



LEARNERS' COMPETENCIES IN SCIENCE: BASIS FOR INTERVENTION PROGRAM

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ABSTRACT

The descriptive study was conducted to find out the mastery of competencies in science of grade 9 learners as assessed by science teachers in the different public secondary and integrated schools in the fifth congressional district of Iloilo for the school year 2022-2023 as the basis for intervention program. A researcher-constructed questionnaire was used to gather the data from grade 9 science teachers from different integrated and secondary schools in the fifth district of Iloilo. Mean, Cronbach's alpha, and ranking were used as statistical tools. Results showed that, as a whole in lowland school and in highland school, no competencies were reported as not mastered. However, students in island schools had not mastered competencies related to understanding carbon atom structure and bond formation. Meanwhile, students in small schools had not mastered competencies in understanding the quantum mechanical model, recognizing compounds based on properties, and inferring lifestyle effects on respiratory and circulatory systems. It is recommended to use the intervention program to address issues related to mastery of learning competencies in Science 9.

Keywords: *Learning Competencies, Science, Intervention Program*

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INTRODUCTION

Science education strives to cultivate scientific literacy among students, equipping them to be knowledgeable and engaged citizens capable of making informed decisions about the practical implications of scientific advancements in different areas of society, environment, and health. Science curriculum equips learners with vital skills for the professional world and knowledge-driven society.

Teachers are confronted with persistent challenges in preparing learners for successful careers on a global scale and functional literacy in science. One of the prevalent issues in science education is students' difficulty in mastering content knowledge. This challenge emphasizes the importance of teachers providing students with the fundamental skills necessary for global competitiveness and functional literacy in science (Santos, 2021).

The Enhanced Basic Education Curriculum (EBEC), mandated by RA 10533, adopts the Spiral Progression Approach, focusing on mastering and retaining concepts and skills throughout the grade levels in Basic Education. This approach emphasizes the mastery level of cognitive competencies, including the understanding of facts necessary for teaching and learning science in the new Spiral Progression Approach (Ely, 2021). Mastery learning, an educational approach, posits that students should attain mastery of prerequisite knowledge and skills before progressing to more complex material (Hinton, 2021).

Internationally, the Philippines falls behind in science education quality (Millanes et al., 2017; Rogayan Jr. et al., 2019). Filipino students' low scores on PISA and TIMSS tests can be attributed to their poor performance. The Philippines needs to enhance science education

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since its average scientific literacy score is 357, which is much lower than the OECD average of 489 points (Palines, 2021).

Filipino graduates are anticipated to demonstrate proficiency in fundamental competencies, possess emotional maturity, exhibit social awareness, be proactive and engaged in public and civic affairs, be ready for the workforce or further education, be legally eligible for employment, and be competitive on a global scale (Obligar, 2020).

To this, the researcher has observed that in her school, learners have a hard time mastering the learning competencies. She posits that many challenges were encountered by her learners, resulting in their inefficiency in science. As such, conducting studies that may close the gap between the ideal learning competency achievable within a grade level and the current competence of learners is very important. This may ultimately lead to better educational outcomes for all students.

MATERIALS AND METHODS

Research Methodology

This chapter presents the research design, respondents of the study, sampling design, research instrument, validity and reliability of the instrument, data gathering procedure, data analysis and statistical tools used to analyze the data.

Research Method

The research employed both quantitative and qualitative research design.

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Quantitative research is an approach to inquiry that seeks to explain social phenomena by collecting and analyzing numerical data. This type of research relies on mathematically based methods, such as statistics, to analyze the data and draw conclusions. Quantitative research is often used to test hypotheses, identify patterns, and quantify relationships between variables (Aliaga & Gunderson, 2002).

Research Design

To determine the mastery of competencies in Science 9, the researcher utilized a descriptive research design. According to David (2002), the descriptive type of research seeks to answer questions related to who, what, when, where, and how. It aims to describe a situation or a given state of affairs in terms of specified aspects or factors. The purpose of the study was to identify the competencies of grade 9 learners in science as assessed by science teachers, classifying them as not mastered, moderately mastered, or mastered. This classification was done based on the type of school, kind of school, and size of school.

Participants of the Study

The respondents of the study were the 25 science teachers teaching grade 9 from different secondary and integrated schools in the Fifth Congressional District of Iloilo during school year 2022-2023. They were selected using the purposive sampling technique.

Sampling Design

The design utilized in the study was the purposive sampling technique which was employed in the data gathering.

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According to Nikolopoulou (2022) purposive sampling is a category of non-probability sampling procedures in which units are chosen based on traits that the researcher requires in the sample. This sampling approach relies on the researcher's judgment to identify and pick individuals, cases, or events that will yield the most information to accomplish the study's goals.

Research Instrument

The researcher prepared a researcher-made questionnaire in order to determine the mastery of competencies of grade 9 learners.

The data gathering instrument employed was the Science 9 competencies survey-questionnaire. It is composed of two parts; the first part is the respondent's personal information and the second half tested the students' mastery of Science 9 competencies which include the kind of school, kind of school, and size of the school. The survey tool is a questionnaire created by the researcher. The competencies used were from most essential learning competencies in Science 9.

Validity of the Research Instrument

The researcher-made questionnaire was presented and submitted to the thesis adviser for comments, suggestions, and approval of the initial draft.

After the approval of the draft by the adviser, the questionnaire was submitted to a jury of experts for face and content validation using the Eight-Point Criteria by Goods and Scates (2006) to ascertain the appropriateness of the items to the problem.

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The suggestions and recommendations made on the questionnaire by the panel of jurors were then integrated and strictly followed in the final draft.

Thereafter, the questionnaire was reproduced for reliability testing after it had been finalized.

Reliability of the Research Instrument

After the questionnaire had been found valid, pilot testing was conducted to thirty (30) science teachers teaching grade 9 learners from different public secondary and integrated schools in the First Congressional District of Iloilo.

The data collected for the research underwent statistical analysis using the SPSS software, and the reliability of the data was evaluated using Cronbach's Alpha (Fraenkel & Wallen, 2007).

With the approval of the thesis adviser and validators, the research -made survey questionnaire was administered to 30 science teachers teaching grade 9 from different public secondary and integrated schools in the First Congressional District of Iloilo. The purpose of the pilot testing was to determine the consistency and homogeneity of the test instruments. If the computed reliability is 0.80 or more but not more than 1, the instrument is reliable according to Smith (2007; in Con-el, 2015).

The reliability test, conducted using SPSS version 25.0 with a result of Cronbach's Alpha coefficient of 0.871 or 87%.

After the questionnaire had been found reliable, it was administered to the 25 grade 9 science teachers in the different secondary and integrated schools in the Fifth Congressional District of Iloilo.

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Data Gathering Procedures

After determining the validity and reliability, the questionnaire was reproduced according to the number of respondents of the study. Permit to conduct the research was also secured from the Graduate School office of the PHINMA University of Iloilo and the Schools Division of Iloilo.

The researcher personally distributed the questionnaire to the respondents, and others were through online platform such as google form. The researcher retrieved the questionnaire after the respondents had duly accomplished them.

Data Analyses

After the retrieval of the questionnaire, the data was organized and tabulated. The mean for each item was computed and converted into a descriptive rating.

The gathered data in the study underwent both descriptive and inferential statistical analysis.

The researcher used mean for descriptive and inferential statistics. All statistical computations used the SPSS software.

Scale of Scores	Descriptive
2.34 - 3.00	Mastered
1.68 - 2.33	Moderately Mastered
1.00 - 1.67	Not Mastered

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RESULTS AND DISCUSSIONS

The main purpose of this study was to find out the mastery of competencies in science of grade 9 learners as assessed by science teachers in the different public secondary and integrated schools in the fifth congressional district of Iloilo for the school year 2022-2023 as the basis for intervention program.

The study employed a descriptive questionnaire research design to assess the competencies of grade 9 learners in science across different public secondary and integrated schools in the Fifth Congressional District of Iloilo. The 25 respondents, comprised of teachers, were classified according to kind of school, type of school, and size of school.

As a whole, learners have demonstrated the highest mastery in understanding the impact of lifestyle on respiratory and circulatory systems, followed by species extinction and the classes of organic compounds, while showing a moderate level of mastery in explaining non-Mendelian inheritance, the quantum mechanical model of the atom, and ion formation. No competencies reported as not mastered.

In the lowland school, students have moderately mastered competencies related to non-Mendelian inheritance, ion formation, carbon atom structure's bond formation impact, and using the mole concept for chemical mass expression, with no competencies reported as not mastered. In the highland school, students have moderately mastered competencies such as differentiating basic features of photosynthesis and respiration, explaining the collaboration between respiratory and circulatory systems, describing the quantum mechanical model of the atom, recognizing compound types, and determining compound percentage composition,

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with no competencies reported as not mastered. In the island school, students have moderately mastered competencies including recognizing the general classes and uses of organic compounds, determining compound percentage composition, and explaining non-Mendelian inheritance patterns, but they have not mastered explaining how the structure of the carbon atom affects bond formation.

In both national high school and integrated schools, learners have moderately mastered competencies such as explaining the impact of carbon atom structure on bond formation, using the mole concept for mass expression, and determining compound percentage composition. Additionally, in integrated schools, learners have also shown moderate mastery in understanding how the respiratory and circulatory systems collaborate, explaining non-Mendelian inheritance patterns, relating species extinction to environmental changes, and recognizing compound types based on properties.

In large schools, students have mastered competencies such as relating species extinction to the failure of populations of organism to adapt to abrupt changes in the environment, inferring how one's lifestyle can affect the functioning of respiratory and circulatory system, explaining how the respiratory and circulatory systems work together to transport nutrients, gases, and other molecules to and from the different parts of the body, and explain how the quantum mechanical model of the atom describes the energies and positions of the electrons. While in medium schools, mastered competencies are inferring how one's lifestyle can affect the functioning of respiratory and circulatory system, and recognizing the general classes and uses of organic compounds, while the moderately mastered

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competencies are explaining how the respiratory and circulatory systems work together to transport nutrients, gases, and other molecules to and from the different parts of the body and recognizing different types of compounds (ionic or covalent) based on their properties such as melting point, hardness, polarity, and electrical and thermal conductivity. In small schools, moderately mastered competencies are relating species extinction to the failure of populations of organism to adapt to abrupt changes in the environment, explaining the different patterns of non-mendelian inheritance, differentiating basic features and importance of photosynthesis and respiration, and recognizing the general classes and uses of organic compounds while not mastered competencies are explaining how the quantum Mechanical Model of the atom describes the energies and positions of the electrons, recognizing different types of compounds (ionic or covalent) based on their properties such as melting points, hardness, polarity, and electrical and thermal conductivity, and inferring how one's lifestyle can affect the functioning of respiratory and circulatory system.

To address the moderate understanding of complex inheritance patterns, teachers can employ inquiry-based and hands-on learning activities, providing further explanations, examples, and practical applications. Improving resources, teacher training, and hands-on learning opportunities can enhance science education in island schools. Implementing engaging teaching methods and targeted support can enhance understanding and mastery of scientific concepts in integrated schools. Continuous monitoring, reinforcement, and revisiting of challenging topics are essential for sustaining and improving mastery levels. Employing

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analogies and interactive teaching methods can help clarify abstract concepts like the quantum mechanical model of the atom, enhancing student engagement and comprehension.

Conclusion

Based on the findings, the following conclusions were made:

The analysis of learners' competencies across different schools' highlights both areas of strength and areas for improvement in science education. Overall, learners have demonstrated the highest mastery in understanding the impact of lifestyle on bodily systems, indicating a solid foundation in biological concepts. However, there is room for improvement in areas such as understanding the quantum mechanical model of the atom and explaining how the structure of the carbon atom affects bond formation, where mastery levels were moderate across schools. These findings suggest a need for targeted interventions and instructional strategies to enhance understanding in these challenging areas.

In the lowland, highland, and island schools, students have shown varying levels of mastery across different competencies. While students in the lowland school have demonstrated moderate mastery in areas like non-Mendelian inheritance and chemical mass expression, students in the highland school have shown similar levels of mastery in topics like photosynthesis and compound percentage composition. However, students in the island school have struggled with understanding the impact of carbon atom structure on bond formation. These findings highlight the importance of tailoring interventions to the specific needs of learners in each school setting.

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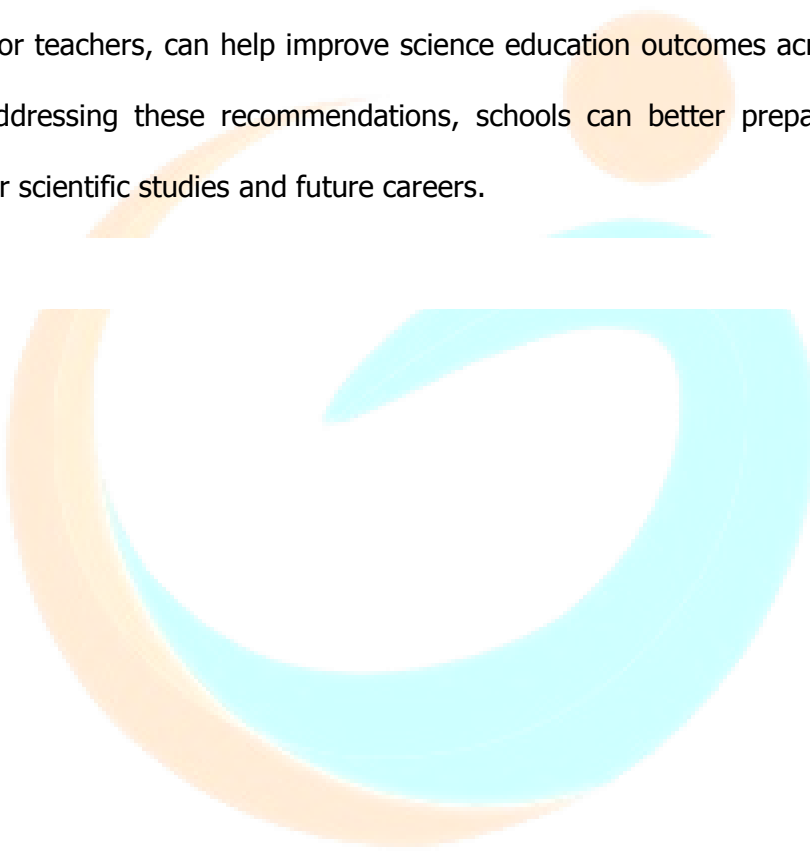
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To address the gaps in mastery and further enhance understanding of complex scientific concepts, teachers can implement a variety of instructional strategies. Inquiry-based and hands-on learning activities can provide students with opportunities to explore scientific concepts in depth, while analogies and interactive teaching methods can help clarify abstract ideas. Additionally, providing additional support and resources, as well as ongoing professional development for teachers, can help improve science education outcomes across all types of schools. By addressing these recommendations, schools can better prepare learners for success in their scientific studies and future careers.



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References

Acera (2022). The Use of Strategic Intervention Materials in Science (SIM-S) in Improving the Academic Performance of the Learners. Retrieved February 5, 2023 from <https://www.ijassjournal.com>.

Aliaga & Gunderson (2002). A Quantitative Research Methods: A Synopsis Approach. Retrieved February 10, 2023 from https://www.researchgate.net/publication/320346875_Quantitative_Research_Methods_A_Synopsis_Approach.

Azevedo, M.M. & Duarte, S. (2018). Continuous Enhancement of Science Teachers' Knowledge and Skills through Scientific Lecturing. *Frontiers in Public Health*, 6. <https://doi.org/10.3389/fpubh.2018.00041>.

Ballesteros, J. (2016). Localization and Contextualization of Science Activities in Enhancing Learners' Performance. www.academia.edu. Retrieved from https://www.academia.edu/26424467/Localization_and_Contextualization_of_Science_Activities_in_Enhancing_Learners_Performance.

Bouchée, T., de Putter-Smits, L., Thurlings, M., & Pepin, B. (2021). Towards a better understanding of conceptual difficulties in introductory quantum physics courses. *Studies in Science Education*, 58(2). <https://doi.org/10.1080/03057267.2021.1963579>.

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Božak, S., Hegediš, P.J., & Hus, V. (2023). Ecological Awareness among 3rd Grade Students of Primary School. *Creative Education*, 14(02). Retrieved from <https://doi.org/10.4236/ce.2023.142024>.

Cambridge Dictionary (2022). Meaning of Basis. Retrieved February 3, 2023 from <https://dictionary.cambridge.org>.

Center for Global Education (2022). Why We Need Competency-Based Education. Retrieved February 3, 2023 from <https://asiasociety.org>.

Cobb-Clark, D.A. & Jha, N. (2016). Educational Achievement and the Allocation of School Resources. *Australian Economic Review*, 49(3). <https://doi.org/10.1111/1467-8462.12159>.

Collins Dictionary (2022). Meaning of Learner. Retrieved February 3, 2023 from <https://www.collinsdictionary.com>.

Creswell, J.W. (2012). Educational research: planning, conducting, evaluating, quantitative and qualitative research (Fourth Edition). United State of America: Pearson Education Inc. Retrieved February 10, 2023 from epo.stkip-pgrisumbar.ac.id/id/eprint/6980/4/REFERENCES.pdf.

De Jesus (2019). Improving the Least Mastered Competencies in Science 9 Using "Pump It Up!" Electronic Strategic Intervention Materia. Retrieved February 4, 2023 from <https://www.dlsu.edu.ph/>.

Delos Santos et al. (2021). Least Mastered Competencies in Biology: Basis for Instructional Intervention. Retrieved on February 3, 2023.

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DepEd Cordillera (2021). Meaning of Least Mastered Competencies. Retrieved February 7,

2023 from <https://www.depedcar.ph>.

Dimaiwat (2022). Intervention Material for Least Learned Competencies in Selected Topics in Physics 10. Retrieved February 6, 2023 from <https://ijrp.org/paper->.

Ely (2019). Mastery Learning of Chemistry Competencies through the Spiral Progression Approach in Curriculum. Retrieved February 7, 2023 from <https://issuu.com/tjprc/docs/2.ijesroct20192>.

Etienne, T., Renzaho, A., & Mujawimana, E. (2020). EFFECTIVENESS OF LOCALLY MADE INSTRUCTIONAL MATERIALS ON STUDENTS' ACADEMIC PERFORMANCE AND RETENTION IN..

ResearchGate.https://www.researchgate.net/publication/341670675_EFFECTIVENESS_OF_LOCALLY_MADE_INSTRUCTIONAL_MATERIALS_ON_STUDENTS'_ACADEMIC_PERFORMANCE_AND_RETENTION_IN_SCIENCE_EDUCATION_IN_EASTERN_PROVINCE_OF_RWANDA/citations.

Eviota (2022). Least Learned Competencies in Grade 9 Biology: Basis for Development of Strategic Intervention Material (SIM). Retrieved February 8, 2023 from <https://myjms.mohe.gov>.

Gapasin (2019). Improving the Science Competency of Grade 5 Learners in Matter Through Localized Computer-Based Instructional Materials. Retrieved February 4, 2023 from <https://depedro1.com/>.

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Gregg, J.J., Rodriguez, R.L., Mehta, P.S., Kramer, B.J., & Gould, C.E. (2022). Enhancing specialty training in geropsychology competencies: An evaluation of a VA Geriatric Scholars Program advanced topics workshop. *Gerontology & Geriatrics Education*, 44(3). <https://doi.org/10.1080/02701960.2022.2069764>.

Hammond, K., Thorogood, J., Jenkins, A., & Faaiuolo, D. (2015). A friendly destination: Normalizing first-year science student help-seeking through an academic literacy Targeted Learning Session. A Practice Report. *The International Journal of the First Year in Higher Education*, 6(1). Retrieved from <https://doi.org/10.5204/intjfyhe.v6i1.276>.

Hermosilla, P., Muñoz-La Rivera, F., Ateaga, N., & Gallardo, E. (2021). Strategy for the Evaluation and Monitoring of Competencies in Engineering Programs to Improve Students' Learning and Quality of Education. *Sustainability*, 13(21), 11721. Retrieved from <https://doi.org/10.3390/su132111721>.

Leasa, M., Batlolona, J.R., & Jamaludin (2023). Islands Education Studies and Challenges in Learning Science. *Jurnal Penelitian Dan Pengembangan Pendidikan*, 7(1), 79–87. <https://doi.org/10.23887/jppp.v7i1.55810>.

Lualhati, G.P., Catibog, F.J.A., Holgado, R.A.L., & Liwanag, J.M.A. (2018). Discovering Ecological Awareness of Filipino Education Students. *International Journal of Applied Science*, 1(2). Retrieved from <https://doi.org/10.30560/ijas.v1n2p37>.

Life Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini, 3(2), 387. <https://doi.org/10.31004/obsesi.v3i2.201>.

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Magno (2014). Strategies in Teaching the least Mastered Skills. Retrieve February 7, 2023

from <https://www.slideshare.net>.

Marlina, R., Miranda, D., Marmawi, M., & Maulidi, A. (2019, July 12). Effect of Students' Self-Directed Learning to Self-Care in Organs of Human Body Lesson on Daily.

Merriam-Webster (2022) Meaning of Science. Retrieved from <https://www.merriam-webster.com>.

Mcleod, S. (2019). Constructivism as a theory for teaching and learning. Retrieved February 3, 2023 from <https://www.simplypsychology.org>.

Most essential learning competencies (2020). Retrieved February 8, 2023 from https://www.gurotayo.com/2020/05/most-essential-learning-competencies-in_74.html.

Mwene Mbeja, T.M. (2020). Biotechnology and Educational Awareness as Ecological Means to Handle Organic Residues. *Current Trends on Biotechnology & Microbiology: Open Access Publishers*, 1(4). <https://doi.org/10.32474/ctbm.2020.01.000120>.

Romero et al. (2019). Analysis of Least Mastered Skills in Science 5: Basis for an Intervention Program. Retrieved February 7, 2023 from <https://ojs.aaresearchindex.com/>.

Rosal et al. (2022). Improving the Least Mastered Competencies of Grade 11 Students in General Chemistry using Electronic Strategic Intervention Material (E-SIM). Retrieved February 8, 2023 from <https://kimika.pfcs.org.ph/>.

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Salviejo (2014). Strategic Intervention Material-Based Instruction, Learning Approach and Students' Performance in Chemistry. Retrieved February 8, 2023 from <https://ijlter.net/index.php/ijlter/article/view/1216>.

Suggested Interventions in Improving The Least-Learned Skills in Science VI (2020). Retrieved February 9, 2023 from <https://www.scribd.com/presentation/461715695/>.

The Enhanced Basic Education of 2013 (K-12) (2016). Retrieved February 10, 2023, from <https://www.slideshare.net/RizzaLynnLabastida/the-enhanced-basic-education-act-of-2013-k12>.

Oss, S., & Rosi, T. (2015). A Bit of Quantum Mechanics. *The Physics Teacher*, 53(4). Retrieved from <https://doi.org/10.1119/1.4914565>.

Rupley, W.H. & Longnion, B.L. (2016). Mastery learning: A viable alternative?

Sahiba, K. (2022). INTERACTIVE METHODS OF TEACHING GEOGRAPHICAL SCIENCES. *European International Journal of Multidisciplinary Research and Management Studies*, 02(10). Retrieved from <https://doi.org/10.55640/eijmrms-02-10-32>.

Sharma, L.R., Sharma, R.A., & Raghuwaiya, K. (2019). School-Based Teacher Development, Promise and Potential for Ongoing Professional Learning. *Encyclopedia of Teacher Education*, 1–6. https://doi.org/10.1007/978-981-13-1179-6_251-1.

Vieira, H. & Morais, C. (2022). Musical Analogies to Teach Middle School Students Topics of the Quantum Model of the Atom. *Journal of Chemical Education*, 99(8). Retrieved from <https://doi.org/10.1021/acs.jchemed.2c00289>.

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Yli-Panula, E., Jeronen, E., Lemmetty, P., & Pauna, A. (2018). Teaching Methods in Biology

Promoting Biodiversity Education. Sustainability, 10(10), 3812. Retrieved from

<https://doi.org/10.3390/su10103812>.



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