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Revolutionizing Teacher Preparation: A Holistic Framework for Equipping Future Educators with 21st Century Skills and Innovative Practices

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ABSTRACT

As we navigate the dynamic landscape of the 21st century, the role of educators has become increasingly complex, demanding a new approach to teacher preparation. This paper proposes a comprehensive restructuring framework aimed at revolutionizing teacher education programs, ensuring that future educators are equipped with the essential skills and innovative pedagogical practices required to meet the evolving needs of students in the modern era. The landscape of education is evolving rapidly, necessitating a paradigm shift in teacher preparation programs to equip future educators with the essential skills and innovative pedagogical practices demanded by the 21st century. This article explores a holistic restructuring framework aimed at revolutionizing teacher preparation The findings emphasize the need for a holistic approach to teacher training that integrates both content knowledge and pedagogical innovation. The framework addresses the dynamic challenges faced by educators in the modern era, acknowledging the pivotal role they play in shaping the minds of the next generation. Researchers used qualitative method and gather a data through purposive sampling technique from teachers, novice educators at University of Narowal. By adopting a comprehensive and forward-thinking approach, this framework aims to empower teachers to navigate the complexities of the contemporary educational landscape and foster a culture of lifelong learning. The conclusion highlights the significance of adapting teacher preparation programs to meet the demands of contemporary education, and recommendations are provided for implementing the proposed framework.

Keywords: Educators Holistic development, Teacher education, Innovative Pedagogical Practices

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Introduction

In the dynamic landscape of education, the role of teachers is undergoing a profound transformation as they become facilitators of knowledge in an era marked by rapid technological advancements and evolving societal needs (Langelaan et al., 2024). The demand for educators equipped with essential 21st-century skills and innovative pedagogical practices has never been more pressing (et al., 2020). This research endeavors to address this demand by proposing a holistic restructuring framework for teacher preparation. This study aims to reshape how teachers are prepared to meet the diverse challenges of contemporary education (Cochran-Smith et al., 2015).

The central focus of this research is to develop a comprehensive framework that not only identifies the essential 21st-century skills required by educators but also integrates innovative pedagogical practices into the teacher preparation curriculum (Budin, 2024). By doing so, the study seeks to bridge the existing gap in teacher training programs, ensuring that future educators are not only well-versed in subject matter expertise but are also adept in utilizing technology, fostering critical thinking, and adapting to the changing educational landscape (Scheeler et al., 2016).

The landscape of education is evolving at an unprecedented pace, driven by technological advancements, globalization, and the ever-expanding knowledge base. Traditional teacher preparation programs, while successful in imparting subject-specific knowledge, often fall short in equipping educators with the diverse skill set needed to navigate the complexities of modern classrooms (Doran, 2020). This research acknowledges the changing demands on teachers and aims to provide a forward-looking approach to teacher preparation that aligns with the realities of contemporary education (Tamir, 2020).

The existing literature on teacher preparation often lacks a holistic approach that combines both 21st-century skills and innovative pedagogical practices. While some studies emphasize the importance of technology in education, others underscore the need for fostering creativity and critical thinking (Böttcher-Oschmann et al., 2021). This research identifies the gap in the literature and proposes a framework that systematically integrates these elements, ensuring a well-rounded and adaptable approach to teacher preparation (Baggott, 2012).

This research fills the identified gap by presenting a comprehensive framework that holistically addresses the evolving needs of education. By synthesizing the essential 21st-century skills and innovative pedagogical practices, the proposed framework provides a roadmap for teacher preparation programs to cultivate educators who are not only knowledgeable but are also equipped to inspire and engage students in an ever-changing learning environment (Gaikhorst et al., 2020).

The rationale behind this research stems from the recognition that teachers play a pivotal role in shaping the future of society. As education

becomes increasingly complex and interconnected, the motivation to prepare educators who can effectively navigate this complexity becomes imperative (Langelaan et al., 2024). This research is motivated by a commitment to empower future educators with the skills and knowledge necessary to not only meet but exceed the demands of 21st-century education, ultimately contributing to the holistic development of students and the advancement of society at large (Doran, 2020).

Research Objective

To explore 21st century skills crucial for educators

To analyzing innovative pedagogical practices for 21st century educators

To proposing a holistic restructuring framework to equip future educators

Research Question

What skills do teachers need in the 21st century, and how can we identify them for effective teacher preparation?

How can we analyze and incorporate new, creative teaching methods into teacher training programs to better prepare educators for modern classrooms?

What's a practical and all-encompassing model for teacher preparation that considers both essential 21st-century skills and innovative teaching approaches?

Literature Review

The evolution of education in the 21st century has prompted a critical examination of teacher preparation programs, calling for a holistic restructuring framework that equips future educators with essential skills and innovative pedagogical practices. While there is a growing body of literature between 2019 and 2024 that explores various facets of teacher preparation, there remains a discernible research gap in understanding the nuanced challenges and opportunities associated with implementing comprehensive reforms in this domain.

Foundations of 21st Century Skills: The 21st-century skills in teacher preparation, advocating for a comprehensive set of competencies. While these works offer a solid foundation, the existing literature does not delve deeply into the nuanced ways in which different teacher preparation programs incorporate and prioritize these skills. The research gap lies in the absence of detailed insights into how specific institutions navigate the integration of critical thinking, collaboration, communication, and creativity into their curriculum (Gaikhorst, et al., 2020).

Innovative Pedagogical Practice: Researcher contributes valuable insights into innovative pedagogical practices, such as project-based learning and the integration of technology. However, the research gap becomes apparent when examining the scalability and sustainability of these practices across diverse educational contexts. There is a lack of in-depth analysis regarding the challenges institutions face in adopting and maintaining innovative pedagogies, especially in resource-constrained environments (Budin, 2024).

Holistic Restructuring Frameworks: Researcher advocate for holistic restructuring frameworks in teacher preparation. Despite their contributions, the research gap exists in understanding the contextual factors that influence the successful implementation of such frameworks. The literature lacks a comprehensive examination of how institutional culture, administrative support, and faculty readiness impact the effectiveness of holistic restructuring initiatives (Tamir, 2020).

Feasibility and Challenges: work touches on the challenges associated with restructuring teacher preparation; the research gap lies in the absence of a systematic exploration of feasible solutions. Identifying practical strategies to overcome resistance, fostering collaboration among stakeholders, and addressing resource constraints represent uncharted territories within the existing literature (Böttcher-Oschmann et al., 2021).

The literature between 2019 and 2024 provides a solid foundation for understanding the need for revolutionizing teacher preparation. However, a critical research gap exists in the nuanced exploration of how 21st-century skills, innovative pedagogical practices, and holistic restructuring frameworks are practically integrated and sustained within diverse educational settings. Bridging this gap is imperative for informing evidence-based policies and practices that can truly transform teacher preparation programs to meet the demands of the modern education landscape (Langelaan et al., 2024).

Research Methodology

In this study researcher used the qualitative research methodology aimed at exploring the transformation of teacher preparation for the 21st century, a purposive sampling approach used to select diverse participants, including educators, administrators, and students engaged in teacher preparation programs. Through semi-structured in-depth interviews and focus groups, participants share their experiences, perceptions, and challenges associated with the integration of 21st-century skills, innovative pedagogical practices, and holistic restructuring frameworks. Concurrently, document analysis conducted on relevant materials such as curriculum documents and program policies to provide a contextualized understanding. Thematic analysis serve as the primary method for data analysis, allowing for the identification of patterns and themes across the qualitative data. To ensure trustworthiness, member checking implemented by seeking participant feedback on preliminary findings, and peer debriefing will be conducted for additional insights. Ethical considerations, including informed consent and confidentiality, prioritized throughout the research process. Reflexivity will play a crucial role in acknowledging and addressing potential researcher biases. This qualitative approach is designed to uncover nuanced insights into the transformative journey of teacher preparation, emphasizing the practical implementation of key initiatives within the educational landscape.

Theoretical framework

The theoretical framework for revolutionizing teacher preparation draws upon Sociocultural Theory and Transformative Learning to provide a comprehensive understanding of how future educators can acquire essential 21st-century skills and innovative pedagogical practices. Sociocultural Theory, rooted in Vygotsky's work, highlights the influence of social interactions and cultural contexts on learning. In the context of teacher preparation, this framework emphasizes the importance of collaborative learning environments, mentorship relationships, and communities of practice to shape educators' cognition and practices. Concurrently, Transformative Learning Theory, inspired by Mezirow, illuminates the transformative potential of critical reflection and self-examination in challenging ingrained beliefs. For teacher preparation, this framework underscores the necessity for educators to undergo profound shifts in perspectives and practices. The integration of Sociocultural Theory and Transformative Learning aligns seamlessly with the goal of revolutionizing teacher preparation by fostering collaborative learning environments, encouraging critical reflection, and instigating transformative change in the perspectives and practices of future educators. This dual theoretical approach provides a holistic foundation for designing teacher preparation programs that not only instill essential skills and innovative practices but also facilitate a transformative shift in educators' understanding and approaches to teaching and learning.

Data Analysis and Interpretation: Below are themes and sub-themes based on the responses from participants 1 to 5. Each theme includes a relevant quote and the participant number from whom the quote is derived:

Theme 1: Identification of Crucial 21st-Century Skills for Educators

In exploring the theme of identifying crucial 21st-century skills for educators, participants have shed light on specific sub-themes that encapsulate essential skills requisite for navigating the complexities of contemporary education. Two distinct sub-themes emerged, each focusing on a fundamental aspect of educator preparedness.

Sub-Theme 1: Importance of Digital Literacy

Within this sub-theme, the spotlight is on the paramount importance of digital literacy in today's educational landscape. As articulated by Participant 3, digital literacy is not merely a skill but has evolved into an absolute necessity. The participant highlights that digital literacy empowers both educators and students, providing them with the tools needed to navigate the intricate facets of the online world. In the context of the 21st century, where technology is pervasive, this sub-theme emphasizes that digital literacy is a foundational competency that educators must possess to effectively engage with modern teaching tools, online resources, and facilitate meaningful learning experiences for their students.

Quote: "In today's educational landscape, digital literacy is not just a skill; it's a necessity. It empowers both educators and students to navigate the complexities of the online world." - Participant 3

Sub-Theme 2: Emphasis on Collaboration and Communication

The second sub-theme underscores the critical role of collaboration and communication as foundational elements in the modern classroom. Participant 1 articulates that these are not merely skills but form the very bedrock of a contemporary educational environment. The participant contends that students must learn not only the subject matter but also how to effectively collaborate and express their ideas. This sub-theme advocates for an educational approach that goes beyond individual knowledge acquisition and places significance on interpersonal skills, fostering an environment where students can work collaboratively and articulate their thoughts with clarity.

Quote: "Collaboration and communication are not just skills; they're the foundation of a modern classroom. Students need to learn how to work together and express their ideas effectively." - Participant 1

In essence, these sub-themes collectively contribute to the broader theme of identifying crucial 21st-century skills for educators, emphasizing the indispensability of digital literacy and the foundational role of collaboration and communication in the evolving landscape of education. These insights are pivotal for shaping effective teacher preparation programs that equip educators with the skills necessary to thrive in the contemporary educational milieu.

Theme 2: Alignment of Skills with Modern Classroom Demands

This theme centers on the critical discussion of how 21st-century skills align with the specific demands of modern classrooms. It sheds light on two distinct sub-themes, each addressing essential facets of skill alignment.

Sub-Theme 1: Addressing Challenges with Critical Thinking

Within this sub-theme, the participants, particularly Participant 2, emphasize the paramount role of critical thinking as an indispensable tool for both educators and students. The quote, "Critical thinking is like a compass in a sea of information. It helps both educators and students navigate challenges and make informed decisions," encapsulates the essence of the discussion. This metaphorical depiction of critical thinking as a compass illustrates its pivotal function in guiding individuals through the vast and sometimes tumultuous sea of information. The participant suggests that critical thinking serves as a navigational tool, allowing educators and students alike to effectively maneuver challenges and make decisions founded on careful consideration. This insight underscores the recognition of critical thinking as a fundamental skill necessary for success in the contemporary educational landscape.

Quote: "Critical thinking is like a compass in a sea of information. It helps both educators and students navigate challenges and make informed decisions." - Participant 2

Sub-Theme 2: Adaptability in a Changing Educational Landscape

The second sub-theme delves into the indispensable quality of adaptability, particularly within an educational environment marked by constant evolution. Participant 4 articulates this perspective through the quote, "Adaptability is key in an environment that's constantly evolving. Educators need to be flexible to meet the diverse needs of their students." This statement draws attention to the dynamic nature of the educational landscape, where change is a constant. The participant suggests that adaptability is not just a desirable trait but a key requirement for educators. The term "constantly evolving" underscores the rapid pace at which educational paradigms, student needs, and teaching methodologies undergo transformation. The quote highlights the significance of educators being flexible and adaptive to effectively cater to the diverse and ever-changing needs of their students. This sub-theme emphasizes the proactive stance educators must adopt to align themselves with the dynamic nature of the educational field.

Quote: "Adaptability is key in an environment that's constantly evolving. Educators need to be flexible to meet the diverse needs of their students."

- Participant 4

In summary, Theme 2 delves into the alignment of 21st-century skills with the specific demands of modern classrooms. Sub-Theme 1 emphasizes the crucial role of critical thinking as a guiding compass, while Sub-Theme 2 underscores the necessity of adaptability in navigating the constant evolution within the educational landscape. Both sub-themes contribute to a nuanced understanding of the skills required for educators to thrive in the complexities of contemporary education.

Theme 3: Observations of Effective Teaching with 21st-Century Skills

In exploring the theme of effective teaching with 21st-century skills, two distinctive sub-themes have emerged, shedding light on the practical implementation of these skills in educational settings.

Sub-Theme 1: Digital Literacy in Project-Based Learning

Participant 5 vividly articulates the integration of digital literacy into project-based learning, offering a compelling perspective on its impact. According to the participant, a recent project involved students utilizing digital literacy to create multimedia presentations addressing global issues. This experiential approach not only engaged students actively but also served as a testament to the significant role digital literacy plays in effective teaching. The use of multimedia presentations transcended traditional teaching methods, showcasing the potential of integrating technology as an educational tool. Participant 5's observation emphasizes that leveraging digital literacy within project-based learning not only enhances student engagement but also underscores the relevance of these skills in preparing students for the demands of the contemporary world.

Quote: "In a recent project, students used digital literacy to create multimedia presentations on global issues. It not only engaged them but showcased the importance of these skills in effective teaching." -

Participant 5

Sub-Theme 2: Collaboration in Real-world Applications

Participant 1 contributes to the discussion by highlighting the integration of collaboration into real-world applications as a cornerstone of effective teaching. The participant emphasizes that effective teaching extends beyond the confines of textbooks. By incorporating collaboration into real-world contexts, educators are better equipping students to face the challenges they will encounter outside the classroom. This observation underscores the importance of not only teaching subject-specific content but also fostering collaboration skills that are essential for success in professional and personal spheres. Participant 1's perspective aligns with the evolving educational philosophy that recognizes the significance of preparing students with skills that transcend academic knowledge, positioning them for success in a global and interconnected world.

Quote: "Effective teaching goes beyond textbooks. By incorporating collaboration into real-world applications, we're preparing students for the challenges they'll face outside the classroom." - Participant 1

In summary, these sub-themes provide valuable insights into the practical integration of 21st-century skills in teaching. The first sub-theme emphasizes the transformative role of digital literacy in project-based learning, while the second sub-theme underscores the significance of collaboration in real-world applications. Together, these observations enrich our understanding of how effective teaching practices leverage 21st-century skills to create engaging, relevant, and impactful learning experiences for students.

Theme 4: Contribution of Skills to Educators' Professional Development

In exploring the intricate relationship between skill acquisition and professional development among educators, Theme 4 delves into two essential sub-themes, shedding light on the transformative impact of technology integration and the outcomes of cultivating 21st-century skills.

Sub-Theme 1: Technology Integration Enhancing Professional Growth

Within this sub-theme, the participant's quote encapsulates the profound significance of technology proficiency for educators. According to Participant 3, technology proficiency is not merely a skill but acts as a catalyst for ongoing professional growth. The quote underscores that educators who embrace technology are better positioned to adapt to evolving educational landscapes, innovate in their teaching methodologies, and continually enhance their practices. This perspective aligns with the dynamic nature of modern education, where technology serves as a cornerstone for effective pedagogy. The acknowledgment of technology as a catalyst reflects a broader understanding that embracing digital tools is integral to educators' continuous development and adaptability in the ever-evolving educational ecosystem.

Quote: "Proficiency in technology is not just a skill; it's a catalyst for professional growth. It allows educators to adapt, innovate, and enhance

their teaching practices." - Participant 3

Sub-Theme 2: Student-Centered Learning as a Professional Development Outcome

In the second sub-theme, the focus shifts to the outcomes of cultivating 21st-century skills, particularly in relation to student-centered learning. Participant 2 articulates a crucial perspective on how cultivating 21st-century skills directly contributes to educators' ability to create student-centered learning experiences. The quote emphasizes that educators equipped with these skills are better positioned to foster an environment where students actively engage in their learning. The adoption of student-centered approaches is portrayed not only as a teaching methodology but also as a professional development outcome. This signifies a paradigm shift in educational philosophies, placing emphasis on educators' effectiveness in facilitating meaningful, interactive, and personalized learning experiences. The recognition of 21st-century skills as contributors to student-centered learning aligns with contemporary educational models that prioritize student empowerment and active participation in the learning process.

Quote: "Cultivating 21st-century skills enhances educators' ability to create student-centered learning experiences, ultimately improving their effectiveness in the classroom." - Participant 2

In essence, Theme 4 unfolds as a narrative highlighting the dual impact of technology integration and the cultivation of 21st-century skills on educators' professional development. The sub-themes underscore the transformative nature of these skills, portraying them not merely as tools but as catalysts for ongoing growth and as key drivers in creating student-centered, effective learning environments. This comprehensive understanding positions skills acquisition not only as a means to enhance teaching practices but as an intrinsic component of educators' continuous professional development journey.

These themes and sub-themes provide an organized overview of participants' perspectives on identifying 21st-century skills, aligning skills with modern classroom demands, observing effective teaching, and understanding the contribution of these skills to educators' professional development. Each quote encapsulates the essence of the participant's viewpoint within the context of the identified themes.

The participants in this study shared valuable insights on various aspects of 21st-century skills, innovative pedagogies, challenges in implementation, and elements of a comprehensive teacher preparation model. In terms of the importance of 21st-century skills, Participant 3 emphasized the crucial nature of digital literacy, critical thinking, collaboration, and adaptability for educators in today's dynamic educational landscape. Participant 2 further highlighted the alignment of these skills with the demands of modern classrooms, stressing the need for educators to navigate technology-rich environments and facilitate effective collaboration among students. Participant 5 provided a broader

perspective, emphasizing that cultivating 21st-century skills significantly contributes to the professional development of educators, as it goes beyond traditional teaching methods and prepares them for the future.

Shifting the focus to innovative pedagogies, Participant 1 shed light on the effectiveness of project-based learning, flipped classrooms, and inquiry-based approaches. These practices were noted for actively engaging students in learning and deepening their understanding of the subject matter. Participant 4, discussing the impact of these pedagogical practices on student engagement and learning outcomes, emphasized that their implementation has led to increased student involvement and positive academic outcomes.

Addressing the challenges and enhancements in implementing innovative pedagogies, Participant 1 acknowledged the resistance to change among educators accustomed to traditional methods. Overcoming this resistance, as expressed by the participant, requires convincing educators about the benefits of these innovative approaches. On the other hand, Participant 5 pointed out crucial support systems for success, including ongoing professional development, access to technology, and a supportive school culture. These, according to the participant, are key components in ensuring the successful implementation of innovative pedagogies.

Conclusion

This research presented a comprehensive framework for investigating the transformation of teacher preparation for the 21st century, addressing existing gaps in the literature and offering practical insights. The study delved into the fundamentals of 21st-century skills, explored innovative pedagogical practices, considered holistic restructuring frameworks, and provided an operational and intervention framework. The proposed Holistic Educator Development Framework integrates foundational pillars, alignment with classroom demands, effective teaching practices, and professional development, providing a hierarchical structure that supports educators in navigating the complexities of contemporary education. This model emphasizes the importance of digital literacy, collaboration, critical thinking, and adaptability, offering a holistic approach to teacher preparation, effective teaching practices, and continuous professional development.

The research highlighted the critical importance of 21st-century skills in shaping modern education and showcased the efficacy of innovative pedagogies such as project-based learning, flipped classrooms, and inquiry-based approaches. Challenges in implementing these pedagogies, including resistance to change and the need for support systems, were identified, emphasizing the importance of addressing these issues systematically. Elements of a comprehensive teacher preparation model were discussed, emphasizing the balance between subject-matter expertise and the development of essential skills.

Moving forward, future research should focus on evaluating the long-

term impact of the proposed Holistic Educator Development Framework in real-world educational settings. Additionally, exploring the scalability of the framework across diverse cultural and socioeconomic contexts will contribute to its adaptability and effectiveness. Further investigation into the specific strategies for overcoming resistance to change among educators and fostering a supportive institutional culture is crucial. Moreover, longitudinal studies can provide insights into the sustained development of educators and the subsequent impact on student outcomes.

In conclusion, the proposed framework serves as a valuable guide for educators, administrators, and policymakers, offering actionable recommendations for the successful integration of 21st-century skills into teacher preparation and classroom practices. By implementing the recommended strategies, educational institutions can contribute to the continuous growth and adaptation of educators, ultimately preparing students for the demands of the 21st century.

Recommendations for Implementation of the Holistic Educator Development Framework:

Incorporate Digital Literacy Training: Education institutions should integrate comprehensive digital literacy training into teacher preparation programs. This training should cover the effective use of educational technology, online resources, and multimedia tools, ensuring educators are proficient in leveraging digital tools for impactful teaching.

Emphasize Collaborative Learning Strategies: Teacher training programs should prioritize strategies that foster collaboration and communication skills among educators. Encouraging collaborative projects, group discussions, and interactive learning experiences will contribute to the development of strong interpersonal skills.

Integrate Critical Thinking into Curriculum Design: Curriculum designers and educators should collaborate to embed critical thinking skills into subject-specific content. Lesson plans and educational materials should include activities that challenge students to analyze, evaluate, and apply information critically.

Promote Adaptability through Varied Teaching Approaches: Encourage educators to embrace adaptable teaching approaches that cater to diverse learning styles and evolving classroom dynamics. Providing professional development opportunities focused on flexible teaching methods will enhance educators' ability to adapt to changing educational landscapes.

Facilitate Project-Based Learning with Digital Literacy Integration: Schools and institutions should promote project-based learning that incorporates digital literacy. Educators can design projects that require students to utilize digital tools for research, presentation, and collaboration, fostering a seamless integration of digital literacy into meaningful learning experiences.

Establish Collaborative Platforms for Real-world Applications: Create platforms or networks where educators can collaborate on real-world

applications of their subject matter. This can involve sharing successful collaborative projects, discussing challenges, and exchanging ideas on how to implement subject-specific content in real-world contexts.

Provide Professional Development on Technology Integration: Institutions should offer ongoing professional development opportunities focused on technology integration. Workshops, seminars, and online courses can guide educators in effectively incorporating technology into their teaching methodologies, promoting continuous growth and innovation.

Encourage Student-Centered Approaches in Teaching Practices: Educators should be encouraged to adopt student-centered teaching practices that empower students to take an active role in their learning. This involves designing lessons that allow for student input, choice, and collaborative problem-solving.

Implement Mentorship Programs for Technology Proficiency: Establish mentorship programs where experienced educators mentor their peers on technology proficiency. This mentorship can include sharing best practices, troubleshooting technical challenges, and guiding colleagues in effectively integrating technology into their teaching.

Promote a Culture of Continuous Professional Development: Educational institutions and school leadership should foster a culture of continuous professional development. Encourage educators to seek out new teaching methodologies, attend workshops, and pursue advanced certifications to stay current with evolving educational practices.

Evaluate and Update Curricula Regularly: Regularly review and update curricula to ensure they align with 21st-century skills and evolving educational demands. This can involve collaboration between educators, curriculum designers, and industry professionals to keep the content relevant and impactful.

Establish Platforms for Knowledge Sharing: Create platforms or communities where educators can share insights, resources, and success stories related to the implementation of the Holistic Educator Development Framework. This can facilitate a collective learning environment and promote continuous improvement.

Implementing these recommendations will contribute to the successful integration of the Holistic Educator Development Framework, empowering educators to thrive in the complexities of contemporary education while preparing students for the demands of the 21st century.

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