employ data-driven learning, leveraging big data analytics, intelligent assisted teaching systems, and other technological means to provide personalized learning support and customized student teaching plans. Concurrently, they can utilize social networks and remote collaboration platforms to promote global student-teacher interactions and collaborations, expanding students' international perspectives and cross-cultural exchanges. Students' practical operational skills, innovative capabilities, and teamwork abilities will be comprehensively developed and enhanced through these innovative methods and applications.

4. Application in the Redefinition Stage

In the redefinition stage, teachers can leverage advanced technological tools and instructional mindsets to disrupt traditional teaching models and content in the rehabilitation therapy profession. For instance, they can employ artificial intelligence technology to conduct personalized assisted learning and adaptive teaching, monitoring and adjusting students' learning processes in real time. Simultaneously, they can transcend limitations of time and space, enabling personalized remote internships and training by utilizing high-definition video and network technologies to simulate real-time remote clinical operations, allowing students to

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learn and practice across geographical boundaries. Furthermore, they can integrate interdisciplinary approaches, leveraging cutting-edge technologies such as biotechnology and intelligent wearable devices to conduct innovative rehabilitation therapy research and teaching, cultivating students' future technological application abilities and innovative thinking. Through these disruptive innovative applications, teaching in the rehabilitation therapy profession will undergo profound transformations, providing students with more refined and personalized teaching experiences and better equipping them to adapt to future societal and developmental needs.

EVALUATION OF PRACTICAL EFFECTS

1. Qualitative Assessment

Qualitative assessment is one of the essential means of evaluating the practical application of the SAMR model in rehabilitation therapy education. Through qualitative assessment, various aspects such as student learning experiences, teaching effectiveness, and teacher feedback can be comprehensively examined. This includes employing in-depth interviews, student feedback surveys, and other methods to understand students' acceptance of the new teaching model, improvements in their learning experiences, and the actual effectiveness of the teaching activities. Qualitative assessment allows for an in-depth understanding of students' reactions during the teaching process, their cognition, and attitudes toward technology integration, thereby providing valuable references and suggestions for teaching improvement.

Qualitative feedback and assessment from both teachers and students are also crucial aspects. Through teachers' observations and student feedback, the impact of the SAMR model's application on student learning and course effectiveness can be more accurately understood. Additionally, expert reviews and qualitative opinions from key stakeholders can provide a comprehensive understanding of the practical effects of the SAMR model in rehabilitation therapy education. Qualitative assessment will comprehensively present the characteristics and advantages of the SAMR model in teaching practice, providing a basis for subsequent teaching reforms and optimizations.

2. Quantitative Assessment

After applying the SAMR model in rehabilitation therapy education, quantitative assessment is essential to evaluating teaching effectiveness. Data such as student grades, learning

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achievements, and participation levels can be collected and statistically analyzed through quantitative assessment. These data will provide important evidence for the objective evaluation of teaching effectiveness.

Simultaneously, quantitative assessment can be used to compare the teaching effectiveness of the SAMR model in rehabilitation therapy education with traditional teaching models. Collecting data on students' knowledge levels and skill mastery before and after teaching and conducting comparative analyses is helpful in revealing the improvements and enhancements in academic performance, practical skill mastery, and other areas under the new teaching model. On the other hand, quantitative assessment can also be used to analyze changes in student participation, learning interest, and learning attitudes across different SAMR levels, thereby better understanding the actual effects of the new teaching model. Therefore, quantitative assessment can facilitate quantitative comparisons and analyses, further substantiating the actual teaching effectiveness of the new teaching model.

3. Case Analysis

Through case analysis of the practical application of the SAMR model in rehabilitation therapy education, a deeper understanding of the implementation and effects of the new teaching model can be gained. Case analysis can provide in-depth assessments of individual students, specific teaching scenarios, and targeted teaching modules, providing a more comprehensive view of teaching operations and effects.

In case analysis, specific teaching cases can be used to conduct in-depth comparisons and analyses of student performance, academic achievements, practical operational abilities, and other aspects before and after teaching. Additionally, teachers' insights and reflections on specific teaching design and implementation processes can be explored, examining challenges, opportunities, and areas for improvement encountered during the teaching process. Through case analysis, a deeper understanding of the actual application effects of the SAMR model in rehabilitation therapy education can be achieved, providing more specific references and improvement recommendations for practical teaching. Therefore, case analysis is also an essential means of evaluating the practical application of the SAMR model in rehabilitation therapy education.

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CONCLUSIONS AND OUTLOOK

A. Summary of Research Conclusions

The application of the SAMR model can assist teachers in better planning and integrating teaching resources, improving teaching effectiveness and student learning experiences. In rehabilitation therapy, introducing advanced teaching tools such as multimedia technology and virtual simulation technology can enhance students' practical operational abilities. Simultaneously, the SAMR model also supports the redefinition of teaching content and tasks, enabling better course design around actual application scenarios and reinforcing students' practical operational skills and problem-solving abilities. Therefore, introducing the SAMR model is of positive significance for teaching reforms in the rehabilitation therapy profession.

B. Prospects for the SAMR Model in Rehabilitation Therapy Education

The limitation of this research is that, although the SAMR model has demonstrated great potential in teaching practice, this study only discusses its application in rehabilitation therapy education, lacking comparative analysis with other subject areas. Furthermore, due to time and resource constraints, research on tracking and in-depth analysis of the long-term application effects of the SAMR model in rehabilitation therapy education is still lacking.

Future research directions can be explored in the following areas: First, the research perspective can be expanded to compare the practical effects of the SAMR model in rehabilitation therapy education with other relevant teaching models to gain a deeper understanding of its applicability and advantages in different disciplines, levels, and teaching content. Second, in-depth discussions can be conducted on the experiences and insights gained from specific teaching designs and implementations based on the SAMR model in the rehabilitation therapy profession, forming systematic teaching practice guidelines and models. Simultaneously, the focus can be shifted towards learning resource and technology integration and personalized learner needs, providing more comprehensive research support for the innovation and improvement of teaching models in the rehabilitation therapy profession. Additionally, the long-term effects and educational cost-benefits of the SAMR model in rehabilitation therapy education can be further explored to better understand its practical value and application prospects in teaching reforms. Therefore, future research can be conducted in broader and more in-depth areas, continuously driving innovation and practice in educational technology models.

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REFERENCE

1. Bicalho, R. N. M., Coll, C., Engel, A., & Lopes de Oliveira, M. C. S. (2023). Integration of ICTs in teaching practices: propositions to the SAMR model. _Educational Technology Research and Development, 71(2) , 563–578. https://doi.org/10.1007/s11423-022-10169-x
2. Davis, D., Chen, G., Hauff, C., & Houben, G. (2018). Activating learning at scale: A review of innovations in online learning strategies. _Computers and Education, 125_, 327-344. https://doi.org/10.1016/j.compedu.2018.05.019
3. Drugova, E., Zhuravleva, I., Aiusheeva, M., & Grits, D. (2021). Toward a model of learning innovation integration: TPACK-SAMR based analysis of the introduction of a digital learning environment in three Russian universities. _Education and Information Technologies, 26(4)_, 4925-4942. https://doi.org/10.1007/s10639-021-10514-2
4. Kihoza, P., Zlotnikova, I., Bada, J., & Kalegele, K. (2016). Classroom ICT integration in Tanzania: Opportunities and challenges from the perspectives of TPACK and SAMR models. _International Journal of Education and Development using ICT, 12(1)_, 107-128.
5. Peled, Y., Blau, I., & Grinberg, R. (2022). Crosschecking teachers' perspectives on learning in a one-to-one environment with their actual classroom behavior - a longitudinal study. _Education and Information Technologies, 27(4)_, 4841-4864. https://doi.org/10.1007/s10639-021-10809-4
6. Puentedura, R. (2020). SAMR, Observation, Analysis, and Action. http://hippasus.com/blog/
7. Svrcek, N. S., Rath, L., Olmstead, K., & Colantonio-Yurko, K. (2022). "We are still putting out fires": Considering educator intentionality in remote instruction during the COVID-19 pandemic. _Education and Information Technologies, 27(1)_, 407-428. https://doi.org/10.1007/s10639-021-10679-w
8. Tanveer, N., & Diwan, H. (2021). Climbing the SAMR ladder: Utilizing audio messages for teaching pathology to postgraduates. _The National Medical Journal of India, 34(4)_, 251-253. https://doi.org/10.25259/NMJI_141_21
9. Tunjera, N., & Chigona, A. (2020). Teacher educators' appropriation of TPACK-SAMR models for 21st century pre-service teacher preparation. _International Journal of Information and Communication Technology Education, 16_, 1-15. https://doi.org/10.4018/ijicte.2020070110

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