

# PEMBELAJARAN KOLABORATIF *SHARING TASKS* DAN *JUMPING TASKS* PADA KONSEP LARUTAN ELEKTROLIT DAN NON-ELEKTROLIT BERDASARKAN HAMBATAN BELAJAR SISWA DAN REFLEKSI DIRI GURU

## ABSTRAK

Penelitian didasarkan atas pembelajaran yang masih berpusat pada guru dan rancangan pembelajaran yang tidak didasarkan pada hambatan belajar siswa yang berdampak pada rendahnya pemahaman siswa terkait konsep larutan elektrolit dan non-elektrolit. Tujuan dari penelitian ini adalah menghasilkan rancangan dan implementasi pembelajaran kolaboratif *sharing task* dan *jumping task* pada konsep larutan elektrolit dan non-elektrolit. Metode penelitian yang digunakan adalah deskriptif kualitatif. Instrumen yang digunakan yaitu item Tes Kemampuan Responden (TKR), pedoman wawancara, pedoman observasi, dan dokumentasi. Subjek pada penelitian ini sebanyak 86 siswa dan 1 guru kimia pada salah satu SMA di kota Bandung. Identifikasi hambatan belajar dilakukan pada 29 siswa XI MIA. Implementasi rancangan pembelajaran dilakukan pada dua kelas yaitu 27 siswa kelas X MIA-2 dan 30 siswa kelas X MIA-1. Hasil penelitian menunjukkan bahwa hambatan belajar epistemologi yang teridentifikasi pada siswa XI MIA yaitu (1) siswa berpikir air ( $H_2O$ ) dapat menghantarkan listrik dengan baik; (2) siswa salah dalam memahami jenis partikel bermuatan dalam larutan elektrolit; (3) siswa berpikir air bereaksi dengan zat terlarut dan membentuk zat baru; (4) siswa berpikir adanya gelembung berpengaruh dalam klasifikasi sifat larutan elektrolit; (5) siswa menemui hambatan dalam menjelaskan proses pelarutan zat terlarut dalam air secara submikroskopi; (6) siswa berpikir ikatan pada molekul  $H_2O$  dan  $HCl$  adalah ionik karena terurai menjadi ion-ion; dan (7) siswa berpikir lelehan berasal dari padatan maka berikatan logam. Refleksi diri guru terkait dengan pengaturan waktu, reduksi soal, penambahan respon siswa dan antisipasi guru, dan situasi didaktis. Rancangan pembelajaran berupa *chapter design* dan *lesson design* yang terdiri dari tiga kegiatan yaitu (1) kegiatan awal (video *electrofishing* dan demonstrasi uji nyala lampu); (2) kegiatan *sharing tasks* (pemberian 5 soal terkait konten larutan elektrolit dan non-elektrolit yang sesuai dengan buku teks); dan (3) kegiatan *jumping tasks* (pemberian tantangan yaitu menggambarkan proses ionisasi dan memprediksi sifat hantaran dari air hujan, air laut, dan air minum kemasan). Implementasi rancangan pembelajaran di kelas X MIA-2 menunjukkan terjadinya kegiatan saling belajar namun konsep yang siswa dapatkan lebih banyak berasal dari buku teks. Implementasi di kelas X MIA-1 menunjukkan hasil yang lebih baik dimana siswa aktif dalam berbagi pemikirannya sehingga siswa dapat membangun sendiri konsep larutan elektrolit dan non-elektrolit. Siswa berhasil “*jumping*” dari kemampuan aktual ke kemampuan potensialnya dengan *scaffolding* teman dan guru.

Kata kunci : pembelajaran kolaboratif, *sharing task*, *jumping task*, hambatan belajar siswa, larutan elektrolit dan non-elektrolit

# **COLLABORATIVE LEARNING *SHARING TASKS* AND *JUMPING TASKS* OF ELECTROLYTE AND NON-ELEKTROLYTE SOLUTION CONCEPT BASED ON STUDENT'S LEARNING OBSTACLES AND TEACHER SELF-REFLECTION**

## **ABSTRACT**

Teacher centered learning and lesson design which didn't based on student's learning obstacles give impact on the lack of student's understanding on electrolyte and non-electrolyte solution concept. The aim of this research was to produce lesson design and implementation of collaborative learning in sharing tasks and jumping tasks of electrolyte and non-electrolyte solution concept. The method used in this study was descriptive qualitative. Item Test (TKR), interview guideline, observation sheets, and documentation were used as instruments to collect data. The subjects of this research were 86 students and 1 teacher of one of High School in Bandung. Identification of student's epistemology obstacles was done to 29 students of XI Science. Lesson design was implemented twice to 27 students from class X Science-2 and 30 students from class X Science-1. The result showed that student's learning obstacles that have been identified were (1) students think that water ( $H_2O$ ) can conduct electricity well; (2) students misunderstood of charged particles in electrolyte solution; (3) students think that water can react with solute and form a new substances; (4) students think that the existence of bubble was influence in classification of electrolyte solution; (5) students find difficult to explain the process of dissolving solute in water from submicroscopic level; (6) students think that chemical bonding of  $H_2O$  and  $HCl$  were ionic because it can dissociation into ions; and (7) students think that melting form of ionic substance from solid, so the chemical bonding was metal. Teacher's self-reflection of this design related to time management, reduction of the tasks, adding student's respons and teacher's anticipation, and didactic situation. Lesson design consisted of three activities: (1) the initial activity (video of electrofishing and demonstration of light bulb test); (2) sharing tasks activity (giving five questions regarding the content of the electrolyte and non-electrolyte solution according to text book); and (3) jumping tasks activity (giving a challenge which is to draw the ionization process and predict the conductivity of rain water, sea water and consumed water). Implementation of the lesson design in X Science-2 showed that the activity of "sharing" was good but the concept that students got was from book. Implementation at X Science-1 showed the learning activity was better and student succeed in construct their own concept. Students succeeded "jumping" from their actual development to potential development through scaffolding from their peers and teachers.

Keywords : collaborative learning, sharing tasks, jumping tasks, student's learning obstacles, electrolyte and non-electrolyte solution