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Self-assessment quizzes with Socrative in the course Calculation and Design of Chemical Reactors

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In this educational experience, the design and usefulness of online self-assessment quizzes, implemented using Socrative, have been evaluated as a learning support tool in the compulsory subject *Calculation and Design of Chemical Reactors* of the bachelor's degree in chemical engineering at the University of Valladolid. These quizzes, employed during the academic years 2021/2022, 2022/2023, and 2024/2025, have been used as a formative assessment tool that enables students to enhance their motivation, monitor their progress in the learning process, foster autonomous learning skills, and take timely action when specific learning objectives are not met (Cosi et al., 2020). Socrative is a free digital platform that allows for the creation of real-time assessment and self-assessment quizzes (Romero et al., 2021).

The teaching innovation experience was structured as follows:

- **Quiz Creation:** Teaching team designed short self-assessment quizzes related to topics such as batch and continuous stirred-tank reactors, as well as tubular reactors. Each quiz consisted of 4–5 multiple-choice or true/false questions. As a novelty, in the 2024/2025 academic year, a prior knowledge assessment quiz on Chemical Kinetics was carried out.
- **In-Class Assessment:** The quizzes were completed by students during class sessions using their electronic devices. Each quiz lasted approximately 10 minutes.
- **Instant Feedback:** Through the Socrative platform, students received immediate feedback on their correct answers. The teacher monitored student answers in real time. At the end of the activity, the teacher provided a brief review of the correct answers and emphasized the questions answered incorrectly.
- **Evaluation Reports:** Upon completion of the process, the instructor was able to download detailed diagnostic assessment reports from the platform for further statistical analysis. This made it possible to identify areas for improvement and focus in-person sessions on topics with the lowest performance.

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