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## **Journal of the Turkish Chemical Society Section C: Chemical Education (JOTCS-C)**

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### Editorial

We have launched the first issue of our 10th year, marking the completion of our first decade. Reaching this milestone has not been easy, but it has been equally rewarding and fulfilling. As we have often emphasized, the declining number of chemistry teacher education programs in our country has led to a decrease in the number of undergraduate graduates and, consequently, in the number of graduate students. This situation is deeply concerning for all chemistry educators; nevertheless, we continue to pursue our academic work to the best of our abilities.

Throughout this journey, I am profoundly grateful to all my colleagues who have consistently supported our journal, both through their article contributions and their invaluable service as reviewers, ensuring its continued publication.

I would also like to extend my sincere appreciation to our Managing Editor, Dr. Barbaros Akkurt, and our Language Editor, Dr. Ebru Demir, for their extraordinary dedication and meticulous efforts in overseeing this process with me from day one.

In this issue, four research papers were published. In the first paper, Demir (2025) compared the 2024 Chemistry Curriculum with the 2018 Chemistry Curriculum in terms of fundamental approach/philosophy, objectives, considerations for implementation, general structure, content, key concepts, and assessment and evaluation dimensions, and thus, to identify and evaluate the similarities, differences, and innovations in the 2024 curriculum in comparison to the 2018 curriculum. She determined that the 2024 Chemistry Curriculum and the 2018 Chemistry Curriculum contained similarities and differences to varying degrees according to the established comparison dimensions, and the 2024 curriculum also brought many innovations. In this newly developed structure, it is aimed to enhance students' science skills in the context of the same, similar, and different topics as the previous program, and to help them construct chemistry concepts through these skills. She also found that repetitive topics and concepts across different grade levels have been avoided, simplification has been made according to the determined reduction rates in the number of key concepts and learning outcomes. All the innovations stem from the fact that the curriculum is largely skill-oriented and has a holistic structure that supports overall development. She believed that the conclusions gathered from this research can be guiding for researchers in the field, contribute to program developers in future studies, and help teachers in better understanding the new

In the second paper, Nakiboğlu (2025) evaluated senior pre-service chemistry teachers' (SPSCTs) foundational understanding of nuclear reactions. She emphasized that nuclear chemistry plays a crucial role in various essential applications in daily life; however, students often struggle with many of its concepts. These difficulties in learning and teaching nuclear chemistry can largely be attributed to misconceptions and a lack of understanding of prerequisite concepts. Among these, the concept of nuclear reactions serves as a fundamental prerequisite for comprehending other topics within nuclear chemistry. In this study, she aimed to determine the extent to which SPSCTs perceive nuclear reactions as a type of chemical reaction. She also sought to identify the reasons behind their classification. The findings indicated that 64% of SPSCTs considered nuclear reactions to be a subset of chemical reactions. Upon examining the underlying reasons for this misconception, two primary factors emerged. First, although SPSCTs demonstrated an awareness of nuclear reactions, their understanding of the mechanisms underlying chemical reactions was incomplete, leading them to categorize nuclear reactions as a type of chemical reaction. Second, they struggled to distinguish between chemical and nuclear reactions in terms of reaction mechanisms, processes, and dynamics. In the third paper, Çiftçi and Aydın (2024) have focused on the evaluation of middle school science course videos and interactive content provided by EBA, which was created by the Ministry of National Education. EBA provides a large number of instructional videos and interactive materials that allow teachers to improve their lessons and better interact with students. The data obtained were analyzed using document analysis technique.

In the third paper, Çiftci and Aydın (2025) examined science teachers' opinions on common written examination system. The opinions of science teachers working in Kırşehir province were taken about the 'Common Written Examination' that the Ministry of National Education has put into practice based on the Ministry of National Education Measurement and Evaluation Regulation published in the Official Gazette dated 9/9/2023 and numbered 32304 within the scope of the Regulation on Preschool Education and Primary Education Institutions. In the study, a questionnaire form consisting of demographic characteristics developed by the researchers, 15 closed-ended questions and 1 open-ended question, totaling 16 questions, was used. As a result of the validity analysis of the questionnaire form, the CVR (Content Validity Ratio) ratio was calculated as 0.99 and the CVI (Content Validity Index) ratio as 0.96. After the data were collected, firstly, it was ensured that the information obtained from the application process was complete. In this direction, it was checked whether the answers given to the questions were incomplete, whether the answers given were compatible with the questions, and whether the answer writing process or the coding process of the answers, if any, was the same for all forms and interviews. In this context, a total of 91 teachers participated in the screening phase of the study. Three teachers were excluded from the study because their responses were found to be inconsistent.

In the fourth paper, Gacanoğlu (2025) examined content validity of secondary school chemistry course common exam scenarios. Exam scenarios have been published by the Ministry of National Education in order to increase the validity of the content of the exams taken by students studying in secondary education institutions in the 2023-2024 academic year and to ensure that students are consciously prepared for the exams. The objectives of the questions in the scenarios are specified in the explanations section of the scenarios. On the other hand, considering that students preparing for the exam are responsible for all objectives, it is important that the questions in the scenarios cover the objectives to a large extent. For this reason, Gacanoğlu (2025) investigated to what extent the objectives stated in the common exam scenarios prepared for all grade levels for the 2023-2024 secondary school anatolian high school chemistry course overlap with the objectives of the 2018 Secondary School Chemistry Course Curriculum. She tried to determine whether the scenarios provided content validity. It was concluded that the overlap rate of the achievements measured by the exam scenarios prepared according to the 2018 program in the 2023-2024 year with the achievements of the curriculum was 79%. This result shows that the scenarios provided content validity to a significant extent. The high content validity of scenarios shows that they have the potential to greatly support students preparing for the future exams according to these scenarios.

Finally, I hope that the interest in JOTCS-C will continue increasingly in the following years. It was important to publish a qualified chemistry education journal in our country, and especially to carry out this process within the Turkish Chemical Society for us. I would like to thank on behalf of our editorial board all the authors who submitted articles, and all reviewers for their professional comments.

See you in the new issue in September 2025

Kind regards

Prof. Dr Canan NAKİBOĞLU  
Editor-in-chief, JOTCS-C

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