

Perception of Students Toward Learning Chemistry in Senior Secondary School: A Case Study of Kaduna South Local Government Area, Kaduna State, Nigeria

Mansurat O. Shoge and *Kabiru Dauda

Chemistry Department, Faculty of Science, Air Force Institute of Technology, Kaduna.

*Corresponding Author

DOI : <https://dx.doi.org/10.47772/IJRISS.2024.803139S>

Received: 19 May 2024; Revised: 05 June 2024; Accepted: 11 June 2024; Published: 19 July 2024

ABSTRACT

Interest is the most important factor that help students to learn and understand chemistry concepts. Students must have constructive interest in achieving qualitative chemistry knowledge. In this study, an attempt was made in ascertaining the remote causes for the poor performance reported in recent times in Chemistry at the senior secondary level. This research aims to investigate the perception of students' interest towards learning chemistry at senior secondary school. A descriptive research design was adopted in this study. About 50 students from five different schools from area of the study were used as sample and a questionnaire containing 10 statements was used for data collection. The result revealed that most of the students do not correlate Chemistry concepts with their day-to-day lifestyle. They also found it difficult to understand Chemistry lessons due to inadequate resources that are needed in teaching and learning Chemistry. With these findings attention needs to be given in schools to improve on attitudes, interests and perceptions of students toward Chemistry as a subject.

Keywords: Perception, Interest, Learning Chemistry, Secondary Schools

INTRODUCTION

Education, particularly Science and Technical education is the factory for the production of the different categories of professionals with skills to turn the country's economy around and usher in the desired technological advancement which is very much required for the elevation of Nigeria from a 'consumer nation' to a 'producer nation'; from a 'developing nation' to a 'developed nation' (Ava, 2008). Acquisition of appropriate scientific and technological skills is necessary to cope with the challenges presented by evolving the needs of modern work place in our industries and ever growing non-formal sector. By providing access to appropriate learning experience designed to broaden skills and knowledge can increase productivity and significantly improve the fortunes of the unemployed, thereby reducing poverty and unemployment amongst our youth.

Chemistry as a subject is the cornerstone of all the science subjects that allow students to understand and give detailed explanation of almost all-natural phenomena they come across in their day-to-day life or in science laboratory and it is a requirement to several sciences, medical and engineering courses that are studied in tertiary institutions in Nigeria (Adesoji, 2008); (Woldeamanuel, Selassie, & Gizaw, 2019).

Chemistry learning supposed to be result oriented and students centered, and this can only be achieved when students are willing and the teachers are favourably disposed, using the appropriate methods and resources in teaching the students (Adesoji, 2008). Naturally, students are curious and need to be actively involved in the learning process in which they are continuously equipping, testing, speculating and building their own personality to construct knowledge; with this, such knowledge becomes valid, meaningful and useful to them.

Despite the prime position of Chemistry occupies in our educational system and the efforts made by researchers to enhance performance, students' performance in Chemistry and Sciences in general are still low. Some of the reasons identified for students' poor performance are laboratory inadequacy, teachers' attitude, students'

perception and attitude, examination malpractice, time constraint for conduction of practices’, non-coverage of syllabus, class size, non-professionalism and environment.

A study by Yunus and Ali (2012) stated that there are many factors that contribute to students’ success which among there is the students’ attitude towards learning. The result reveals that most students have positive attitude towards learning Chemistry when they conduct experiment in laboratory and teachers’ teaching style while some show negative attitude towards Chemistry because of lacking interest in the subject and also the syllabus itself.

Some researchers reported that the low performance in chemistry is attributed to the negative attitude towards learning and teaching chemistry and ineffective use of instructional techniques and teaching aids by chemistry teachers (Musengimana *et al.*, 2021; Nidup *et al.*, 2021; Timilsena *et al.*, 2022)

Studies related to perception and attitude of students towards learning Chemistry has been carried out and reported globally. A research by Arniezca & Ikhsan, (2021) states that students have positive attitude towards Chemistry when it comes to the relevance of the subject, but there is a significance difference in students’ attitude towards learning Chemistry among male and female students in many aspects; which signifies that gender affects students’ perception towards learning Chemistry. They further suggest that teachers need to motivate and enhance Chemistry teaching to increase students’ positive attitude towards Chemistry as a subject.

As against backdrop, this study therefore is set out to evaluate the perception and interest of students on the impact of teaching and learning Chemistry in senior secondary schools in Kaduna South Local Government Area of Kaduna State, Nigeria.

The purpose of this research is to evaluate the perception of students’ interest towards learning Chemistry in senior secondary schools.

To evaluate perception of students’ interest towards learning chemistry, two research questions were built up as follows:

RQ1: how Chemistry as a subject has been understood in secondary schools by students?

RQ2: is there any difficulty encountered by students in learning Chemistry?

METHODOLOGY

This study adopted a descriptive method that aims to evaluate students’ attitude towards learning Chemistry. The population of the study comprised of all senior secondary school students of science classes in Kaduna South local government area of Kaduna state. The sample of the study were 50 senior secondary school students from five schools in Kaduna South local government of Kaduna State. The samples were selected using convenient sampling technique to facilitate the study. The samples were given instrument for data collection which is a questionnaire containing 10 statements. This questionnaire was made with a Likert scale, consisting of 5 scales; 5 - Strongly agree, 4 – Agree, 3 – Undecided, 2 – Disagree and 1- Strongly disagree.

RESULT AND DISCUSSION

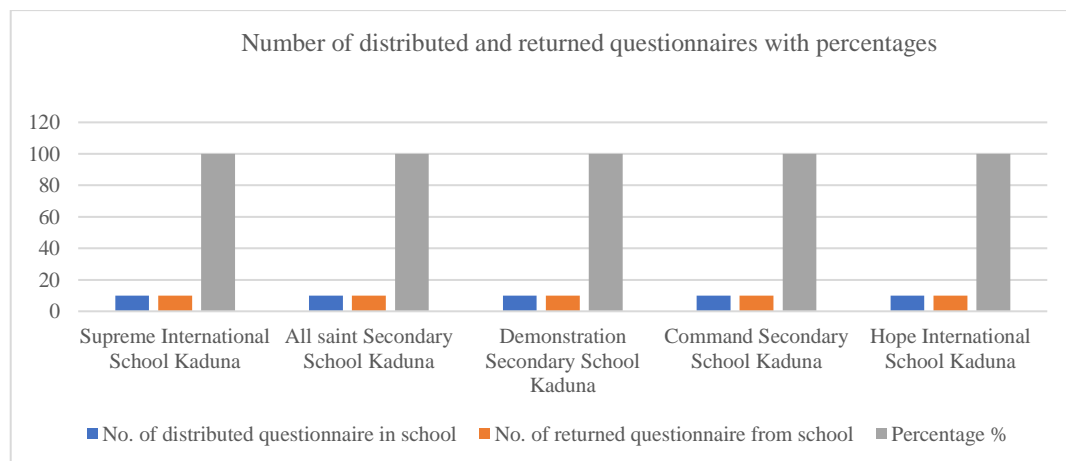


Figure 1: showing the result of number of distributed and returned questionnaires.

Figure 1 showed the distribution of questionnaire to 5 different schools where 10 questionnaires were randomly distributed to ten (10) students of each of the schools making the total of 50 questionnaires. All the distributed questionnaires were returned (100%) and the researchers made good use of the data obtained by these questionnaires.

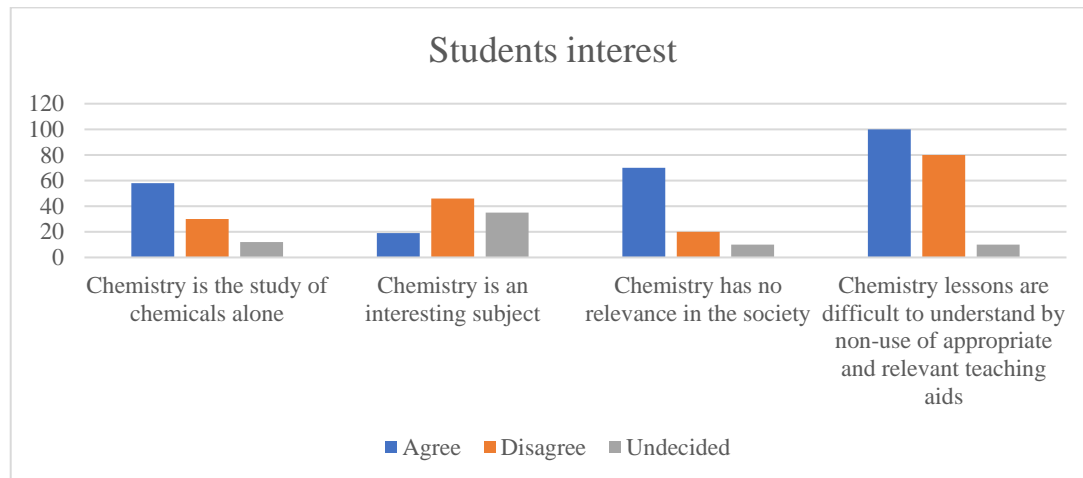


Figure 2: showing results on students' interest in learning and teaching chemistry.

Figure 2 presented the summary of responses of students to statements in the questionnaire which requested information on students' general perception of learning chemistry as a subject. Students were asked to indicate their level of agreement or disagreement to statements to seek their general interests, attitudes and perceptions of Chemistry.

From figure 2, it can be seen that 29 (58%) of the students agreed that chemistry is the study of chemicals alone while 15 (30%) disagreed. In this study, 46% of the respondents disagreed that Chemistry is an interesting subject this agrees with findings from Yunus & Ali, (2012), Al-najdi, (2013), Wiyarsi *et al.*, (2017) and Surya & Arty, (2021) which stated that most students lack interest in Chemistry as a subject and its syllabus. 72% of the respondents agreed that Chemistry as a subject has no any relevance in the society. Based on the responses gotten on the three statements from the questionnaire discussed above, it has been proved that most students do not have good understanding of Chemistry as a subject because they were not able to relate the chemistry concepts with their day-to-day life for instant problem solving. Chemistry contains many abstract concepts, which require significant commitment of time and effort from students (Tilahun & Tirfu, 2016). 80% of the respondents were agreed that Chemistry lessons are difficult to understand without relevant teaching aids, this is in-line with the findings of Musengimana *et al.*, (2021) which proved that use of teaching aids positively affect attitude of students towards learning Chemistry.

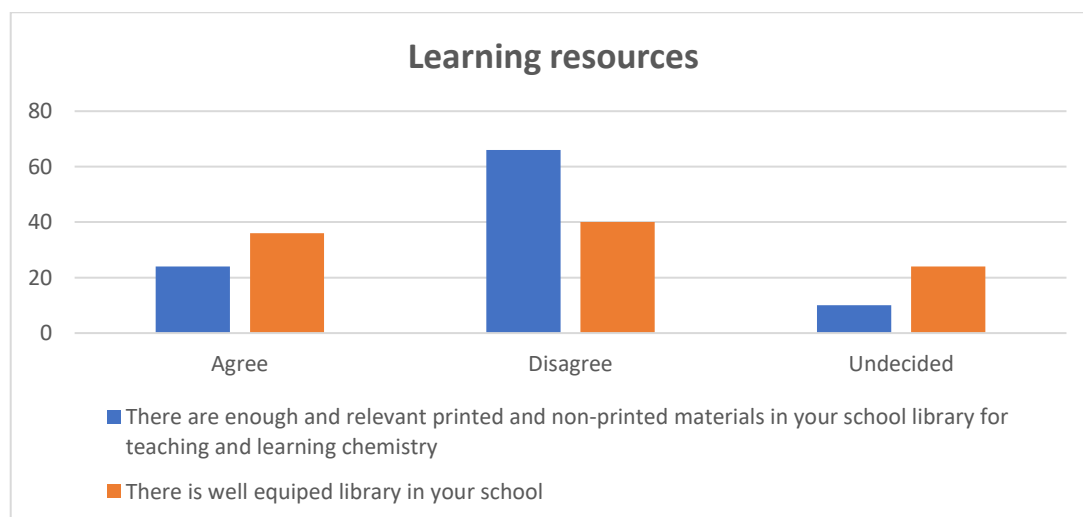


Figure 3: showing results of some learning resources in schools utilised students.

According to figure 3, 40% of the respondents were disagreed with the statement that there is well equipped library in their school while 36% of the respondents agreed with the statement. Also, 66% were disagreed with the statement that there are enough printed and non-printed materials in their school library for teaching and learning of Chemistry.

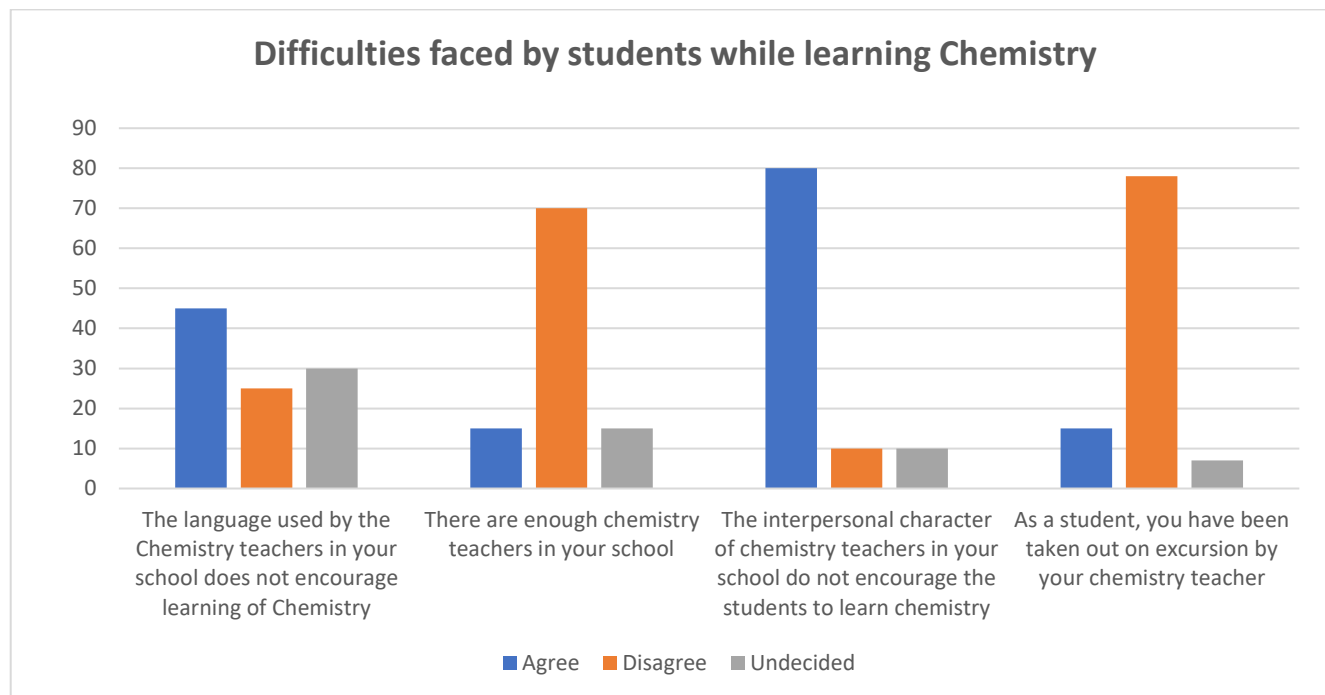


Figure 4: showing the result of some difficulties faced by students when learning chemistry.

40 students (80% of the respondents) agreed with statement the interpersonal character of their Chemistry teachers discourage them from learning Chemistry, interpersonal character plays a vital role in teaching and learning process in which it would motivate the students in understanding the concepts to be learn and vice versa; this is in line with the research finding of Tilahun & Tirfu, (2016) . 68% of the respondents disagreed with statement “There are enough chemistry teachers in your school”, this is due inadequate number of chemistry teachers in their schools. 46% disagreed with statement “The language used by the Chemistry teachers in your school does not encourage learning of Chemistry” which is in line with the finding of Najdi, (2013). With the responses of these statements, the result of the study revealed that students encounter difficulty in learning chemistry because all factors mentioned in the statements are very important in learning Chemistry.

From figure 4, 78% of the respondents disagreed with the statement as a student, you have been taken out on excursion by your chemistry teacher.

CONCLUSION

This study aimed at finding the perception of students’ interest towards teaching and learning Chemistry in some selected senior secondary schools. The study specifically considered the general perception of students’ interest in some basic concepts of Chemistry as a subject. The findings revealed that the factors responsible for negative perception of students towards learning Chemistry includes very low interest in the subject, unavailability of library, inadequate resources in school library, students were not taken out of school for fieldtrip to be familiar with some practical aspect of the subject, lack of adequate Chemistry teachers. Hopefully, these findings provided resourceful information which would be used in overcoming the problems encountered by students learning chemistry and encourage students to develop good interest toward learning and teaching chemistry at various educational levels.

It also provides insight information to the secondary school science teachers and science curriculum planners to revise their teaching and learning methods, so that students’ interest towards learning, good performance in examination and engagement in chemistry activities increase.

REFERENCES

1. Al-najdi, S. D. (2013). Psychological Research & Studies Students ' Attitude towards Learning Chemistry. *Journal of Al-Quds Open University for Educational & Psychological Research & Studies*, 1(1). <https://platform.almanhal.com/Files/Articles/72421>
2. Arniezca, E. Y., & Ikhsan, J. (2021). Students' Attitudes Towards Chemistry: On the Gender and Grades Perspective. *Proceedings of the 6th International Seminar on Science Education (ISSE 2020)*, 541(Isse 2020), 309–314. <https://doi.org/10.2991/assehr.k.210326.044>
3. Musengimana, J., Kampire, E., & Ntawiha, P. (2021). Factors Affecting Secondary Schools Students' Attitudes toward Learning Chemistry: A Review of Literature. *Eurasia Journal of Mathematics, Science and Technology Education*, 17(1), 1–12. <https://doi.org/10.29333/ejmste/9379>
4. Najdi, S. (2013). Students Attitude toward Learning Chemistry. *Journal of Education and Research Al Quds Open University*, 1(1), 11–31. <https://doi.org/10.12816/0016201>
5. Nidup, Y., Zangmo, S., Rinzin, Y., Yuden, S., Subba, H. R., & Rai, J. (2021). The Perception of Class X Students of Phuentsholing Higher Secondary School towards Chemistry. *Anatolian Journal of Education*, 6(1), 51–66. <https://doi.org/10.29333/aje.2021.614a>
6. Surya, W. P., & Arty, I. S. (2021). Students' attitudes toward chemistry based on their learning experiences. *Journal of Physics: Conference Series*, 1806(1), 1–7. <https://doi.org/10.1088/1742-6596/1806/1/012178>
7. Tilahun, K., & Tirfu, M. (2016). Common difficulties experienced by grade 12 students in learning chemistry in Ebinat Preparatory School. *African Journal of Chemical Education*, 6(2), 16-32–32.
8. Timilsena, N. P., Krishna, ;, Maharjan, B., & Devkota, M. (2022). Teachers' And Students' Experiences In Chemistry Learning Difficulties. *Journal of Positive School Psychology*, 6(10), 2856–2867. <http://journalppw.com>
9. Wiyarsi, A., Pratomo, H., & Priyambodo, E. (2017). Chemistry Learning: Perception and Interest of Vocational High School Student of Automotive Engineering Program. *3rd International Seminar on Science Education*, 3(October), 359–366.
10. Yunus, F. W., & Ali, Z. M. (2012). Urban Students' Attitude Towards Learning Chemistry. *Procedia - Social and Behavioral Sciences*, 68, 295–304. <https://doi.org/10.1016/j.sbspro.2012.12.228>