

ABSTRAK

ERVI LUTHFI SHEILA WANNI LUBIS, Development of Innovative Student's Worksheet in Learning Redox and Electrochemistry Topic to Avoid The Student's Misconceptions. Tesis, Medan: Pendidikan Kimia, Program Pascasarjana, Universitas Negeri Medan. 2017.

Penelitian ini bertujuan untuk mengetahui miskonsepsi mahasiswa pada topik redoks dan elektrokimia, untuk mengetahui sumber yang mempengaruhi miskonsepsi dan untuk menghindari miskonsepsi menggunakan lembar kerja mahasiswa. Penelitian ini melibatkan 93 mahasiswa yang telah mengikuti matakuliah kimia umum II di jurusan kimia Universitas Negeri Medan. Instrumen penelitian ini terdiri dari tes diagnostik Three tier question untuk mengetahui miskonsepsi mahasiswa, lembar wawancara untuk mengetahui sumber miskonsepsi dan lembar kerja untuk menghindari miskonsepsi. Semua instrumen penelitian sudah divalidasi oleh ahli. Hasil penelitian ini menunjukkan bahwa (1) terdapat 56.6% mahasiswa mengalami miskonsepsi pada topik redoks dan elektrokimia. Miskonsepsi tertinggi pada sub topik perbedaan redoks dan bukan redoks, diagram sel Deskripsi reduksi dan oksidasi, Perkaratan logam, Penyetaraan reaksi redoks, potensial sel dan persamaan Nernst, Konsep elektrolisis sel dan massa senyawa/hukum Faraday (2) Terdapat 3 sumber yang mempengaruhi miskonsepsi pada mahasiswa yaitu mahasiswa, internet dan teman (3) Efektifitas lembar kerja inovatif dalam menurunkan tingkat miskonsepsi adalah sebesar 61%.

Kata Kunci : Miskonsepsi, Lembar Kerja, *Three tier questions*, Redox dan Electrochemistry.

ABSTRACT

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The research have objective to know students misconceptions on redox and electrochemistry concept, to know the sources of students misconceptions, to avoid misconception by students worksheet. This research involved 93 students was studied general chemistry II in chemistry department, State University of Medan. Instrument of the research consist of diagnostic test (three tier question) to know misconceptions on students, interview sheet to know sources of misconceptions and students worksheet to avoid misconceptions on students. All of instrument has been validated by expert. The result of research are (1) It was founded 52.6 % students had misconceptions on redox and electrochemistry. The higher misconceptions on sub concept Different of redox reaction, diagram cell, description of reduction and oxidation, corrosion reaction on metal, equalization of redox reaction, potential cell or Nernst Equation, electrolysis concept and mass of substance on electrolysis cell. (2) It was founded 3 sources that affect students misconceptions on redox and electrochemistry, that are Students, Internet and Friends (3) The Effect of innovative Students worksheet to decrease Misconceptions is 61%.

Keyword : Misconceptions, Students worksheet, Three tier questions, Redox and Electrochemistry.

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