ABSTRAK

Penelitian ini bertujuan untuk mendapatkan informasi mengenai peranan PhET-SS dalam membangun konsep kelarutan dan hasil kali kelarutan serta keterampilan proses sains siswa kelas XI di salah satu SMA Kota Bandung. Metode yang digunakan dalam penelitian ini adalah kuasi eksperimen dengan desain penelitian *nonequivalen control group design.* Subjek penelitian adalah 40 orang siswa kelas XI IPA 3 dan 34 orang siswa kelas XI IPA 4. Instrumen penelitian yang digunakan berupa tes tertulis (*baseline* penelitian), LKS, angket, dan lembar observasi. Data hasil penelitian diuji menggunakan uji t dua sampel independen, Mann-Whitney U dan uji Anova satu jalur menggunakan software SPSS *Statistics* versi 17.0. Hasil penelitian menunjukkan bahwa. (1) PhET-SS berperan dalam membangun konsep kelarutan dan hasil kali kelarutan pada tiga konsep (kelarutan, Q, dan $K_{sp,}$ (2) PhET-SS sangat berperan dalam membangun konsep secara signifikan pada siswa kelompok rendah, (3) PhET-SS dapat membangun keterampilan proses sains siswa pada indikator mengajukan pertanyaan, meramalkan, mengamati, mengkomunikasikan hasil penelitian dan menafsirkan hasil pengamatan, (4) Keterampilan proses sains untuk ketiga kelompok siswa pada percobaan pelarutan garam dapur dan pelarutan garam sukar larut pada indikator mengajukan pertanyaan berada pada kriteria sangat baik (100,00% dan 90,00%); pada indikator meramalkan percobaan berada pada kriteria sangat baik (85,00% dan 87,50%); pada indikator mengamati berada pada kriteria baik (69,17% dan 65,83%); pada indikator mengkomunikasikan hasil penelitian berada pada kriteria baik (71,00% dan 69,63%); pada indikator keterampilan menafsirkan pengamatan sub indikator menghubungkan hasil pengamatan berada pada kriteria baik (65,50%) dan cukup (44,02%); pada indikator menafsirkan pengamatan sub indikator menarik kesimpulan definisi kelarutan berada pada kriteria cukup (59,64%) sedangkan pada *quotient* reaksi (Q) dan tetapan hasil kali kelarutan (K_{sp}), berada pada kriteria sangat kurang (13,44%).

Kata Kunci: PhET-SS, Membangun Konsep, Kelarutan dan Hasil Kali Kelarutan, Keterampilan Proses Sains (KPS).

ABSTRACT

This study aimed to obtain information on the role PhET-SS in developing the concept solubility and solubility product and science process skills of students of class XI in one high school in Bandung. The method used in this study was a quasi-experimental research design nonequivalen control group design. The subjects were 40 students of class XI IPA 3 and 34 students of class XI IPA 4. The research instrument used in the form of a written test (baseline study), worksheets, questionnaires, and observation sheet. Data were tested using two

independent samples t test, Mann-Whitney U and one-way ANOVA test using SPSS software version 17.0 Statistics. The results showed that. (1) PhET-SS have a role in developing the concept of solubility and solubility product on the three concepts (solubility, Q, and K_{sp}, (2) PhET-SS significantly had a role in constructing the concept of low group student, (3) PhET-SS can build students' science process skills on indicators asking questions, predicting, observing, communicating the results of research and interpret the observations, (4) science process skills for all students group on salt dissolution and insoluble salt dissolution experiment on indicator asking questions is classified as a very good criterion (100,00% and 90,00%); on indicator predicting the experiment is classified as a very good criterion (85,00% and 87,50%); on indicator observe is classified as a very good criterion (69,17% and 65,83%); on indicator communicate the results of the experiment is classified as a very good criterion (71,00% and 69,63%); on indicator interpreting observational skills sub-indicators linking the observation are classified as a very good criterion (65,50%) and sufficient (44,02%); on indicator interpret observation sub-indicator draw conclusion on the definition of solubility is classified as a sufficient criterion (59,64%) while the reaction quotient (Q) and the solubility product constant (K_{sp}) is classified as a very less criterion (13.44%).

Keywords: PhET-SS, Conctructing Concept, Solubility and Solubility Product, Science Process Skills.