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Editorial board:

Iwona Maciejowska
Mária Babinčáková
Aneta Woźniakiewicz

Typeset by:

Aneta Woźniakiewicz
Mária Babinčáková

Graphic design:

Mária Babinčáková

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ARTIFICIAL INTELLIGENCE (AI) IN CHEMISTRY EDUCATION: A BIBLIOMETRIC AND CONTENT ANALYSIS OF PAPERS PUBLISHED

Dilek Teke*, Mustafa Sözbilir
Kazım Karabekir Faculty of Education, Department of Mathematics and Science Education, Chemistry Education, Atatürk University, Erzurum-Türkiye
*dilekteke@atauni.edu.tr

Chemistry education is an important field that aims to provide students with practical skills as well as theoretical knowledge. In recent years, the use of AI technologies in education has started to reshape teaching and learning, so there is an increase in the number of papers dealing with use of AI applications in chemistry education research. This study aims analyze papers published on the integration of AI in chemistry education to identify the trends and developments. These trends will be useful in terms of determining the new studies on AI applications in chemistry courses and making chemistry teaching effective, efficient and interesting. We particularly, aimed to determine the research area, subject and research designs, data collection tools and analyses of the publications in Web of Science (WoS) related to AI in chemistry teaching.

We employed document analysis as a research design. The documents used in the study consist of research articles related to chemistry education AI in the journals indexed in the 'Web of science'. The data were obtained from the analysis of 91 research articles between 2015-2024. The articles were analyzed with VosViewer and ARRefMan softwares. The data were analyzed by creating word groups obtained from the categories under the themes determined in the data obtained. The findings obtained from the analysis, trends were tried to be determined according to years, journal name, chemistry field, chemistry topics, teaching method used, universities where the first or responsible authors are located. In addition, the research approach, design, data collection tools, target group, sample size, data analysis types used in the method section of the research articles were also determined.

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Prof. dr. Iztok Devetak
Chair of the Division of Chemical Education
European Chemical Society