

EFFECTS OF GUIDED DISCOVERY APPROACH ON SENIOR SECONDARY TWO STUDENTS' PERFORMANCE IN VOLUMETRIC ANALYSIS IN GOMBE, GOMBE STATE

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INTRODUCTION & AIM

Chemistry plays a vital role in science education and national development, yet students' performance in volumetric analysis remains poor due to ineffective teaching strategies and abstract concepts. This study aims to examine the effect of the guided discovery approach on students' performance in volumetric analysis and determine whether gender differences exist.

METHOD

The study adopted a quasi-experimental pre-test and post-test design. A sample of 98 Senior Secondary Two students was selected from two schools.

- Experimental group: taught using guided discovery.

- Control group: taught using conventional method.

- Data were collected using the Volumetric Analysis Performance Test (VAPT) and analyzed using mean, standard deviation, and ANCOVA.

RESULTS & DISCUSSION

Students taught using guided discovery performed significantly better than those taught using conventional methods.

- Experimental group mean gain: 17.16
- Control group mean gain: 9.25

The null hypothesis of no significant difference between the two groups was rejected ($p < 0.05$), confirming the effectiveness of the guided discovery approach.

Both male and female students showed improvement with no significant gender difference. The null hypothesis on gender was therefore retained ($p > 0.05$).

The findings indicate that guided discovery enhances conceptual understanding, problem-solving skills, and active learning in Chemistry.

CONCLUSION

Guided discovery approach significantly improves students' performance in volumetric analysis and promotes gender equity in learning outcomes.

FUTURE WORK / REFERENCES

Future studies should explore its application in other Chemistry topics and educational levels.

Key References:

Ababio (2024); Akinbobola & Jegede (2008); Ali et al. (2014); Charles-Ogan et al. (2017)