



ECRICE

2016

European Conference  
on Research in  
Chemical Education

BARCELONA  
7-10 September

BOOK OF  
ABSTRACTS

**EuCheMS**  
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## An Instructional Design for Teaching Particulate Nature of Matter to Visually Impaired Students

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Science typically provides students with a variety of opportunities to explore and examine real materials or models closely even if they are visual impaired. Science naturally provides visual impaired with the opportunities to develop their tactual exploration and fine motor skills through the exploration and manipulation of real materials. But traditionally science teaching mostly depend on visual instruction. This makes science learning difficult for visually impaired students. On the other hand, blind students have no visual input at all. So, some arrangements and accommodation should be done at teaching due to visual impairment.

Design based research (DBR) method was used in this study. DBR approach has been suggested as a solution for the connections between educational research and praxis. The research was carried out in three steps. In the first step, visually impaired students' individual needs have been identified in terms of scientific process skills and conceptual understanding regarding "The particulate nature of matter" unit. At this step, the embedded single-case design was used. In the second step, instructional materials and activities were designed. In the last step, the instructional materials that are designed for teaching particulate nature of matter to visually impaired students were evaluated in term of practicality, applicability and shortcomings. At this stage, the embedded single-case design was used.

Participant of this activity was eight students including three blind students. The implementation of unit has lasted nearly four weeks. Academic achievement test and semi-structured interview form were used as a data collection tools to determine effectiveness of instructional design. Students' success was observed as 78% when interviews and tests were analysed compared with the analysis that have done before starting implementation of instructional design. Nearly all of the students said they were quite satisfied with model and will be satisfied if all courses would be taught with this model