Some chemistry students were investigating the relationship between concentration and rate of reaction. In the investigation, different concentrations of hydrochloric acid were added to a sodium thiosulfate solution to produce solid sulfur. This reaction was represented by the following equation.

$$2\ H^{+}(aq) + S_2O_3^{2-}(aq) \rightarrow SO_2(g) + S(s) + H_2O(\ell)$$

A piece of paper with a cross drawn on it was placed under the reaction vessel. The time taken for the cross to disappear due to the formation of the precipitate was measured.

22. The independent variable was the

(a) time taken for the cross to disappear.
(b) total volume of the mixture.
(c) rate of reaction.
(d) concentration of hydrochloric acid.