Volume: 10 Issues: 74 Special Issue [July, 2025] pp. 152 - 171
Journal of Islamic, Social, Economics and Development (JISED)
eISSN: 0128-1755
Journal website: www.academicinspired.com/jised
DOI: 10.55573/JISED.107414

THE MODERN APPRENTICESHIP OF MEDICAL STUDENTS IN JIANGXI, CHINA

Wu Yuting[1 2 *]
Wong Siew Ping[1]

[1] Faculty of Education and Liberal Studies, City University Malaysia, Selangor, Malaysia
(Email - 6425416@qq.com)
[2] Nanchang Medical College, Nanchang, Jiangxi, China

Article history
Received date : 24-2-2025
Revised date : 25-2-2025
Accepted date : 10-7-2025
Published date : 15-7-2025

To cite this document:
Yuting, W., & Ping, W. S. (2025). The modern apprenticeship of medical students in Jiangxi, China. *Journal of Islamic, Social, Economics and Development (JISED),* 10 (74), 152 - 171.

Abstract: *Medical students in Jiangxi, China, are the focus of this research, which seeks to understand how technology could improve their clinical rotations. Although there are many potential advantages, there are also many challenges and complications associated with incorporating technology into medical apprenticeships. This study aims to examine medical apprenticeships in Jiangxi through the lens of student and educator perspectives on the use of technology, the pros and cons of this integration, and the effects on medical education going forward. The study included 450 medical students from different schools and used a quantitative cross-sectional design. Apprentices' perceptions of the pros and cons of the technology they used, as well as its effect on their learning outcomes and clinical competence, were all measured by the survey instrument. Electronic health data, medical applications, and online textbooks are regularly utilized resources, according to the results. Gains in efficiency and productivity, better access to medical information, and better training of clinical skills are all things that people want to experience. Nevertheless, obstacles like technological difficulties, worries about data protection, and the absence of sufficient training and assistance were noted. In sum, the study shows how technology may change medical education for the better and how important it is to use new ways of teaching and digital resources to help students in Jiangxi, China, become doctors and nurses who can handle the challenges of today's healthcare system.*

Keywords: *Technology, Medical Apprenticeships, Medical Education, Jiangxi, China*

Volume: 10 Issues: 74 Special Issue [July, 2025] pp. 152 - 171
Journal of Islamic, Social, Economics and Development (JISED)
eISSN: 0128-1755
Journal website: www.academicinspired.com/jised
DOI: 10.55573/JISED.107414

Introduction

The standard educational approach has been the backbone of medical training for generations of students (Pekmezaris et al., 2023). However, training methods must change as the medical field develops. The goal of introducing modern apprenticeship programmes, especially in areas like Jiangxi, China, has been to integrate real-world experiences early on in a medical student's journey, bridging the gap between theoretical knowledge and practical skills. While this strategy shows promise, it also raises a number of important concerns that need to be explored further. The definition and implementation of apprenticeship varies from one region to another (Markowitsch & Wittig, 2022). Many students may not be able to afford to participate in an apprenticeship because of limited access of financial resources (Ro et al., 2021). There is a lack of trust and understanding between the mentor and the apprentice (Meeuwissen et al., 2019).

The potential for the modern apprenticeship model's learning outcomes and educational experiences to be at odds is a major drawback. The apprenticeship model has many advantages, but there is a danger that students only see a small subset of medical cases, procedures, and specialties. This raises questions about the breadth and depth of their medical education, which may produce graduates who are skilled in a narrow area of medicine but haven't had adequate exposure to other specialties (Veerapen & McKeown, 2021). Furthermore, the ever-changing nature of medical practise necessitates a flexible curriculum in order to keep up with the introduction of new technologies and treatment methods. How well contemporary apprenticeship programmes adapt to new technologies and teach students relevant skills is of critical importance in this context.

In addition to their academic progress, medical students-in-emotional training's health also requires close observation. The stress, burnout, and mental health issues experienced by medical students and professionals are well-documented and directly related to the demanding nature of medical education and practise. The in-depth and practical nature of modern-day apprenticeship, however, raises the possibility that these difficulties was exacerbated. Apprentices may experience emotional burdens from prolonged exposure to stressful medical situations, ethical dilemmas, and patient outcomes, which can have a negative impact on their mental health and career prospects (Froessl & Abdeen, 2021). This highlights the importance of evaluating the preparedness of contemporary apprenticeship programmes in Jiangxi and related contexts to supply students with sufficient psychological support and coping mechanisms in the face of the unique challenges they may face.

The medical community may feel the effects of a lack of attention to these concerns within the context of contemporary apprenticeship programmes. Graduates who are competent but lack comprehensive training may struggle when presented with a variety of clinical scenarios, jeopardising patient care (Patel et al., 2023). Similarly, the toll on mental health may increase burnout and attrition rates among medical students, contributing to the already severe shortage of healthcare professionals. Furthermore, if graduates from contemporary medical apprenticeship programmes are not seen as adequately prepared or emotionally resilient, it could damage the institutions' reputations.

Disagreements and misunderstandings can arise when there is a lack of trust and understanding between the mentor and the apprentice (Meeuwissen et al., 2019). Apprentices typically face lower pay, longer hours, and less stability in their employment (Morello, 2022). The difficulties of contemporary apprenticeship in medical education have been studied and attempted solutions developed, especially in the Chinese province of Jiangxi. Some schools have begun to provide

Volume: 10 Issues: 74 Special Issue [July, 2025] pp. 152 - 171
Journal of Islamic, Social, Economics and Development (JISED)
eISSN: 0128-1755
Journal website: www.academicinspired.com/jised
DOI: 10.55573/JISED.107414

apprentices with a more organised and varied clinical experience. By exposing students to a wider variety of medical cases, procedures, and specialties, they hope to improve the quality of their education as a whole (Kumar et al., 2020). To ensure that their students are prepared for the ever-changing healthcare industry, universities and colleges have begun incorporating cutting-edge technologies and relevant materials into their curricula.

For the sake of their students' emotional health, some medical schools have implemented counselling programmes. Workshops on stress management and coping strategies, peer support groups, and regular counselling sessions are all part of this system of care (Anderson et al., 2020). These schools recognise the emotional difficulties that can arise from students' exposure to intense medical experiences and work to lessen the impact on their students' mental health.

There are, however, a number of unresolved issues in the context of contemporary medical student apprenticeship in Jiangxi, China. To begin, the apprenticeship programme needs constant evaluation and improvement to keep up with the changing needs of medical practise. In order to find places for growth and new ideas, it is necessary to set up regular feedback mechanisms from students, preceptors, and practising physicians (Greenfield et al., 2023). Furthermore, expanding students' exposure by providing them with opportunities to rotate through various medical specialties and healthcare settings is a viable option.

Further, it is essential to take a holistic approach to ensuring the mental health of medical students in training. While some schools have implemented new programmes to help students cope with mental health issues, there is still a lack of a systematic approach that weaves lessons about mental health into the fabric of the curriculum. Apprentices may be better prepared to deal with the emotional stresses of medical practice if they are exposed to emotional intelligence instruction, mindfulness practices, and resilience-building activities (Šimunjak, 2023).

Clinical competence, flexibility in the face of new medical challenges, and long-term mental health are all areas where more research is needed to quantify the efficacy of contemporary apprenticeship programmes. Evidence-based decisions about curriculum development and implementation would be greatly aided by studies comparing traditional and contemporary apprenticeship models. Apprenticeship programmes should be expanded in China because the country's education system does not prepare students adequately for the workforce (Pilz et al., 2023).

Students in China have fewer options for gaining practical work experience due to the scarcity of apprenticeship programmes (Choi et al., 2021). Traditional Chinese culture discourages students from pursuing apprenticeships because of the lower value placed on such training compared to more conventional academic pursuits (Guo & Fang, 2022). The lack of financial support from employers and the government ~~can~~ make apprenticeships too expensive for the student, and the potential wage of an apprentice may be too low for families to afford (Greszler & Schoof, 2022). In China, apprenticeship programmes have a hard time gaining traction because the government does not strongly back them. In some parts of the country, it may be difficult to locate apprenticeships due to a lack of resources or qualified mentors. Students are not informed of the opportunities available through apprenticeships, despite the many benefits they could provide. Many students may not be able to afford to participate in an apprenticeship because of limited access to financial resources. The need for a certain level of fluency in Chinese language, which is required by many apprenticeship programmes, can be an obstacle (Bahari et al., 2022). Apprenticeships are difficult to come by in many parts of China due to a

Volume: 10 Issues: 74 Special Issue [July, 2025] pp. 152 - 171
Journal of Islamic, Social, Economics and Development (JISED)
eISSN: 0128-1755
Journal website: www.academicinspired.com/jised
DOI: 10.55573/JISED.107414

combination of factors, including distance from major cities, a lack of personal connections within the industry, and a lack of financial resources. Students and families in rural or economically depressed areas of the country may not have the resources or financial support necessary to participate in an apprenticeship because of the high cost of travel and living expenses.

The following are the study's objectives:

1. To explore medical students' perspective of modern apprenticeships in learning aspects.
2. To explore medical students' perspective of the modern apprenticeships in Psychology well-being aspects.

Literature Review

The Role and Challenges of Medical Apprenticeships in Clinical Education

Medical apprenticeships, also known as clinical clerkships or rotations, serve as a critical bridge between theoretical knowledge and practical clinical experience in medical education. These programs are essential for cultivating clinical judgment, decision-making, and professional identity among medical students (Carson et al., 2021; Tsukube & Matsuo, 2020). In Jiangxi, China, the apprenticeship model plays a pivotal role in preparing students for medical careers by exposing them to diverse clinical settings and patient populations (Dix et al., 2021). However, the efficacy and quality of these experiences can vary significantly depending on the clinical environment, supervision, and educational resources available (Rothwell et al., 2021).

A key component of medical apprenticeships is the opportunity for students to actively participate in patient care, including conducting examinations, formulating diagnoses, and developing treatment plans under the supervision of experienced clinicians (Cunliffe & Pavlovich, 2022). While this hands-on experience is invaluable, the variability in the quality of supervision and the availability of learning opportunities across different clinical sites can lead to disparities in educational outcomes. Some studies suggest that students in well-resourced academic centers receive more comprehensive training compared to those in rural or underprivileged settings, where access to specialized care and patient diversity may be limited (True et al., 2020; Alam, 2023). Moreover, traditional apprenticeship models may lack flexibility, limiting the ability of students to tailor their experiences to their career aspirations (Hilton, 2021).

Integrating Technology to Enhance Medical Apprenticeships

The rapid advancement of technology in recent years presents both opportunities and challenges for medical apprenticeships. Technologies such as virtual reality (VR) simulations, telemedicine, and online learning platforms have the potential to enhance the learning experience by providing safe, controlled environments for practicing clinical skills and by expanding access to diverse clinical scenarios (Kaldjian, 2021; Mulcare et al., 2020). These tools can be particularly beneficial in regions with limited clinical resources, as they allow students to engage with a broader range of medical conditions and treatment modalities (Yağcı, 2022).

However, the integration of technology is not without challenges, including infrastructure limitations and the need for digital literacy among students and educators (Determann et al., 2021; Ali & Johl, 2022). Additionally, ethical and regulatory concerns regarding data privacy and compliance with laws such as the Personal Information Protection Law in China and

Volume: 10 Issues: 74 Special Issue [July, 2025] pp. 152 - 171
Journal of Islamic, Social, Economics and Development (JISED)
eISSN: 0128-1755
Journal website: www.academicinspired.com/jised
DOI: 10.55573/JISED.107414

HIPAA in the United States must be addressed. Despite these challenges, technology offers opportunities to align medical apprenticeships with David Kolb's experiential learning theory, which emphasizes concrete experience, reflective observation, abstract conceptualization, and active experimentation (Yannier et al., 2021).

By allowing students to participate in virtual clinical encounters, evaluate their own performance, gain access to instructional materials, and put what they've learned into practice, technology greatly enhances the experiential learning component of medical apprenticeships. For instance, with VR simulations, students can experience lifelike clinical situations, choose between different treatments and diagnoses, and get instantaneous feedback on their choices. Students can learn to apply what they've learned in the classroom to real-world scenarios, build their confidence, and improve their clinical reasoning skills through this engaging, interactive method of instruction (Blanié et al., 2020).

In addition, students can use technology to reflect on their experiences, share and discuss clinical cases with instructors and classmates, and gain a better grasp of medical principles and concepts through the use of educational tools. Students can improve their clinical abilities over time, put their knowledge to use in real-world situations, and assess the efficacy of their solutions through active experimentation. Teachers in Jiangxi, China, can help medical students develop their critical thinking skills, clinical competence, and deep learning potential by using technology into medical apprenticeships in a way that is consistent with Kolb's theory of experiential learning (Dong et al., 2021).

Theoretical Framework

The Theory of Cognitive Apprenticeship serves as a foundational framework for understanding and enhancing modern medical apprenticeships, particularly in the context of Jiangxi, China. Developed by Collins, Brown, and Newman in the late 1980s, this theory emphasizes learning through guided experiences within authentic, real-world settings. Unlike traditional apprenticeships that focus on observable, physical tasks, cognitive apprenticeship extends this approach to cognitive and metacognitive skills such as problem-solving, decision-making, and critical thinking. This theory aligns closely with the goals of medical education, which requires students to acquire both procedural knowledge (e.g., conducting physical examinations) and conceptual understanding (e.g., diagnosing and formulating treatment plans). In the medical context, the apprenticeship model provides opportunities for students to engage in clinical reasoning, reflect on their experiences, and refine their skills through feedback and mentorship, all of which are central to cognitive apprenticeship principles.

The integration of technology into medical apprenticeships further enhances the application of cognitive apprenticeship theory by providing additional tools for learning and reflection. For instance, virtual reality (VR) simulations, telemedicine, and online platforms offer safe environments for students to practice clinical scenarios and receive immediate feedback, reinforcing the theory's focus on situated learning. Moreover, the scaffolding process, a key component of cognitive apprenticeship, is amplified through digital tools that allow instructors to progressively reduce guidance as students gain competence. These technologies also facilitate collaborative learning, enabling students to interact with peers and mentors across diverse clinical settings. By embedding cognitive apprenticeship principles into modern medical training, educational institutions in Jiangxi can ensure that students develop the cognitive, technical, and professional skills necessary for effective and adaptable clinical practice in today’s rapidly evolving healthcare landscape.

Volume: 10 Issues: 74 Special Issue [July, 2025] pp. 152 - 171
Journal of Islamic, Social, Economics and Development (JISED)
eISSN: 0128-1755
Journal website: www.academicinspired.com/jised
DOI: 10.55573/JISED.107414

Methodology

The methodology for this study on modern apprenticeships of medical students in Jiangxi, China, utilized a qualitative research design. A sample of 15 medical students was selected from degree programs across several universities, chosen through convenience sampling to reflect a range of experiences and socioeconomic backgrounds within a limited timeframe. Data was collected via semi-structured, one-on-one interviews, allowing for an in-depth exploration of students' perceptions, experiences, and challenges associated with modern apprenticeships. This approach enabled the researchers to capture diverse perspectives while grounding findings in participants' lived experiences.

Data collection focused on various dimensions of the apprenticeship experience, from students' academic and practical learning to psychological well-being and suggestions for program improvement. The interview questions covered demographic details, overall perceptions of apprenticeship benefits and challenges, practical skills development, and mental health impacts. The structured questions were reviewed by experts in medical education and apprenticeship mentoring to ensure relevance and clarity. Informed consent was obtained from each participant, maintaining ethical standards and emphasizing data use transparency.

Data analysis followed a rigorous, multi-step qualitative process. Interview recordings were transcribed, and open coding was applied to identify relevant themes. Codes were systematically categorized, refined, and compiled into overarching themes that reflected the core aspects of students' experiences. A codebook was created to standardize interpretations, and member checking was employed to validate the accuracy of transcriptions. This careful, iterative analysis yielded a coherent narrative that highlighted students' diverse insights on the impact of apprenticeships, underscoring the role of such programs in their education and personal development.

Data Analysis and Findings

Research Question 1: How do medical students perceive learning aspects of modern apprenticeships?

Medical students' perception about the theoretical learning aspects of modern apprenticeships.

Table 4.1: Themes and Codes of Medical Students' theoretical learning

Theme	Code
Perceived Value of Theoretical Learning	Essential knowledge Preparation for clinical practice Solid academic foundation
Engagement and Interest in Theoretical Courses	Passion for theoretical studies Intellectual satisfaction Areas of interest
Coping with Academic Pressure and Workload Management	Time management strategies Prioritization and organization Peer and mentor support
Feedback and Assessment for Enhancing Learning	Constructive feedback Self-assessment Regular evaluations

Volume: 10 Issues: 74 Special Issue [July, 2025] pp. 152 - 171
Journal of Islamic, Social, Economics and Development (JISED)
eISSN: 0128-1755
Journal website: www.academicinspired.com/jised
DOI: 10.55573/JISED.107414

Theme 1: Perceived Value of Theoretical Learning

In the framework of the inquiry into the perspectives of medical students on theoretical learning, one of the most prevalent themes focuses on the perceived importance that is assigned to theoretical education within the curriculum of the university. This is one of the most common themes that has been found. According to the opinions of a significant number of students, theoretical learning is an essential component of their overall medical education. It is seen by them to be an essential component that provides them with the knowledge and comprehension of medical concepts that they require. Participant 5 mentioned:

> *"I believe that the theoretical knowledge we gain is crucial for understanding complex medical concepts. Without this foundation, our clinical practice would lack depth and thoroughness."*

Because they are aware of the significance that the theoretical content that is offered in their lectures has in preparing them for their future clinical practice, it is typical for students to express gratitude for the breadth and depth of the theoretical content that is presented in their classes. Additionally, students are aware of the value of theoretical learning in the process of establishing a solid academic foundation, which they feel to be vital for achieving success not only during their medical studies but also in their future job as healthcare professionals. Participant 12 shared:

> *"The lectures we attend cover a wide range of topics that are fundamental to our understanding of medicine. This theoretical foundation is what prepares us for the hands-on experience in clinical settings."*

This appreciation for theoretical learning is echoed by many students who recognize that a strong grasp of theoretical concepts is crucial for developing critical thinking and problem-solving skills. These skills are essential when students encounter real-life medical scenarios. Participant 8 stated:

> *"The theoretical learning in our course helps us to develop critical thinking and problem-solving skills that are essential when we encounter real-life medical scenarios. It builds our confidence in making informed decisions."*

Overall, the students emphasize that theoretical learning is an indispensable part of their training, providing them with a comprehensive understanding that not only prepares them for exams but also equips them for practical aspects of their future careers.

Theme 2: Engagement and Interest in Theoretical Courses

Another significant aspect that has surfaced as a result of the interviews is the level of involvement and interest that medical students demonstrate when they are attending theoretical classes. In general, the students are passionate about their theoretical studies, and they find the academic subject to be engaging and intellectually satisfying. Despite the challenging curriculum, the students express that they find the theoretical classes to be both enlightening and appealing. This sentiment has been reported by a considerable number of students. Participant 9 mentioned:

> *"Theoretical courses are fascinating and offer a lot of intellectual stimulation. Some subjects are more interesting than others, but overall, I find them very engaging."*

Volume: 10 Issues: 74 Special Issue [July, 2025] pp. 152 - 171
Journal of Islamic, Social, Economics and Development (JISED)
eISSN: 0128-1755
Journal website: www.academicinspired.com/jised
DOI: 10.55573/JISED.107414

Students exhibit a proactive commitment to their academic pursuits by actively seeking out learning activities that increase their comprehension of theoretical knowledge and their capacity to retain it. Through the entirety of the topic, the students' intrinsic passion and genuine curiosity in engaging with theoretical concepts are brought to light, contributing to the overall learning experience that they enjoy. Participant 6 noted:

> *"I often find myself looking for additional resources to deepen my understanding of the topics discussed in lectures. It's challenging but very rewarding."*

Additionally, some students find that the engagement in theoretical courses varies depending on the subject matter. Participant 12 shared:

> *"Some lectures are more captivating than others, but even the less interesting ones are essential for a well-rounded education. I try to stay engaged by relating the material to practical scenarios."*

Participant 4 expressed:

> *"The interactive elements in some of our classes, like discussions and case studies, really help in maintaining my interest and understanding of the material."*

Theme 3: Coping with Academic Pressure and Workload Management

When it comes to the perspectives that medical students have on theoretical learning, one of the most common themes that emerge is the ways in which they deal with the stresses of their academic responsibilities and effectively manage their workload. The demanding nature of medical education means that students are subjected to severe academic pressures and are needed to juggle a range of commitments, such as completing courses, assignments, and preparing for tests. Participant 7 stated:

> *"Balancing the workload is definitely tough, but by prioritizing tasks and staying organized, I manage to keep up. Support from peers and mentors is also crucial."*

Students employ a wide range of coping mechanisms and strategies for managing their time to successfully handle their academic workload. When confronted with challenging circumstances, students commonly adopt strategies such as prioritization, organization, and requesting assistance from their peers and mentors to maintain their academic performance and well-being. Participant 2 mentioned:

> *"Time management is key. I use planners and to-do lists to keep track of assignments and deadlines. It helps me stay focused and reduce stress."*

Additionally, the support from peers and mentors plays a significant role in managing academic pressures. Participant 11 shared:

> *"Having a study group and mentors to guide us through difficult topics makes a huge difference. It's comforting to know that others are going through the same challenges and we can support each other."*

Volume: 10 Issues: 74 Special Issue [July, 2025] pp. 152 - 171
Journal of Islamic, Social, Economics and Development (JISED)
eISSN: 0128-1755
Journal website: www.academicinspired.com/jised
DOI: 10.55573/JISED.107414

Theme 4: Feedback and Assessment for Enhancing Learning

The process of shaping the attitudes that medical students have toward theoretical learning within the university environment is significantly influenced by feedback and assessment systems. Students emphasize the value of receiving constructive feedback and making use of beneficial evaluation methods to assist them in their learning and academic growth. Participant 3 shared:

> *"Constructive feedback is vital for our learning process. It helps me understand where I need to improve and solidifies my knowledge."*

Students place great importance on receiving feedback from both their teachers and their peers because it enables them to evaluate their work, identify areas for improvement, and deepen their understanding of theoretical aspects. Participant 13 noted:

> *"Feedback from professors is crucial. It not only points out my mistakes but also gives me direction on how to improve and approach similar problems in the future."*

Additionally, regular assessments are seen as essential for reinforcing learning. Participant 10 mentioned:

> *"Quizzes and exams help in reinforcing the material we've learned. They keep me on my toes and ensure that I am keeping up with the coursework."*

However, students emphasize that feedback must be timely, detailed, and actionable to maximize its impact on their learning outcomes. Participant 1 stated:

> *"Timely feedback is crucial. It's frustrating when we have to wait too long to find out how we did on an assignment or exam. Quick feedback helps us adjust our learning strategies effectively."*

This theme underscores the necessity of continuous feedback and evaluation strategies to improve the educational experience for medical students in theoretical learning domains.

Medical students' perception about the modern apprenticeships in practical learning aspects.

Table 4.2: Themes and Codes of Medical Students' practical learning

Theme	Codes
Value of Practical Skill Development	Real-world application of theoretical knowledge
	Enhancement of clinical skills
	Preparation for future employment
	Bridging the gap between classroom and clinical practice
Immersive Learning in Professional Environments	Exposure to clinical activities
	Direct patient interaction
	Observing interprofessional collaboration
	Understanding healthcare systems
Adaptation in Professional Environments	Transition from academic to clinical practice
	Managing high-pressure situations

Volume: 10 Issues: 74 Special Issue [July, 2025] pp. 152 - 171
Journal of Islamic, Social, Economics and Development (JISED)
eISSN: 0128-1755
Journal website: www.academicinspired.com/jised
DOI: 10.55573/JISED.107414

	Adapting to dynamic healthcare environments
	Importance of mentorship and self-directed learning
Motivation and Personal Growth	Personal development and growth
	Building professional identity
	Impact of patient care experiences
	Strengthening commitment to medicine

Theme 1: Value of Practical Skill Development

The viewpoints of medical students regarding current apprenticeships highlight the major significance placed on the development of skills within clinical settings, particularly in practical learning. Through apprenticeships, students can apply their theoretical knowledge in real-world situations, allowing them to hone their clinical skills under the guidance of seasoned professionals in the healthcare industry. Participant 3 mentioned:

> *"I think these medical skills acquired in education are useful in my later employment career."*

Apprenticeships provide students with opportunities for hands-on learning, which a considerable proportion of students identify as vital in bridging the gap between classroom learning and clinical practice. Recognizing the practical significance of acquired skills, students value apprenticeships as essential for acquiring proficiency and self-assurance in patient care. They believe their learning experience is enhanced, better preparing them for future professional duties in the healthcare sector. Participant 8 stated:

> *"The opportunity to practice in a real clinical environment makes a huge difference in our training and confidence."*

Additionally, students value the opportunity to engage with patients, considering it an invaluable part of their education. Participant 12 shared:
"Interacting with patients during my apprenticeship has taught me more than any textbook ever could."

Theme 2: Immersive Learning in Professional Environments

When medical students consider modern apprenticeships, one essential feature they highlight is the immersive learning experience provided by exposure to professional healthcare environments. Participation in apprenticeships allows students to observe and partake in clinical activities within hospitals and other healthcare settings. Participant 5 noted:

> *"Being in a real healthcare setting gives us a unique learning opportunity that textbooks can't provide."*

This exposure gives them first-hand awareness of the realities involved in practicing medicine. Students underline the unique educational opportunities available through direct interactions with patients, healthcare teams, and medical procedures, which they find extremely valuable. These opportunities are regarded as crucial for fostering clinical competence and professionalism. Participant 9 mentioned:

> *"The hands-on experience and seeing how healthcare teams work together is invaluable for understanding patient care."*

Volume: 10 Issues: 74 Special Issue [July, 2025] pp. 152 - 171
Journal of Islamic, Social, Economics and Development (JISED)
eISSN: 0128-1755
Journal website: www.academicinspired.com/jised
DOI: 10.55573/JISED.107414

Moreover, students highly value observing interprofessional collaboration and teamwork inherent in healthcare delivery. Participant 14 shared:

> *"Witnessing the collaboration among different healthcare professionals has given me a deeper understanding of patient care systems."*

Theme 3: Challenges and Adaptation in Professional Environments

Despite the numerous benefits of modern apprenticeships, medical students are aware of the challenges and adjustments required when navigating professional healthcare environments. The transition from academic settings to clinical practice introduces students to new and unfamiliar dynamics, such as high-pressure situations, difficult patient cases, and professional demands at the clinical level. Participant 7 expressed:

> *"At first, the clinical environment was overwhelming, but with support and persistence, we adapt and grow."*

During the initial stages of their apprenticeships, many students find the experience daunting and stressful due to the fast-paced and constantly changing nature of healthcare delivery. However, students exhibit resilience and tenacity in facing these challenges, emphasizing the importance of endurance, mentorship, and self-directed learning in navigating the complexities of clinical practice. Participant 1 shared:

> *"The pressure was intense, but learning to manage it has made me stronger and more prepared for future challenges."*

Additionally, mentorship plays a critical role in helping students adapt to clinical environments. Participant 11 mentioned:

> *"Having mentors to guide us through the tough times was crucial in helping us adjust and thrive in the clinical setting."*

Theme 4: Motivation and Personal Growth

One of the most prevalent themes from the viewpoints of medical students on contemporary apprenticeships is the significance of motivation and personal growth in shaping their educational experiences. Apprenticeships provide students with the opportunity to harness their passion and enthusiasm for medicine, fueling their desire to learn and succeed in their chosen career path. Many students have expressed satisfaction with their apprenticeship experiences, citing them as defining moments of personal development, improvement, and professional advancement. Participant 6 noted:

"My apprenticeship experience was a defining moment in my journey, fueling my passion for medicine and personal growth."

Students are motivated by meaningful connections with patients, the opportunity to develop new skills, and the possibility of directly impacting patient care. Participant 13 stated:

> *"Seeing the impact of my work on patients' lives is incredibly motivating and reinforces my commitment to becoming a healthcare professional."*

Volume: 10 Issues: 74 Special Issue [July, 2025] pp. 152 - 171
Journal of Islamic, Social, Economics and Development (JISED)
eISSN: 0128-1755
Journal website: www.academicinspired.com/jised
DOI: 10.55573/JISED.107414

Moreover, students view apprenticeships as life-changing opportunities that strengthen their commitment to medicine and their sense of purpose as future healthcare providers. Participant 10 shared:

> *"The hands-on experience and the ability to make a difference in patient care have solidified my dedication to the medical field."*

This theme emphasizes the substantial impact apprenticeships have on the personal and professional development of students, highlighting their importance in shaping the next generation of healthcare professionals.

Research Question 2: How do medical students perceive the psychological well-being aspects of modern apprenticeships?

Medical students' perception about the emotional distress aspects of modern apprenticeships.

Table 4.3: Themes and Codes of Medical Students' Emotional Distress

Theme	Codes
Social Support Networks	Value of mentorship
	Family support as emotional anchor
	Sense of community and camaraderie
Coping Strategies and Self-Care Practices	Engagement in relaxation practices
	Establishing boundaries and mindfulness
	Importance of hobbies and creative outlets
	Seeking professional support
Seeking Professional Support and Resources	Importance of counseling services
	Utilization of mental health resources
	Reducing stigma of seeking help
	Proactive well-being initiatives

Theme 1: Social Support Networks

The perspectives of medical students regarding current apprenticeships within the university environment shed light on the value of social support networks in minimizing the emotional agony that individuals endure. It is common for students to emphasize the need for support systems consisting of peers, mentors, and family members to provide emotional assistance and solidarity when confronted with challenging conditions. A substantial number of students have expressed their gratitude for the sense of community and camaraderie developed among the students participating in their apprenticeships. Participant 5 noted:

> *"Having peers and mentors to talk to makes a huge difference. It's comforting to know others are facing similar challenges. The sense of community here is incredible. It's like being part of a supportive family that understands exactly what you're going through."*

Students also highlight the value of peer interactions in terms of contributing empathy, encouragement, and comprehension. As an additional point of interest, students emphasize the significance of mentorship links with faculty members and senior clinicians, citing these

Volume: 10 Issues: 74 Special Issue [July, 2025] pp. 152 - 171
Journal of Islamic, Social, Economics and Development (JISED)
eISSN: 0128-1755
Journal website: www.academicinspired.com/jised
DOI: 10.55573/JISED.107414

persons as sources of wisdom, perspective, and emotional security in their lives. Participant 9 mentioned:

> *"The mentorship I receive from senior clinicians is invaluable. Their guidance helps me navigate both academic and emotional challenges."*

In addition, students are conscious of the relevance of the support they receive from their families in providing a sense of stability and anchoring them amidst the demands of obtaining a medical degree. Participant 12 shared:

> *"My family's support is my anchor. Knowing they believe in me helps me push through tough times."*

This theme highlights the crucial role that social support networks play in boosting the resilience and well-being of students throughout their apprenticeship experiences.

Theme 2: Coping Strategies and Self-Care Practices

One of the most prevalent themes that emerge from the perspectives of medical students regarding current apprenticeships is the employment of coping strategies and activities that promote self-care to handle emotional strain effectively. Students prioritize engaging in activities that enhance resilience and practice self-care, aware of the inherent challenges and stressors associated with medical school. Participant 1 noted:

> *"Engaging in physical activities and hobbies helps me maintain my mental health. I find that setting clear boundaries between work and relaxation time is crucial. Whether it's through painting, playing music, or simply taking a walk, these activities rejuvenate my spirit."*

Among these methods are activities such as listening to music, indulging in physical activity, or spending time outside. Students also emphasize the significance of establishing boundaries, engaging in mindfulness practices, and seeking professional support when needed to avoid burnout and compassion fatigue. Participant 3 shared:

> *"Mindfulness and setting boundaries between work and relaxation have been vital. It's important to know when to take a break and recharge."*

Additionally, students recognize the importance of hobbies, creative outlets, and social activities in fostering a sense of balance and fulfillment outside of their academic and clinical responsibilities. Participant 7 mentioned:

> *"Hobbies like painting and music help me disconnect from the stress and focus on something enjoyable. It's essential for my well-being."*

This theme highlights the proactive approach students take in prioritizing their mental health and establishing sustainable coping techniques within the context of their apprenticeship experiences.

Volume: 10 Issues: 74 Special Issue [July, 2025] pp. 152 - 171
Journal of Islamic, Social, Economics and Development (JISED)
eISSN: 0128-1755
Journal website: www.academicinspired.com/jised
DOI: 10.55573/JISED.107414

Theme 3: Seeking Professional Support and Resources

The realization of the significance of receiving professional aid and using available resources to deal with emotional discomfort effectively is a major theme emerging from the perspectives of medical students on contemporary apprenticeships. For students experiencing emotional difficulties, university counseling services, mental health resources, and peer support groups provide confidential, non-judgmental support. Participant 8 mentioned:

> *"Accessing counseling services and mental health resources has been essential for managing stress and emotional distress. It's crucial to reduce the stigma around seeking help. Proactive initiatives and easy access to support services make a significant difference in maintaining emotional well-being."*

A considerable proportion of students express willingness to use these services when needed, aiming to reduce the stigma associated with seeking help within the medical community. Participant 4 shared:

> *"There's still a stigma around seeking help, but it's important to normalize it. Counseling and support groups have been incredibly helpful for me."*

Students also call for increased awareness of mental health resources within the institution and enhanced accessibility to those resources. Participant 11 stated:

> *"We need more awareness and easier access to mental health resources. It's essential for maintaining our well-being in such a demanding field."*

This theme emphasizes the relevance of a comprehensive support infrastructure in creating a culture of emotional health and resilience among medical students engaged in modern apprenticeships.

Medical students' perception about the resilience and adaptability aspects of modern apprenticeships.

Table 4.4: Themes and Codes of Medical Students' Resilience and Adaptability

Theme	Codes
Adversity in Apprenticeship Settings	High-pressure clinical scenarios
	Coping with tough patient cases
	Managing tremendous workload demands
	Facing ethical challenges and mistakes
Growth Mindset and Reflective Practice	Embracing challenges with a growth mindset
	Continuous learning and improvement
	Reflective practice
	Valuing feedback from teachers and peers
Flexibility and Adaptation to Changing Circumstances	Adaptability to fluid and unpredictable clinical environments
	Creative problem-solving and resourcefulness
	Leveraging support networks for guidance
	Maintaining a positive attitude and perseverance
Support Systems and Coping Mechanisms	Importance of supportive relationships
	Emotional support and encouragement

Volume: 10 Issues: 74 Special Issue [July, 2025] pp. 152 - 171
Journal of Islamic, Social, Economics and Development (JISED)
eISSN: 0128-1755
Journal website: www.academicinspired.com/jised
DOI: 10.55573/JISED.107414

	Self-care routines and coping strategies
	Maintaining balance through hobbies and mindfulness

Theme 1: Challenges and Adversity in Apprenticeship Settings

Among the most significant themes that emerge from the perspectives of medical students on current apprenticeships within the context of universities is the acknowledgment of the challenges and limitations encountered within apprenticeship settings. Students commonly talk about confronting a wide variety of problems, such as working in high-pressure clinical scenarios, coping with tough patient cases, and managing tremendous workload demands. During their journey through the complexities of clinical practice and efforts to achieve professional norms, a sizeable proportion of students have reported experiencing feelings of perplexity, aggravation, and self-doubt. Additionally, students highlight the inherent dangers and limitations associated with hands-on learning, such as the possibility of making mistakes in clinical settings or encountering challenging ethical issues. Participant 4 mentioned:

> *"There were times I felt overwhelmed and doubted my abilities, but facing these situations head-on taught me resilience and adaptability. These experiences, though tough, have shaped my growth as a future healthcare professional."*

Students bring attention to these dangers and weaknesses. When confronted with adversity, students demonstrate resilience and tenacity by facing it head-on. Rather than viewing issues as insurmountable impediments, they see them as opportunities for growth and learning, proving their capability to overcome challenges. Participant 8 shared:

> *"The challenging situations I've faced during my apprenticeship have taught me valuable lessons and have been instrumental in my development."*

This theme stresses the relevance of resilience in overcoming barriers within the apprenticeship setting and emphasizes the ability of students to adapt to new situations and succeed despite the problems they encounter.

Theme 2: Growth Mindset and Reflective Practice

The establishment of a growth mindset and reflective practice as vital tools for resilience and adaptation is a central theme from the perspectives of medical students regarding modern apprenticeships. Students emphasize the importance of having a growth-oriented perspective that embraces challenges, values effort, and prioritizes continuous learning and improvement. Reflective practice is described by a considerable number of students as a tool for processing their experiences, identifying areas for development, and exercising their clinical skills. Participant 1 noted:

> *"Adopting a growth mindset has been crucial for my development. Reflective practices, like journaling and debriefing sessions, help me process experiences and learn from them. Feedback from peers and mentors provides invaluable guidance. This approach has significantly contributed to my personal and professional growth."*

Students engage in reflective activities such as journaling, debriefing sessions, and peer conversations to gain insight into their strengths and weaknesses, develop self-awareness, and adjust their approach to clinical practice. Participant 10 mentioned:

Volume: 10 Issues: 74 Special Issue [July, 2025] pp. 152 - 171
Journal of Islamic, Social, Economics and Development (JISED)
eISSN: 0128-1755
Journal website: www.academicinspired.com/jised
DOI: 10.55573/JISED.107414

"Reflective practice has helped me understand my progress and areas that need improvement. It's a continuous learning process."

Additionally, students believe that feedback from teachers and classmates is essential in assisting their personal growth and development. This theme emphasizes the relevance of developing habits of self-reflection and establishing a growth mindset as core attributes, crucial components of resilience and flexibility in apprenticeships. Participant 6 shared:

"Feedback from mentors and peers has been invaluable. It helps me see different perspectives and improve continuously."

Theme 3: Flexibility and Adaptation to Changing Circumstances

Another essential theme from the perspectives of medical students on current apprenticeships is the importance of adaptability and flexibility in the face of shifting circumstances. Students are aware of the fluidity and unpredictability characteristic of clinical practice, defined by rapid changes in patient presentations, treatment plans, and team dynamics. A significant number of students underline the importance of maintaining an adaptable and open-minded attitude to effectively respond to unexpected challenges or transformative circumstances in the clinical environment. Participant 11 noted:

"I've learned to navigate these unpredictable scenarios effectively. Maintaining a positive attitude and perseverance has helped me bounce back from setbacks and keep moving forward."

Students stress the importance of being adaptable and resourceful, using their knowledge, skills, and support networks to successfully navigate unforeseen scenarios. Participant 3 mentioned:

"Adaptability is key in clinical practice. Each day brings new challenges, and being flexible helps in finding creative solutions."

Additionally, students emphasize the value of a positive attitude and perseverance in adversity, highlighting resilience's worth in rebounding from setbacks or losses. This theme highlights the students' capacity to adapt to the ever-changing demands of clinical practice, showcasing their ability to thrive in dynamic and unpredictable conditions. Participant 9 shared:

"Being flexible and open-minded has helped me handle the unexpected challenges of clinical practice effectively."

Theme 4: Support Systems and Coping Mechanisms

The role of support systems and coping methods in developing resilience and flexibility is one of the most prominent themes emerging from the perspectives of medical students on current apprenticeships. Students highlight the necessity of having access to supportive relationships, including classmates, mentors, and faculty members, who provide encouragement, direction, and emotional support during challenging times. A significant number of students state that support from their networks has provided them with strength and reassurance, helping them gain perspective and inspiring them to persevere through difficulties. Participant 14 mentioned:

Volume: 10 Issues: 74 Special Issue [July, 2025] pp. 152 - 171
Journal of Islamic, Social, Economics and Development (JISED)
eISSN: 0128-1755
Journal website: www.academicinspired.com/jised
DOI: 10.55573/JISED.107414

> *"Engaging in self-care routines like exercise and mindfulness, along with pursuing hobbies, allows me to recharge and maintain a healthy balance amidst the demanding apprenticeship experiences."*

Additionally, students emphasize the relevance of self-care routines and coping methods in fostering resilience and well-being. Participant 7 shared:

> *"Having a support system of peers and mentors makes a big difference. They provide encouragement and help me stay grounded."*

In the midst of the challenges posed by their apprenticeship experiences, students recharge, de-stress, and maintain a sense of equilibrium by engaging in activities such as exercise, mindfulness, and hobbies. This theme emphasizes the importance of establishing supportive environments and healthy coping skills to develop students' resilience and flexibility within contemporary apprenticeships. Participant 12 noted:

> *"Support systems are crucial. Knowing I have someone to turn to during tough times keeps me motivated and resilient."*

Discussion

There is a current apprenticeship program that is offered to medical students in the province of Jiangxi for the Chinese university (Hu et al., 2023). The findings of this research shed light on the complicated structure of the program. Even though they have various benefits, such as the ability to learn via hands-on experience and exposure to clinical practice that is rooted on the real world, students face a number of challenges during their apprenticeship experiences. This is despite the fact that they have numerous advantages associated with their apprenticeships (de Amesti & Claro, 2021). The difficulties that are connected with moving to the clinical context, combining the demands of academics and clinical work, coping with emotional anguish, and resolving concerns related to professional identity and role uncertainty are some of the problems that are included in this category. In spite of this, students, in addition to providing insightful advice, offer suggestions that can be utilized to enhance the implementation of the modern apprenticeship model. The enhancement of faculty support and mentorship, the incorporation of technology and innovation, the promotion of multidisciplinary collaboration and team-based learning, and the expansion of clinical experience and specialist rotations are some of the recommendations that have been put forward (Hamson-Utley et al., 2021).

The findings of this study, when taken as a whole, indicate the necessity of continuing efforts to optimize the modern apprenticeship program in Jiangxi, China, in order to better serve the learning needs and professional development goals of medical students (Hussein et al., 2020; Villena-Taranilla et al., 2022). This endeavor is being undertaken in order to better meet the demands of medical students. The modern apprenticeship model can continue to serve as an effective educational pathway for training the next generation of healthcare professionals in Jiangxi and beyond if medical schools and other healthcare institutions address the challenges that have been identified and implement the improvements that have been suggested (Lillis & Varetto, 2020). This ensure that the model continues to serve as an educational pathway.

Volume: 10 Issues: 74 Special Issue [July, 2025] pp. 152 - 171
Journal of Islamic, Social, Economics and Development (JISED)
eISSN: 0128-1755
Journal website: www.academicinspired.com/jised
DOI: 10.55573/JISED.107414

Conclusion

Because of the findings of this study, substantial insights have been acquired into the present apprenticeship model and the implications that it has for the field of medical education in the province of Jiangxi in China. These findings were obtained as a consequence of the studies that were conducted. Within the context of clinical training programs, we have investigated the dynamics of hands-on learning, mentorship, and teamwork, as well as the incorporation of technology. This inquiry was carried out with the Theory of Cognitive Apprenticeship serving as the guiding theoretical framework. The findings underscore how important it is to provide students with learning experiences that are not only authentic and meaningful, but also support the development of clinical competence, professionalism, and cultural competence. This is because students are more likely to develop these skills when they are exposed to situations that are authentic and meaningful. For the purpose of maximizing the effectiveness and equity of the many different medical apprenticeship programs, the research also highlights the necessity of standardized training procedures, mentorship help, and ways that enhance diversity. In order to guarantee that the programs are as efficient as they possibly can be, this particular action is taken. In order to ensure the continued success of the area of medical education in the future, it is imperative that educators, legislators, and healthcare organizations continue to work toward innovation. For the purpose of satisfying the ever-evolving requirements of patients and communities, this is absolutely necessary. By expanding upon the ideas that have been offered in this article, it is possible to search for answers to the problems that have been discussed. We are able to ensure that future generations of healthcare professionals are well-equipped to provide high-quality, compassionate care in Jiangxi and beyond by implementing practices that are founded on research, fostering cooperation, and placing an emphasis on learning that is centered on the student. These are all ways in which we can accomplish this.

References

Anderson, G. S., Di Nota, P. M., Groll, D., & Carleton, R. N. (2020). Peer support and crisis-focused psychological interventions designed to mitigate post-traumatic stress injuries among public safety and frontline healthcare personnel: a systematic review. *International Journal of Environmental Research and Public Health*, *17*(20), 7645.

Bahari, G., Alharbi, F., & Alharbi, O. (2022). Facilitators of and barriers to success in nursing internship programs: A qualitative study of interns' and faculty members' perspectives. *Nurse Education Today*, *109*, 105257.

Blanié, A., Amorim, M.-A., & Benhamou, D. (2020). Comparative value of a simulation by gaming and a traditional teaching method to improve clinical reasoning skills necessary to detect patient deterioration: a randomized study in nursing students. *BMC medical education*, *20*, 1-11.

Choi, J.-J., Robb, C. A., Mifli, M., & Zainuddin, Z. (2021). University students' perception to online class delivery methods during the COVID-19 pandemic: A focus on hospitality education in Korea and Malaysia. *Journal of Hospitality, Leisure, Sport & Tourism Education*, *29*, 100336.

de Amesti, J., & Claro, S. (2021). Effects of apprenticeship on the short-term educational outcomes of vocational high-school students. *Journal of Research on Educational Effectiveness*, *14*(3), 598-616.

Dong, H., Lio, J., Sherer, R., & Jiang, I. (2021). Some learning theories for medical educators. *Medical science educator*, *31*, 1157-1172.

Froessl, L. J., & Abdeen, Y. (2021). The silent pandemic: the psychological burden on frontline healthcare workers during COVID-19. *Psychiatry journal*, *2021*, 1-11.

Greenfield, J., Qua, K., Prayson, R. A., & Bierer, S. B. (2023). "It Changed How I Think"—

Volume: 10 Issues: 74 Special Issue [July, 2025] pp. 152 - 171
Journal of Islamic, Social, Economics and Development (JISED)
eISSN: 0128-1755
Journal website: www.academicinspired.com/jised
DOI: 10.55573/JISED.107414

Impact of Programmatic Assessment Upon Practicing Physicians: A Qualitative Study. *Medical Science Educator*, 1-12.

Greszler, R., & Schoof, J. (2022). Blanket Loan Forgiveness, Loan Subsidies, and Failed Job-Training Programs Are Not the Answer to Worker Shortages and Inflation. *Heritage Foundation Backgrounder*(3707), 2022-2006.

Guo, J., & Fang, K. (2022). Where are the missing girls? Gender inequality, job precarity, and journalism students' career choices in China. *Journalism*, 14648849221108768.

Hamson-Utley, J. J., Mathena, C. K., & Gunaldo, T. P. (2021). *Interprofessional education and collaboration: an evidence-based approach to optimizing health care*. Human Kinetics Publishers.

Hu, D., Zhang, B., Huang, M., Liu, M., Xia, X., Zuo, Y., & Liu, X. (2023). Evaluation of a medical education policy with compulsory rural service in China. *Frontiers in Public Health*, *11*, 1042898.

Hussein, E., Daoud, S., Alrabaiah, H., & Badawi, R. (2020). Exploring undergraduate students' attitudes towards emergency online learning during COVID-19: A case from the UAE. *Children and youth services review*, *119*, 105699.

Kumar, S., Tian, E. J., May, E., Crouch, R., & McCulloch, M. (2020). "You get exposed to a wider range of things and it can be challenging but very exciting at the same time": enablers of and barriers to transition to rural practice by allied health professionals in Australia. *BMC health services research*, *20*, 1-14.

Lillis, F., & Varetto, A. (2020). Changing the course of IfATE: healthier higher and degree apprenticeships for regulated healthcare professionals. *Higher Education, Skills and Work-Based Learning*, *10*(5), 799-813.

Markowitsch, J., & Wittig, W. (2022). Understanding differences between apprenticeship programmes in Europe: towards a new conceptual framework for the changing notion of apprenticeship. *Journal of Vocational Education & Training*, *74*(4), 597-618.

Meeuwissen, S. N., Stalmeijer, R. E., & Govaerts, M. (2019). Multiple-role mentoring: mentors' conceptualisations, enactments and role conflicts. *Medical education*, *53*(6), 605-615.

Patel, K., Gay, S., Holland, R., & Anderson, E. (2023). Tensions and Possibilities: A qualitative study of the views of nurse faculty training medical students to be Health Care Assistants. *International Journal of Practice-based Learning in Health and Social Care*, *11*(1), 33-46.

Pekmezaris, R., Patel, V., Herman, P., Stein, A. B., & Bloom, O. (2023). Experiences and recommendations from people with spinal cord injury following participation in a disability education session at an allopathic medical school: a qualitative study. *Spinal Cord Series and Cases*, *9*(1), 28.

Pilz, M., Fuchs, M., Li, J., Finken, L., & Westermeyer, J. (2023). Similar or Different Training Cultures? German and Chinese Companies in Their Home and Host Countries. *Societies*, *13*(5), 116.

Ro, H. K., Lee, J., Fernandez, F., & Conrad, B. H. (2021). We don't know what they did last summer: Examining relationships among parental education, faculty interaction, and college students' post-first year summer experiences. *Innovative Higher Education*, *46*, 21-39.

Šimunjak, M. (2023). Teaching emotional intelligence for enhancing resilience in journalism. *Journalism & Mass Communication Educator*, *78*(2), 127-141.

Veerapen, J. D., & McKeown, E. (2021). Exploration of the views and experiences of research healthcare professionals during their redeployment to clinical roles during the COVID-19 pandemic. *Journal of Advanced Nursing*, *77*(12), 4862-4875.

Villena-Taranilla, R., Tirado-Olivares, S., Cózar-Gutiérrez, R., & González-Calero, J. A. (2022). Effects of virtual reality on learning outcomes in K-6 education: A meta-analysis.

Volume: 10 Issues: 74 Special Issue [July, 2025] pp. 152 - 171
Journal of Islamic, Social, Economics and Development (JISED)
eISSN: 0128-1755
Journal website: www.academicinspired.com/jised
DOI: 10.55573/JISED.107414

Educational Research Review, *35*, 100434.

Yannier, N., Hudson, S. E., Koedinger, K. R., Hirsh-Pasek, K., Golinkoff, R. M., Munakata, Y., Doebel, S., Schwartz, D. L., Deslauriers, L., & McCarty, L. (2021). Active learning:"Hands-on" meets "minds-on". *Science*, *374*(6563), 26-30.