

Effects of socio-scientific issues based on thinking maps approach on future thinking of secondary school students

ABSTRACT

This study was conducted to examine the effects of the socio-scientific issue (SSI) approach assisted by the future thinking map (FTM) on five constructs of future thinking, namely i) understanding the current situation, ii) identifying the trends, iii) analyzing the relevant drivers, iv) synthesizing the possibilities or needs of the future and v) choosing with the justification of the desired future. The future-thinking test instrument was developed to measure the level of future thinking. A quasiexperimental pre-test and post-test control group design was employed. A total of 255 form four students (age 16) from three randomly selected rural secondary schools in Tawau District, Malaysia were assigned to i) SSI-FTM (n = 85), ii) SSI (n = 85), and iii) conventional (CV, n = 85) teaching and learning (TL) strategies. The results of the MANCOVA analysis showed that there was a statistically significant effect across all three groups of TL strategies. The ANCOVA analysis showed that there was a statistically significant effect of the SSI-FTM TL strategies compared to the SSI and CV TL strategies on the five future thinking constructs. The quasi-experimental study proves that the SSI-FTM TL strategy is effective in nurturing future thinking among form four students in science lessons.