

DEVELOPING AND IMPLEMENTING A TWO-TIER MULTIPLE CHOICE TEST FOR THE PARTICULATE NATURE OF MATTER

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Abstract

The aim of this study is to develop a two-tier multiple choice test for using to determine students' alternative conceptions on the particulate nature of matter and to determine the effectiveness of it. Although multiple choice tests give information on students' alternative conceptions, they are not useful to determine the reason the response. Two-tier multiple choice tests are useful for diagnosing the students' conceptions and their reasons. Two-tier multiple choice questions consist of two tiers and the first-tier of each item consists of a content question having two, three, or four choices; the second part of each item contains four possible reasons for the answer given in the first-tier response. In this study, "The Particulate Nature of Matter Concept Test (PNMCT)", which consisted of 20 two-tier multiple choice questions, was developed and validity and reliability of it have been provided. The test was implemented 80 grade 6 students in Trabzon and tried to determine students' alternative conceptions.

Key Words: The particulate nature of matter, two-tier multiple choice test, alternative conception.