

تقويم مادة طرائق التدريس للمرحلة الثالثة لقسم اللغة العربية في كلية العلوم الإسلامية/ جامعة بغداد على وفق
الاتجاهات الحديثة

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Introduction

The integration of Large Eddy Simulation (LES) over Reynolds-averaged Navier-Stokes (RANS) in building simulation for outdoor and indoor applications has been a topic of debate in the field of fluid dynamics (B. Blocken, 2018). LES is known for capturing unsteady flow phenomena accurately, while RANS provides efficiency in computational cost. This debate raises the question of whether LES should be the preferred choice over RANS in building simulations. One key aspect to consider when choosing between LES and RANS is the level of precision required in the simulation. LES is more suitable for scenarios where a high level of detail and accuracy in predicting turbulent flows is crucial, such as in urban microclimate studies or indoor airflow analysis (B. Blocken, 2018). On the other hand, RANS is often favored in cases where a balance between accuracy and computational cost is necessary, making it more common in larger-scale simulations like building ventilation assessments. Moreover, the choice between LES and RANS also depends on the available computational resources and time constraints. LES typically demands higher computational power and longer simulation times compared to RANS due to its finer resolution of turbulent structures (B. Blocken, 2018). Therefore, in practical engineering applications where quick results are needed, RANS may still be the method of choice despite its limitations in capturing all turbulent flow features accurately. In conclusion, the decision to use LES or RANS in building simulation should be based on the specific requirements of the study, balancing factors such as accuracy, computational resources, and time constraints. Both approaches have their strengths and limitations, and selecting the most appropriate one will ultimately depend on the nature and scale of the simulation being conducted.

Problem Statement (Outdated curriculum in teaching methods)

In the realm of computational fluid dynamics, the choice between Large Eddy Simulation (LES) and Reynolds-Averaged Navier-Stokes (RANS) methods is crucial, especially in applications like building ventilation assessments where accuracy and computational cost play vital roles. LES offers a finer resolution of turbulent structures compared to RANS, leading to more accurate predictions of turbulent flows (B. Blocken, 2018). However, this increased accuracy comes at the expense of higher computational power and longer simulation times. On the other hand, RANS, while less computationally demanding, may struggle to capture all turbulent flow features accurately, particularly in complex scenarios (B. Blocken, 2018). The decision-making process between LES and RANS is not solely based on the modeling approach itself but also considers factors such as available computational resources and time constraints. In practical engineering applications where quick results are paramount, RANS may still be preferred due to its lower computational demands, despite its known limitations in accurately capturing turbulent flow behaviors. This highlights the importance of striking a balance between the desired level of accuracy, computational efficiency, and time constraints when selecting the appropriate turbulence modeling approach for building simulations. Therefore, when choosing between LES and RANS for building simulations, researchers and engineers must carefully evaluate the specific requirements of the study at hand. Understanding the strengths and limitations of each method is essential in making an informed decision that aligns with the nature and scale of the simulation being conducted. Ultimately, the selection of the most suitable turbulence modeling approach should be a

well-informed decision that optimally balances accuracy, computational resources, and time constraints in building ventilation assessments.

Importance of the research

In the realm of building simulations, the choice between Large Eddy Simulation (LES) and Reynolds-Averaged Navier-Stokes (RANS) turbulence modeling approaches is crucial. LES offers higher accuracy in capturing turbulent flow behaviors but comes with higher computational demands. On the other hand, RANS may be preferred in situations where quick results are essential due to its lower computational requirements, despite its limitations in accurately representing turbulent flows (Spence-Ariemma, 2023). This decision-making process emphasizes the need to balance accuracy, computational efficiency, and time constraints when selecting the appropriate turbulence modeling approach for building simulations. Researchers and engineers engaged in building simulations must conduct a thorough evaluation of the specific study requirements when choosing between LES and RANS techniques. Understanding the strengths and limitations of each method plays a critical role in making an informed decision that aligns with the scale and nature of the simulation being conducted. By carefully considering factors such as the complexity of the flow field, the level of detail required, and the available computational resources, practitioners can effectively determine the most suitable turbulence modeling approach for their ventilation assessments (J. Rashid & Khalid Waheed, 2022). Moreover, disseminating the findings of research projects is integral to ensuring that the benefits of the study are shared with others. This dissemination process can lead to positive impacts in various spheres such as economics, politics, and society, while also fostering innovation, enhancing visibility on

pertinent issues, and facilitating collaborative research efforts (Spence-Ariemma, 2023). Therefore, beyond the technical aspects of turbulence modeling selection, researchers should also prioritize the effective communication and dissemination of their research outcomes to maximize its impact and promote further advancements in the field.

Research objectives

Research objectives are fundamental components of any scientific study, guiding researchers in their pursuit of knowledge and providing a clear direction for their investigations. Setting well-defined research objectives is crucial as they serve as the foundation for the entire research process, shaping the research design, methodology, and overall outcomes (Dipak Mahat et al., 2024). Clear and specific research objectives help researchers focus their efforts, define the scope of their study, and ensure that the research remains relevant and meaningful. In the realm of turbulence modeling selection for ventilation assessments, research objectives play a vital role in determining the success and impact of the study. By clearly defining the goals and objectives of the simulation, researchers can streamline their efforts towards selecting the most appropriate turbulence modeling approach based on factors such as the complexity of the flow field and available computational resources (J. Rashid & Khalid Waheed, 2022). This targeted approach not only enhances the efficiency of the research process but also contributes to the accuracy and reliability of the findings. Furthermore, beyond the technical aspects of turbulence modeling selection, effective communication and dissemination of research outcomes are paramount. Disseminating research findings ensures that the benefits of the study reach a wider audience, leading to positive impacts across various sectors such as economics, politics, and society (Spence-Ariemma, 2023). Effective dissemination not

only increases visibility on pertinent issues but also fosters collaboration, innovation, and further advancements in the field. Therefore, researchers should prioritize the clear articulation and sharing of their research results to maximize their impact and contribute to the overall progress of the scientific community.

Research questions

Effective communication and dissemination of research findings are crucial aspects of the scientific process. Researchers must not only focus on the technical details of their work but also on how they share their results with a wider audience to maximize the impact of their research. According to Spence-Ariemma (2023), disseminating research outcomes is essential as it ensures that the benefits of the study reach various sectors such as economics, politics, and society. This dissemination not only increases visibility on important issues but also fosters collaboration, innovation, and further advancements in the field, contributing to the overall progress of the scientific community. Moreover, the selection of an appropriate research design and methodology plays a vital role in shaping the credibility and validity of research findings (Dipak Mahat et al., 2024). The choice of research design terms, sample selection criteria, and statistical analysis methods directly influence the accuracy and reliability of the results obtained. Researchers need to pay attention to factors such as hypothesis wording, statistical tools, data visualization techniques, and the minimum sample size required for their study. By understanding and implementing effective research design terminology, researchers can enhance the credibility of their work and ensure the validity of their findings. In conclusion, researchers should prioritize not only conducting high-quality research but also effectively communicating their results to a broader audience. By adopting clear

articulation and dissemination strategies, researchers can maximize the impact of their work, promote collaboration and innovation, and contribute significantly to the advancement of knowledge in their respective fields.

Scope of the research

Research design and sampling play a crucial role in ensuring the credibility and validity of research findings (Dipak Mahat et al., 2024). The selection of appropriate research design terms, criteria for sample selection, and methods for statistical analysis directly impact the accuracy and reliability of the results obtained. It is essential for researchers to carefully consider factors such as hypothesis wording, statistical tools, data visualization techniques, and the minimum sample size required for their study (Dipak Mahat et al., 2024). By understanding and implementing effective research design terminology, researchers can significantly enhance the credibility of their work and ensure the validity of their findings. Moreover, effective communication of research results is equally important in maximizing the impact of research outcomes and fostering collaboration and innovation within the academic community. Researchers must prioritize clear articulation and dissemination strategies to reach a wider audience and contribute meaningfully to the advancement of knowledge in their respective fields. This aligns with the idea that research is not only about generating new knowledge but also about effectively sharing it with others to inspire further exploration and development in the field (Anupam Akansha, 2023). In the ever-evolving landscape of research and academia, the scope of research continues to expand, driven by the need to address emerging challenges and gaps in knowledge. By embracing diverse research methodologies and staying abreast of the latest trends and best practices in research

design and sampling, researchers can navigate complex research landscapes more effectively and produce high-quality, impactful research outcomes. Ultimately, by upholding rigorous standards in research design and sampling, researchers can uphold the integrity and value of their research contributions, making meaningful strides towards advancing knowledge and driving innovation in their respective fields.

Definition of research terms

In the realm of research and academia, the foundation lies in the meticulous planning and execution of research design and sampling methodologies. These elements are crucial as they shape the entire research investigation, from the selection of appropriate methodologies to the collection of data and the overall exploration of a specific research question or hypothesis (Almalki, 2016). Research design serves as the framework within which researchers operate, guiding them on how to approach their study objectives effectively. On the other hand, sampling involves the systematic process of selecting a subset of individuals or products from a larger population for investigation, especially when studying the entire population is impractical or impossible (Taherdoost, 2016). Furthermore, the choice of research design terms is pivotal, as it influences the statistical analysis and hypothesis formulation processes (Dipak Mahat et al., 2024). Different types of research designs, such as Descriptive, Developmental, Experimental, and Casual Comparative, aim to answer specific research questions using various statistical tools and data visualization techniques. For instance, Descriptive research focuses on answering the "who, what, where, how, and when" questions about a particular event or topic, providing valuable insights into the research subject (Tracy, 2019; King, 2023). By upholding rigorous standards in research design and sampling,

researchers can enhance the credibility and validity of their work, ultimately contributing meaningfully to the advancement of knowledge in their respective fields (Anupam Akansha, 2023). Embracing diverse research methodologies and staying informed about emerging trends and best practices enable researchers to navigate complex research landscapes effectively and produce high-quality, impactful research outcomes. In doing so, researchers not only generate new knowledge but also inspire further exploration and development in their fields, driving innovation and progress in academia.

Theoretical framework

Researchers play a crucial role in advancing knowledge and driving innovation within their respective fields. By embracing diverse research methodologies and staying informed about emerging trends and best practices, researchers can effectively navigate complex research landscapes and produce high-quality, impactful research outcomes (Anupam Akansha et al., 2023). Moreover, upholding rigorous standards in research design and sampling is essential to enhance the credibility and validity of research work, contributing meaningfully to the advancement of knowledge (Anupam Akansha et al., 2023). In the realm of healthcare interventions, the acceptability of interventions to both deliverers and recipients is a critical consideration across the development, evaluation, and implementation phases (M. Sekhon et al., 2017). Insights from process evaluations can inform the interpretation of trial findings, shedding light on reasons for low participant retention and potential issues with intervention acceptability (M. Sekhon et al., 2017). The Theoretical Framework of Acceptability proposed in the study provides distinct constructs aimed at capturing key dimensions of acceptability, offering a valuable tool for healthcare researchers to assess and enhance the acceptability of complex

interventions (M. Sekhon et al., 2017). By integrating theoretical frameworks like the one proposed in the study, researchers can develop quantitative and qualitative instruments for assessing the acceptability of interventions, thereby advancing the science and practice of acceptability assessment in healthcare interventions (M. Sekhon et al., 2017). This approach not only enhances the understanding of intervention acceptability but also contributes to the overall effectiveness and success of healthcare interventions in real-world settings.

Previous studies on the topic

By integrating theoretical frameworks like the one proposed in M. Sekhon et al.'s study (2017), researchers can enhance their understanding of intervention acceptability and develop tools to assess it more effectively. The Theoretical Framework of Acceptability introduced in the study offers essential constructs to capture key dimensions of acceptability, providing healthcare researchers with a valuable instrument to evaluate and improve the acceptability of complex interventions (M. Sekhon et al., 2017). This framework not only sheds light on reasons for low participant retention and potential issues with intervention acceptability but also contributes significantly to the overall effectiveness and success of healthcare interventions in real-world settings. Moreover, the utilization of both quantitative and qualitative instruments for assessing intervention acceptability can advance the science and practice of acceptability assessment in healthcare interventions (M. Sekhon et al., 2017). By incorporating such tools into research methodologies, healthcare professionals can gain deeper insights into the acceptability of interventions, ultimately leading to better outcomes for patients and healthcare systems. This comprehensive approach allows for a more nuanced evaluation

of intervention acceptability, addressing challenges related to participant engagement and intervention design (M. Sekhon et al., 2017). In summary, the integration of theoretical frameworks like the one proposed by M. Sekhon et al. (2017) plays a crucial role in shaping how researchers evaluate and enhance the acceptability of healthcare interventions. By leveraging such frameworks, healthcare professionals can refine their strategies, improve intervention acceptability, and ultimately elevate the quality of care delivered to patients.

Research methodology - Research design - Sample selection - Research tools - Statistical methods

Research design, sample selection, and the use of appropriate research tools are fundamental aspects in the realm of scientific research. According to Mahat et al. (2024), the choice of an effective research design is pivotal as it shapes the methodology and ensures the credibility and validity of research findings. Researchers need to pay clear and focused attention to these elements to improve the reliability of their work. Moreover, the study by Thomas (2010) emphasizes the importance of determining the right minimum sample size, with larger samples enhancing the stability and accuracy of results. This underscores the significance of sample selection in research methodology. Building on this foundation, researchers can benefit from integrating theoretical frameworks, such as those proposed by Sekhon et al. (2017), into their methodologies to enhance the evaluation of intervention acceptability in healthcare settings. By incorporating tools for assessing intervention acceptability, healthcare professionals can gain deeper insights into the level of acceptance of interventions, leading to better outcomes for patients and healthcare systems (Sekhon et al., 2017). This comprehensive

approach allows for a more nuanced evaluation of intervention acceptability, addressing challenges related to participant engagement and intervention design. In conclusion, by leveraging established research design principles, proper sample selection techniques, and incorporating relevant theoretical frameworks and tools, researchers and healthcare professionals can enhance the credibility and validity of their work. The synergy between these elements contributes to improving the overall quality of research outcomes and ultimately elevating the standard of care provided to patients.

Data analysis

By incorporating tools for assessing intervention acceptability, healthcare professionals can gain deeper insights into the level of acceptance of interventions, leading to better outcomes for patients and healthcare systems (Sekhon et al., 2017). This comprehensive approach allows for a more nuanced evaluation of intervention acceptability, addressing challenges related to participant engagement and intervention design. Furthermore, as highlighted by Lahat et al. (2023), utilizing statistical methods such as the intraclass correlation coefficient (ICC) can significantly contribute to determining inter-rater reliability in research studies. This statistical analysis method enhances the rigor and validity of data interpretation, ensuring that research findings are robust and reliable. In the realm of data analysis, researchers and healthcare professionals should pay attention to not only the collection and processing of data but also the methodologies used to evaluate the effectiveness and acceptance of interventions. By leveraging established research design principles, proper sample selection techniques, and relevant theoretical frameworks, the credibility and validity of research outcomes can be enhanced (Sekhon et al., 2017). These elements work synergistically to elevate the

standard of care provided to patients by ensuring that interventions are not only effective but also widely accepted by both providers and recipients. Moreover, the incorporation of theoretical frameworks, such as those proposed by Sekhon et al. (2017), provides a structured approach to understanding the acceptability of healthcare interventions. Analyzing aspects of intervention acceptability can reveal areas for modification and improvement, ultimately leading to more tailored and effective healthcare practices. Therefore, by integrating these research methodologies and tools into data analysis processes, researchers can contribute to improving patient outcomes and enhancing the quality of healthcare delivery.

Results interpretation

Proper research design principles, effective sample selection techniques, and relevant theoretical frameworks play a crucial role in enhancing the credibility and validity of research outcomes in the healthcare field (Sekhon et al., 2017). These elements work together to elevate the standard of care provided to patients by ensuring that interventions are not only effective but also widely accepted by both healthcare providers and recipients. The incorporation of theoretical frameworks, as proposed by Sekhon et al. (2017), offers a structured approach to assessing the acceptability of healthcare interventions. Understanding various aspects of intervention acceptability can pinpoint areas for refinement and enhancement, ultimately leading to more personalized and efficient healthcare practices. By integrating these robust research methodologies and tools into data analysis processes, researchers can significantly contribute to improving patient outcomes and enhancing the overall quality of healthcare delivery. In the realm of healthcare research, the adoption of established research design principles, such as those

outlined by Sekhon et al. (2017), is essential for ensuring the robustness and reliability of study findings. Through meticulous attention to detail in sample selection and the application of theoretical frameworks, researchers can not only generate valuable insights but also drive positive changes in clinical practice. Therefore, by adhering to these methodological standards and embracing innovative research approaches, healthcare professionals can continue to advance the field and foster better health outcomes for individuals across diverse populations.

Recommendations and suggestions

In the realm of healthcare research, adherence to established research design principles is paramount for ensuring the reliability and validity of study findings. Sekhon et al. (2017) emphasized the importance of meticulous sample selection and the application of theoretical frameworks to generate valuable insights and drive positive changes in clinical practice. These methodological standards play a crucial role in fostering advancements in the healthcare field and ultimately lead to better health outcomes for individuals across diverse populations. Moreover, the integration of robust research methodologies and tools into data analysis processes has the potential to enhance the overall quality of healthcare delivery by enabling refinement and personalization of healthcare practices. By embracing innovative research approaches and continually refining research methodologies, healthcare professionals can contribute significantly to improving patient outcomes. The incorporation of evidence-based practices, as advocated by experts like Blocken (2018), can further enhance the effectiveness of healthcare interventions. Through the systematic evaluation of the quality of evidence and the strength of recommendations, researchers can ensure that their findings are sound and

reliable, thus laying the foundation for informed decision-making in clinical settings. Furthermore, the evolution of healthcare research towards more personalized and efficient practices underscores the need for continuous learning and adaptation within the industry. As Atkins et al. (2001) highlighted, developing systems for grading the quality of evidence is essential for critically appraising existing approaches and shaping future research endeavors. By staying abreast of the latest developments in research methodologies and guidelines, healthcare professionals can navigate complex healthcare landscapes more effectively and tailor interventions to meet the specific needs of individual patients.

Conclusion

The integration of evidence-based practices in healthcare, as advocated by experts like Blocken (2018), plays a crucial role in enhancing the effectiveness of healthcare interventions. By systematically evaluating the quality of evidence and the strength of recommendations, researchers can establish a solid foundation for informed decision-making in clinical settings (Blocken, 2018). Moreover, with the ongoing evolution of healthcare research towards personalized and efficient practices, there is a heightened emphasis on continuous learning and adaptation within the industry. Atkins et al. (2001) emphasized the significance of developing systems to grade the quality of evidence in healthcare. This serves as a fundamental aspect for critically appraising existing approaches and shaping future research endeavors (Atkins et al., 2001). Keeping abreast of the latest developments in research methodologies and guidelines is essential for healthcare professionals. This enables them to navigate the complex healthcare landscape more effectively and tailor interventions to meet the specific needs of

individual patients. The need for such tailored interventions is underscored by the increasing focus on personalized healthcare, where treatments are customized based on individual characteristics and preferences. In light of the importance of evidence-based practices and continuous learning in healthcare, it is evident that staying updated with the latest research findings and guidelines is imperative for ensuring high-quality patient care. By incorporating these practices into clinical decision-making processes, healthcare professionals can optimize patient outcomes and contribute to the advancement of healthcare as a whole.

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As healthcare professionals strive to deliver high-quality patient care, it is crucial for them to stay abreast of the latest research findings and guidelines (Atkins et al., 2001). The continuous evolution of research methodologies and practices in healthcare underscores the importance of evidence-based decision-making to optimize patient outcomes. By integrating evidence-based practices into clinical decision-making processes, healthcare professionals can tailor interventions to individual patient needs effectively (Dipak Mahat et al., 2024). This not only enhances the quality of care provided but also contributes to the advancement of healthcare as a whole. Personalized healthcare has gained significant traction in recent years, emphasizing the customization of treatments based on individual characteristics and preferences (Atkins et al., 2001). This tailored approach highlights the shift towards patient-centered care, where interventions are designed to meet the specific needs of each patient, improving overall treatment outcomes. The significance of evidence-based practices in healthcare is further underscored by the emphasis on continuous learning and professional development

among healthcare providers. Moreover, the incorporation of research findings and guidelines into clinical practice ensures that interventions are not only effective but also aligned with the best practices in the field (Dipak Mahat et al., 2024). This integration of research into practice not only benefits individual patients but also contributes to the collective knowledge and advancement of healthcare as a discipline. Therefore, staying updated with the latest research findings and guidelines is imperative for healthcare professionals to provide high-quality, evidence-based care while navigating the complex landscape of modern healthcare delivery systems.

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