

## **DIAGNOSING TEACHER TRAINEES' BASIC CONCEPTION OF THE STRUCTURE OF THE ATOM USING ATOMIC RADIUS QUESTIONNAIRE**

### **ABSTRACT**

A proper understanding of the structure of the atom is fundamental in comprehending crucial concepts in chemistry. However, the concept of atom is abstract and complex in nature, conflicting with everyday experiences and common sense, and often requires high level of critical thinking skills to comprehend. This impedes most student from understanding and developing the right conception. Probing learners' conception of the atom using equally abstract and counterintuitive questionnaires may elicit responses produced out of memorization and rote learning. In this study, we explore the use of relatable concept to identify learners' misconception about the structure of the atom. Radius, a relatable concept, was used as a probe instrument to identify teacher trainees' misconception about the atom. Relevant questionnaires were constructed from how atomic radius is determined, and administered to second year teacher trainees to attempt. Responses were themed, coded and analyzed, enabling identification of level of conceptions, areas of misconception and possible sources of confusion. This study, therefore, provides an easy atomic structure conception instrument that can be applied outside or in-lesson to elicit relevant responses and gain a first-hand information on learners' conception about the atom.

**Keywords:** Misconception, atomic radius, teacher trainees, wave mechanical, atomic model.