

# **Proceedings of the 7th International Conference on Innovation in Education, Science, and Culture**

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## Preface

We are delighted to introduce the proceedings of the 7<sup>th</sup> International Conference on Innovation in Education, Science and Culture (ICIESC). This conference has brought researchers, developers and practitioners around the world who are leveraging and developing Education, Science and Culture. The theme of ICIESC 2025 was "Encouraging Global Innovation Through Education, Science and Cultural Synergy".

The ICIESC 2025 was organized by the Research and Community service institution Unimed collaboration with Physical Society of Indonesia. We welcomed participants from Universitas Negeri Medan and also other universities as the representative of the students, lecturers, and researchers. We also welcomed our keynote speakers Prof. Dr. Syawal Gultom, M.Pd. (*Chairman of the Senate of Universitas Negeri Medan*), Dr. Daniel Chan, Ph.D., M.A. (*Senior Lecturer and Former Deputy Director, Centre for Language Studies, National University of Singapore*), Assoc. Prof. Pham Hong Minh (*Vietnam Academy of Science and Technology, Vietnam*), Dr. Nurulafiqah Nadzirah Binti Mansor (*Department of Electrical Engineering, University of Malaya, Malaysia*), for coming to Medan. We hope the event served as a catalyst for strengthening international cooperation on the transfer of knowledge. In addition, we were most thankful for the ceaseless efforts of staff members of The Institute of Research and Community, Universitas Negeri Medan including our Rector, Prof. Dr. Baharuddin, M.Pd and our Chief, Dr. Hesti Fibriasari, M.Hum. Conferences such as this one provide an opportunity to talk about common challenges, share best practices, and discuss groundbreaking scientific research and technology that will help our field to be balanced with hard efforts to improve the right, fast, and accurate information system to produce innovative and creative research results that can provide added value to the business world and the industrial world (DUDI). Moreover, we have provided full support so that technology and knowledge developed at other distinguished universities in Indonesia can be spread globally, with Universitas Negeri Medan serving as the channel. Our interest can succeed only with continued interest and support from diverse parties including not only Universitas Negeri Medan itself but also industries, the academia, the government, and investors.

There were 312 articles submitted to the committee including short and full paper types, some of which were presented orally in parallel sessions, and extended abstract form. All participants in the presenter form divided into 10 parallel rooms. The articles have been reviewed by double blind reviewers and 162 of them were accepted to be published in these proceedings.

Grateful thanks to all of members of the 7<sup>th</sup> International Conference on Innovation in Education, Science and Culture (ICIESC) for their outstanding contributions. Thanks also given to the EAI publishing this volume.

The Editors:  
**Hesti Fibriasari**  
**Ricky Andi Syahputra**  
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