ABSTRACT
Science education is crucial for the understanding of our environment and it is an essential tool for technological development in any society. Hence, nations all over the world continue to ensure that the teaching of science subjects should be done in a manner that enhances the achievement of intended objectives. Science process skills are central to the development of the affective skills, which may influence one’s self-concept in chemistry. In turn, these may influence students’ achievement. This study was intended to investigate the effect of the science process skills teaching approach (SPSTA) on students’ self-concept in chemistry. The study involved quasi-experimental research where the Solomon Four Group Non-Equivalent Control Group design was employed. The target population consisted of students in the secondary schools in Nyando District. Purposive sampling was used to obtain four district secondary schools in Nyando District to ensure that the number of boys and girls in each school was approximately the same. The sample consisted of 153 Form Three students drawn from four district secondary schools. The Form Three classes were randomly assigned to the experimental and control groups. The study covered two topics selected from the KCSE Chemistry syllabus, that is, Volumetric analysis (Titration) and Qualitative analysis. To determine students’ entry point in terms of chemistry self-concept on the selected topics, students’ chemistry self-concept (SSCS) questionnaire was used as a pre-test. After the administration of treatment, which lasted five weeks, the same test was administered to the four groups as a post-test. SSCS was adapted from the Self-Descriptive Questionnaire II (SDQ) scale. Reliability of SSCS was estimated using Cronbach’s alpha coefficient formula. The reliability coefficient of 0.95 was established for the instrument and indeed was accepted as suitable. The data generated were analyzed using descriptive statistics, t-test, ANOVA and ANCOVA. The level of significance for acceptance and rejection of the hypothesis was at $\alpha = 0.05$. The results revealed that SPSTA had significant effect on students’ self-concept in chemistry. The outcome of this study may provide an insight for designing instructional strategies that aim to enhance students’ chemistry self-concept and contribute to the improvement of teaching and learning of Chemistry in secondary schools in Kenya. It is expected that the findings of the study may be used by Kenya Institute of Education, Education Administrators and Quality Assurance Standards’ Officers, who are major stakeholders of the Ministry of Education to
re-examine the instructional methodologies of teaching chemistry in the secondary school curriculum.

**KEY WORDS:** Science process skills, teaching approach on secondary school, self-concept in chemistry.

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