



Self-Regulation as a Correlate of Volumetric Analysis Skills Acquisition among Senior Secondary School Students in Chemistry in Ondo State

Owolabi Esther Olubunmi¹, Ikuelogbon Olamire James² & Jimoh Mayowa Titus¹

¹Department of Science Education, University of Nigeria, Nsukka

²Department of Educational Foundations, University of Nigeria, Nsukka

Corresponding Author: olamire.ikuelogbon@unn.edu.ng

Abstract

The study investigated the relationship between self-regulation and volumetric analysis skills acquisition among senior secondary school students in chemistry in Ondo State. Two research questions and two null hypotheses guided the study. Correlational research design was used for the study. The population of the study was 6, 7952 SS II chemistry students, which comprised 3455 males and 3340 females respectively. The sample size of the study was 462 SSII (240 males and 222 females) chemistry students from 24 public senior secondary schools across the three sampled zones selected using multistage sampling technique. Two instruments VASRS and SEIQ were used to collect data for the study. The instruments were validated by five experts. The Cronbach Alpha method was used to determine the internal consistency of Students Emotional Intelligence Questionnaire (SEIQ) which yielded an overall reliability coefficient of 0.77. On the other hand, reliability of Volumetric Analysis Skills Acquisition Rating scale was established using Kendall's coefficient of concordance and it yielded an overall reliability coefficient of 0.76. The data obtained for the study were analyzed using multiple regression analysis to answer the research questions and Hayes process macro was used to test the two hypotheses at 0.05 level of significance. The findings of the study revealed that there was a significant positively high relationship between students' self-regulation and volumetric analysis skills acquisition and gender does not significantly moderate the relationship between self regulation and volumetric analysis skills acquisition. Based on the findings, it was recommended that: curriculum experts should develop affective instructional curriculum that incorporates self-regulation skills with the objective of enhancing personal and career success of students and government should organize seminars and workshop for teachers to enable them understand the concept of self-regulation in order to build their own emotions and that of their students, among others.

Keywords: self-regulation, chemistry, volumetric analysis, science process skills

Introduction

Chemistry has been one of the cornerstones of science, technology, and industry. It is the scientific study of interaction of chemical substances that constituted atoms or the subatomic particles: protons, electrons and neutrons (Adesoji & Ogini, 2012). Chemistry is a branch of science that deals with constituents of matter like atoms, molecules, ions, e.t.c and its properties, structure, behaviour, and interactions among them (Anne, 2019). Alan (2021) defined chemistry as the science that deals with the properties, composition and structure of substances, the transformations they undergo, and the energy that

is released or absorbed during these processes. Thus, because chemistry is a pre-requisite subject for most science oriented courses in tertiary institutions and it is necessary that the teaching be effective for better academic achievement.

The quest for students' better academic achievement has been a challenge to government, teachers and parents, curriculum planners, among others. Thus the government has put in place several interventions such as employment of more chemistry teachers, review of programmes, policies, procedures, curricula, facilities, teaching equipments, among

others for students' better academic achievement (Obilor & Briggs, 2021). According to Oladejo (2018), despite these several interventions by government, students' achievement in chemistry is still low in Nigeria secondary school. Adu-Gyamfi, Gharthey and Agyei (2018), opined that students' achievement in volumetric analysis is linked with science process skills acquisition which the author referred to as volumetric analysis skills owing to its importance in science teaching. This led credence to the current study because volumetric analysis skills acquisition could enhance students' academic achievement in chemistry practical.

Chemistry practical involves teaching chemistry in an inquiry manner in the laboratory. According to Shana and Abulibdeh (2020), chemistry practical is an enquiry based teaching that creates opportunity for students to perform hands-on activities to gain real experience and knowledge. Chemistry being a practical science subject provides students with the opportunity to acquire and use science process skills to solve problems in their daily activities and contribute to the development of the nation (Abungu, Okere & Wachanga, 2014). Secondly, qualitative chemical analysis is the branch of analytical chemistry, which involves identification of species in a mixture. According to Clauder (2021), in qualitative analysis procedure, the chemical properties of an unknown substance are determined by systematically reacting the unknown reagent with a number of different reagents, in order for the unknown to be identified. Igwe and Bayim (2019) predicted a significant relationship between measurement and observation skills and achievement of students in chemistry practical. Chemistry practical forms 40% of the total scores in the West African Examination Council (WAEC) in chemistry result (Wafaa & Yassmen, 2019). Chemistry practical can be successful when students acquire science process skills. According to Keziah and Adamu (2022), the area of chemistry practical that is mostly taught in secondary schools is volumetric analysis, therefore, this study laid emphasis on volumetric analysis.

Volumetric analysis uses titration to determine the concentration of a solution by carefully measuring the volume of one solution needed to react with another. According to Louis and Lussac (2019), volumetric analysis is any method of quantitative chemical analysis in which the amount of a substance is determined by measuring the volume that it occupies. It is a widely-used quantitative analytical method or a procedure for working out the titre (Wired Chemist

2020; Navilgo 2019). Oriakhi (2020) explained that Volumetric analysis is a chemical analytical procedure based on measurement of volumes of reaction in solutions. According to Alam, Oke and Orimogunje (2020) volumetric analysis is carried out in senior secondary school chemistry laboratories to determine concentrations of unknown substances, the quantitative relationship between two reacting solutions and s to determine mass relationships.

However, despite the importance of chemistry and volumetric analysis inclusive, students' academic achievement seems to be poor in practical chemistry. Ogunleye (2022) reported that students' poor achievement in chemistry practical is alarming. WAEC Chief Examiner's report on chemistry practical (chemistry 3) between 2019-2023 indicated students' poor achievement in practical chemistry, volumetric analysis inclusive. WAEC chief examiner's report 2019 stated that the raw mean score was 27.0 and standard deviation of 9.22. In 2020, the WAEC Chief examiner reported a raw mean score of 27.0 and standard deviation of 6.93. Fatoba et al. (2020) reported that students achievement in practical chemistry was poor in the last twelve years (2009-2020) according to an analysis from Ondo State Ministry of Education shown in 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019 and 2020 only 34.12%, 32.01%, 30.82%, 31.04%, 29.17%, 33.12%, 32.12%, 33.13%, 34.14%, 33.29%, 33.81% and 38.27% respectively, obtained credit pass and above in chemistry and practical chemistry inclusive.

However, considerable research evidences abound, which have implicated several factors as contributors to students' poor academic achievement in chemistry practical. Such include: laboratory inadequacy, inadequate classroom and equipment, poor knowledge of the subject (Onochie, 2018); inadequate chemistry teachers, materials and motivation (Agogo & Onda, 2014); learning difficulty due to abstract nature of chemistry concepts (Onuekwesi, 2015). Aina (2014) reported on other factors like teachers', school and home environment, conceptual difficulty and time constraint for practical classes. Tajudeen (2015) observed that senior secondary school chemistry students perceived volumetric analysis as a difficult concept to experiment due to inadequate science process skills acquisition. Therefore, exposure to chemistry practical such as volumetric analysis could enhance students' science process skills acquisition and academic achievement in chemistry.



Science process skills (SPS) are transferable skills that are applicable to many sciences and reflect the behaviours of scientists. Okafor et al. (2015) defined science process skills as part of thinking skills of the 21st century which scientists use to build knowledge, solve problems, and conduct experiments. According to Safaah, Muslim, and Liliawati (2017) the American Association for the Advancement of Science (AAAS) came up with fifteen (15) science process skills and classified them into the basic and integrated skills; the basic science process skills comprise observing, measuring, classifying, communicating, inferring, using number, using space/time relationship and questioning while integrated science process skills are controlling and manipulating variable, hypothesizing, defining operationally, formulating models, designing experiment and interpreting data. Hence, both basic and integrated science process skills are relevant and appropriate at the senior secondary school level in Nigeria.

However, this study used six (6) out of the fifteen (15) science process skills. These comprised of four (4) basic science process skills (observation, measuring, classifying, and communication) and two (2) integrated science process skills (data interpretation and experimenting). The choice of these skills led credence to Fasakin (2018) who opined that these are skills that students often use during the conduct of chemistry practicals such as volumetric analysis in senior secondary schools. Thus, according to Maranan (2017), equipping students with these skills is required for conducting volumetric analysis practical. Hence, the possible absence of science process skills that are used for conducting volumetric analysis may perhaps be influenced by chemistry students' self-regulation level.

Self-regulation is the ability to control one's emotions and impulses. It involves expressing one's emotions appropriately. Students that are self-regulated do not allow themselves to become too angry or jealous, and they do not make impulsive, careless decisions (Goleman, 2013). Students who lack self-regulation cannot manage their emotions and impulses appropriately. Such students are easily disappointed, frustrated and troubled when handling stress due to lack of self-confidence. Lack of self-regulation makes learners to lose composure in the face of academic activities thereby affecting their achievement (Mishra, 2012). Self-regulation supports perseverance and focus. Students who could regulate their actions are able to perform well in academic activities in the classroom. This choice led precedence to Olakanmi and Gumbo

(2017) who opined that self-regulation is essential emotional intelligence attribute that directly contribute to the acquisition of volumetric analysis skills. Therefore, students' self-regulation could influence their volumetric analysis skills acquisition regardless of gender.

Gender is mainly used conventionally to describe how the society gives certain roles to males and females. According to Igbo, Onu and Obiyo (2015) regarded gender as how individuals perceived themselves in such a way that most people of same sex identify themselves with certain attributes. Oludipe (2012) defined gender as an ascribed attribute that differentiates feminine from masculine socially. The differences in students' academic achievement in chemistry and volumetric analysis skills acquisition due to gender is a crucial matter to educationists (Duyilemi, 2015). Yusuf and Adigun (2020) reported that more female secondary school chemistry students had difficulties and misconceptions in comprehending some inorganic concepts than their male counterparts. Okafor (2018) found that female chemistry students taught with integration of ideas method performed more poorly in observing and inferring skills tests than their male peers. Okafor and Yewande (2015) explored that students' gender showed that male students achieved higher scores than females in chemistry. This implies that gender could influence students' achievement in chemistry practical either positively or negatively.

Statement of the Problem

Despite the importance of chemistry in everyday lives and in aspiration of the nation to be scientifically and technologically developed, poor academic achievement has been reported in the senior secondary school base on practical chemistry examinations in South-West Nigeria in general and Ondo state in particular over the years. WAEC Chief Examiners' report on chemistry practical (chemistry 3) between 2019-2023 indicated students' poor achievement in practical chemistry, volumetric analysis inclusive. Also, an analysis from Ondo State Ministry of Education between 2009 and 2020 has shown students poor achievement in chemistry. Effort was made by the federal government to organize programmes and policies in order to improve the academic achievement of science students, chemistry inclusive. More also, researchers such as science educators and chemistry educators have made efforts towards minimizing the unsatisfactory academic achievement of students in chemistry practicals,

volumetric analysis inclusive in Nigeria senior secondary schools. Despite this, students' academic achievement still continues to be low.

Moreover, literature is replete with evidences of chemistry students' lack of skills in carrying out volumetric analysis practicals. Other studies reported that some psychological variables such as empathy and self-regulation could help students in understanding their emotion- drives personality among others. It is unclear whether there is relationship between self-regulation and acquisition of volumetric analysis skills among senior secondary school students in South-West, Nigeria. Thus, the problem of this study put in question form is: What is the relationship between self-regulation and volumetric analysis skills acquisition among senior secondary school students in chemistry in Ondo State?

Research Questions

The following research questions guided the study:

1. What is the relationship between students' self-regulation and volumetric analysis skills acquisition in Ondo State?
2. What is the moderating influence of gender on the relationship between self-regulation and volumetric analysis skills acquisition?

Hypotheses

The following null hypotheses were formulated and tested at 0.05 level of significance.

- HO₁: There is no significant relationship between students' self-regulation and volumetric analysis skills acquisition.
- HO₂: The moderating influence of gender on the relationship between self-regulation and volumetric analysis skills acquisition is not significant.

Methodology

The design of this study was a correlational research design. According to Ezech (2015), correlational research design is a type of study in which a researcher investigates associations between two or more variables for making predictions and it shows the direction and magnitude of the relationship among the variables. The study was carried out in Ondo state. Ondo state consists of six education zones, namely; Akure, Ondo, Owo, Akoko, Okitipupa and Ilaje/Ese-Odo respectively. The population of this study was 6,795 SS 11 chemistry students, which comprises 3,455 males and 3,340 females from 120 public senior secondary schools in Ondo state in 2022/2023 session. The sample size of the study was 462 SS11 (240 males and 222 females) chemistry students. The sample size was selected using multistage sampling procedure. The researcher used two instruments for the study. The instruments titled Volumetric Analysis Skills Rating Scale (VASRS) and Students Emotional Intelligence Questionnaire (SEIQ). The instruments were validated by five research experts. The Cronbach Alpha technique was used to determine the internal consistency of the instruments. For emotional intelligence scale, Cluster A had 0.74, Cluster B had 0.75 and Cluster C had 0.81 with the overall reliability coefficient of 0.77. On the other hand, for Volumetric Analysis Skills Acquisition Rating scale, Kendall's W Coefficient of Concordance was used to conduct inter rater reliability among four experienced chemistry teachers. The overall reliability coefficient among the four raters is 0.76. The direct delivery and retrieved method was used in the administration of the instruments. The data collected was analyzed using inferential statistics, such as regression analysis to answer all the research questions. Process macro analysis was used to test the two null - hypotheses at 0.05 level of significance.

Results

Research Question One:

Table 1: Linear regression analysis of relationship between students' self-regulation and volumetric analysis skills acquisition

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.461 ^a	.213	.211	6.90442

The result in Table 1 shows that the correlation coefficient between students' self-regulation and volumetric analysis skills acquisition was .46. The result indicates that there exists a positive moderate relationship between students' self-regulation and volumetric analysis skills acquisition. The result also revealed that the coefficient of determination (R^2)

associated with the correlation coefficient of .46 was .21. The coefficient of determination (R^2) of .21 indicates that self-regulation accounts for up to 21% of students' volumetric analysis skills acquisition. This is an indication that 79% of the variation in students' volumetric analysis skills acquisition is attributed to other factors other than self-regulation.

Hypothesis One

Table 2: Regression analysis of significant relationship between students' self-regulation and volumetric analysis skills acquisition

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5928.676	1	5928.676	124.366	.000 ^b
	Residual	21928.671	460	47.671		
	Total	27857.347	461			

The result in Table 2 shows that F-ratio of 124.366 with associated exact probability value of 0.000 was obtained. This probability value of 0.000 was compared with 0.05 set as level of significance for testing the hypothesis and it was found to be significant. This is because the probability of 0.000 is less than 0.05.

Thus, the null hypothesis of no significant relationship between students' self-regulation and volumetric analysis skills acquisition was rejected. The researcher therefore, concludes that there is a significant relationship between students' self-regulation and volumetric analysis skills acquisition.

Research Question Two

Table 3: Process macro analysis of the moderating influence of gender on the relationship between self-regulation and volumetric analysis skills acquisition

Gender	N	R	R^2	SE	T	P
Male	240	.638	.408	.199	5.548	.839
Female	222					

The result in Table 3 shows the moderation analysis of the relationship between self-regulation and volumetric analysis skills acquisition as moderated by gender. The result shows a correlation coefficient of .638 which implies a high positive relationship between self-regulation and volumetric analysis skills acquisition as moderated by gender. The coefficient of determination of .41 implies that 41% of the amount of variation in students' volumetric analysis skills acquisition is due to self-regulation as an attribute of emotional intelligence as moderated by gender.

Hypothesis Two

The result of the analysis in Table 3 was also used to test hypothesis two. The result shows that a t-value of 5.548 with an associated p-value of .839 was obtained. Thus, the null hypothesis was accepted since the obtained p value of .839 is greater than .05 level of significance. The researchers therefore, concluded that gender does not significantly moderate the relationship between self regulation and volumetric analysis skills acquisition.

Discussion of the Findings

Relationship between students' self-regulation and volumetric analysis skills acquisition

The findings of the study revealed a significant positive moderate relationship between students' self-regulation and volumetric analysis skills acquisition. The finding may be attributed to the fact that student who can regulate his/her emotion will not allow such emotion to disturb his academic activities, such a student will concentrate in chemistry classroom activities, solve problems, perform practical activities, remember all what has been taught, answer all questions meticulously and will perform better than a student who cannot regulate his emotion which may likely have negative effect on his academic achievement in school. Therefore, students who could regulate their actions are able to perform well in academic activities in the classroom.

The findings is in agreement with the finding of Taherkhani and Moradi (2022) whose study investigated the relationships among self-regulation, emotional intelligence, willingness to communicate, and reading comprehension of Persian foreign language learners and found out that the three independent variables were strong predictors of reading comprehension, with willingness to communicate being the strongest predictor. The finding of Sara et al (2018) was also in agreement with the present study. Their study revealed a significant correlation between self regulation and educational performance among students of Payame Noor University. In agreement with Shah (2020) also confirmed a moderately strong and positive relationship between emotional intelligence and final semester students' academic achievement. Also in agreement was the finding of Bukar, Usman, Musa, Bukar and Machina (2023) whose study revealed a significant relationship between self-regulation and academic performance of students' in Shehu Sule College of Nursing and Midwifery, Damaturu, Yobe State, Nigeria.

In contrast, the study disagreed with the finding of Isti et al (2021) on relationship among academic self-awareness, self-regulation and academic burnout among college students in Universitas Negeri Yogyakarta (UNY), and reported a negative and significant correlation between self-regulation and academic burn out among the students. The rationale for the contrasting results may be due to studies areas and population variation, for instance the current study was carried out in Ondo state, Nigeria, using chemistry students in secondary schools while the reviewed

studies were carried out in abroad and using higher institutions and other subjects such as English, Mathematics, among others.

Moderating influence of gender on the relationship between self-regulation and volumetric analysis skills acquisition

The findings of the study revealed that the moderating influence of gender on the relationship among attributes of emotional intelligence (empathy, self-awareness and self-regulation) and volumetric analysis skills acquisition is not significant. The findings of this research work portray the prevalent social dynamics, where men and women equally struggle for survival in a competitive world. This means that differences gender alone do not decrease students' achievement in relation to their emotional intelligence. The possible reason for this may be as a result of the fact that government at all level are making concerned efforts to improve the educational system to give a level playing ground for both male and female students unlike before when emphasis are placed on male child. Therefore, if male and female students put in effort to study, they can succeed irrespective of their gender.

The study is in agreement with the findings of Adigwe (2015) who reported that gender has no significant influence on the students' emotional intelligence. This present findings is also supports the findings of Bar-On (2006) that reported no significant differences between males and females regarding overall Emotional Intelligence. This findings corroborated the findings by Fakeye (2011) as well as those of Adeyemi and Adeyemi (2013) which revealed that the difference between male and female students' academic achievements in English Language was not significant. The findings also cohere with that of Babalola and Onyiloye (2012) where they found out that gender had no significant influence on students' ability to acquire the tools of language of communication.

However, the findings disagrees with Armstrong and Baron (2005), who pointed that women are more aware of their emotions, demonstrate more empathy relate better interpersonally, and are more socially responsible than men. Similarly, the study disagreed with that of Sutarso (1996) who found from the study on the effect of gender and grade point average (GPA) on emotional intelligence quotient (EQ), a significant multivariate effect of gender on three factors of (EQ) and showed that female students had higher scores on the compassion and self-awareness



factors of emotional intelligence than their male counterparts. The study also disagreed to the findings of Nasar and Nasar (2008) who found out that there is a positive relationship between emotional intelligence and gender.

Conclusion

The following conclusions were made based on the findings of the study;

It was concluded that students' self-regulation skills passively predicted their volumetric analysis skills acquisition. There is positively high relationship between self-regulation and volumetric analysis skills acquisition. Moreover, gender has low influence between self-regulation and volumetric analysis skills acquisition among chemistry students.

Recommendations

Based on the findings of the study, the following recommendations are made:

1. Curriculum experts should develop an affective instructional curriculum that incorporates self-regulation skills with the objective of enhancing personal and career success of students.
2. Government should organize seminars and workshop for teachers to enable them to understand the concept of self-regulation in order to build their own emotions and that of their students.
3. Teachers should encourage gender equality and this should encourage the use of techniques that build self-regulation in both males and females alike.
4. Parents need to pay more attention to the self-regulation status of their children especially the male children.

References

- Abungu, H. E., Wachanga, S. W., & Okere, M. O. (2014). Effect of science process skills teaching approach on secondary school students' self-concept in chemistry in Nyando District, Kenya. *International Journal of Social Science & Interdisciplinary Research*, 3(6), 23 – 55. Retrieved from www.indianresearchjournals.com
- Adesoji, F.A. & Ogini, A.M. (2012). Students' aptitude indices as predictors of learning outcomes in chemistry. *British Journal of Arts and Social Sciences* 8 (11), 174-182.
- Adu-Gyamfi, K., Ampiah, J. G., and Agyei, D. D. (2018). Teachers' problems of teaching of oxidation-reduction reactions in high schools. *European Journal of Education Studies*, 5 (5), 53-71. Retrieved from: www.oapub.org/edu
- Ajewole, G.A (2015). Effects of guided discovery and expository instructional methods on students transfer of learning. *Journal of Science Teachers' Association of Nigeria* 26(2), 59-66. Urevbu, methodology of science teaching in Nigeria. Juland
- Bayim, B.A, Effiong, O.E & Igiri, C.E. (2022). Effects of chemistry practical instructions for teaching and learning science process skill. *International Journal of Research Publications (IJRP.ORG)*, 107(1), 331-345. Retrieved from: www.ijrp.org
- Chernis, C., & Adler, M. (2023). *Promoting emotional intelligence in organizations*. American Society for Training and Development, 23-31.
- Clauder, Y. (2021). Qualitative analysis. Retrieved from: <http://www.wiredchemist.com/chemistry/instructional/laboratory-tutorials/qualitative-analysis>
- Duyilemi, A.N. (2015). The jets programmes and the attitude of girls to education, and gender sensitive classrooms. *Journal of Qualitative Education*, 6(4)1-6.
- Ezeh, D.N. (2015). *Writing research proposal and report without tears: Prior knowledge, exploratron discussion dissatisfaction*. Enugu: Timex Enterprises Publishers Lmt.
- Fasakin, A. O. (2018). *Suggestion for improving candidate achievement in practical chemistry*. In Oluruntegbe R.O. (Ed.). *Strategies for enhancing the teaching and learning of Science, Technology and Mathematics for learners Gain* (11). Ikare: Calvary Way Publishing.
- Goleman, D.(2019). *Five components of emotional intelligence*. Retrieved from: web.sonoma.edu/users/s/swijtkink.
- Igwe, I. O. & Bayim, B.A. (2019). Possession of measurement and observation process skills as determinants of students' achievement in chemistry practicals in senior secondary schools", *Asian Journal of Science and Technology* 10 (07). 9900-9909. Retrieved from: <http://www.journalajst.com>
- Louis, W.S. & Lussac, S.I. (2019). Emotional intelligence and its relationship to academic



- Achievement among secondary school students. *Education and Science Journal of Policy Review and Curriculum* 9(2), 2354 – 2361.
- Obilor, E. I. and Briggs, Y. (2021). Evaluation of the nexus between self-concept, self-awareness, self-motivation and students' academic Achievement in Accounting in senior secondary schools in Rivers State. *International Journal of Innovative Psychology & Social Development* 9 (2):159-169. Retrieved from: www.seahipaj.org
- Oladejo, A. I. (2018). Computer simulation and cognitive achievement in senior secondary school chemistry (*Master's thesis*), Lagos State University.
- Onochie, N. (2018). *10 Problems of science education in Nigeria and possible solution guide in Nigeria*. Retrieved from <https://inforguidenigeria.com/science.education.nigeria>
- Shana, Z. and Abulibdeh, E. S. (2020). Science practical work and its impact on students' Science Achievement. *Journal of Technology and Science Education*, 10 (2), 199-215.
- Tajudeen, C.B. (2015). Enhancing science process skills acquisition in volumetric analysis using co-operative learning strategy. *Journal of Chemistry Panel Workshop* (37, 30 – 34.
- WAEC Chief Examiners Reports (2022- 2023). The west African senior school certificate examinations, Chief Examiners Reports (Nigeria). Lagos.
- WAEC. (2018-2021). *Chief Examiners' Report May/June*. WAEC Press. West African Examination Council (WAEC).
- Wafaa, A., & Yassmen, H. M. (2019). Analytical chemistry/laboratory for first stage of chemistry 2nd semester. Retrieved from : <https://www.google.com/url?sa=t&source=web&rct=j&url=http://scbaghdad.edu.iq/files/lectures/chem/Analytical%2520Chemistry.pdf&ved=2ahUKEwiSsN6->