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INNOVATIVE SCIENCE LEARNING STRATEGIES: COMBINING AUDITORY INTELLECTUALLY REPETITION (AIR) AND WINDOW SHOPPING METHODS

Rofi Wafa Fadillah [*1)], Riandi [2)], Irma Rahma Suwarma [3)]
[1,2,3)]Department of Science Education, Faculty of Mathematics and Natural Sciences Education, Universitas Pendidikan Indonesia, West Java, Indonesia.
[*]*Corresponding author*
e-mail: rofiwafa@upi.edu [*1)], rian@upi.edu [2)], irma.rs@upi.edu [3)]

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ABSTRACT

In the current era of globalisation and rapid technological advancement, the importance of science education cannot be overstated. However, traditional methods of teaching sciences frequently suffer from problems like poor student performance and poorly understood concepts. This study explores the combination of two innovative learning methods: Window Shopping and Auditory Intellectual Repetition (AIR). The AIR method encourages auditory and intellectual learning through questioning, while the Window Shopping method promotes interactive and exploratory learning. Through a comprehensive approach, this study examines the potential benefits and effectiveness of integrating this method into science education. All of them indicate that using AIR and Window Shopping can create a dynamic and multifaceted learning environment that increases student engagement, comprehension, and retention of academic concepts. It has been proven that an integrated approach promotes teamwork, deeper understanding of scientific subjects, and active engagement, all of which lead to better learning results.

Keywords: Auditory Intellectually Repetition (AIR); window shopping; method; students motivation

INTRODUCTION

In an age of globalization and rapid technological advancement, scientific education is becoming increasingly vital in preparing the next generation to confront future challenges. However, science learning faces a lot of challenges such as low student engagement (Sinatra et al., 2015) and the lack of mastering the concept (Adu-Gyamfi & Kenneth, 2013; Ynag & Li-Hsuan, 2010). Therefore, the needs of new innovation in learning must be developed to improve the quality of science education.

Auditory Intellectually Repetition (AIR) is learning method that have great potential to increase students' engagement and understanding (Febriani, N. N. et al., 2023; Kamsurya, R., & Saputri, V., 2020; Asih, N. M. & Nilakusmawati, D. P. E., 2017). Likewise with the Window-Shopping method, several researchers have proven that the Window Shopping methos can increase learning outcomes (Effendi, M. Y., & Widiyatmoko, W., 2023; Sudarmiani, N., & Santoso, A. B., 2023; Sumiyati, S., 2020; Pratiwi, R. et al., 2022). The Auditory Intellectually Repetition (AIR) method emphasizes intellectual repetition through hearing, which can help students remember and understand science concepts more effectively (Asari, H., & Kristiana, A. ., 2021; Mustofa, S. B. et al., 2020; Effendi, M. Y., & Widiyatmoko, W., 2023). Meanwhile Window Shopping can help/invite students to explore any kind of information dan science concept in interactive way and interesting for students, so it can help students to improve their

learning outcome (Effendi, M. Y., & Widiyatmoko, W., 2023; Musa, L. A. D., et al., 2022). According to Shoimin (2016), the acronym for the AIR learning model is Auditory, Intellectual, and Repetition. One learning model that emphasizes the need for learning to make use of all the sensory instruments at students' disposal in the AIR learning model. By utilizing all five sense, student will be better able to grasp the topics being taught. Auditory Intellectually Repetition (AIR) emphasizes on students' learning activities, by actively building their own knowledge individually or in groups by using three learning elements (Febriana, B. W., & Arjek, T. H., 2022). The three learning elements are Auditory, Intellectually, and Repetition which are carried out individually in the form of assignments to review the learning that has been done. The AIR model places more emphasis on practical exercises where students and teachers engage in a reciprocal learning process to acquire knowledge, comprehension, and other skills and behaviours such as attitudes and new teaching values that take an individual approach to teaching and individual learning (Tiaraningrum, Y., et al 2023; Andini, V. P., 2022). As. Result, the teaching implications need to be comprehensive, emphasizing cooperation and sympathy in interaction between students and teachers. Window Shopping is a service strategy based on group work by carrying out activities such as shopping around looking at the work of other groups to gain insight. The work can be attached to the wall or on the window. This visiting activity is not just about looking around, but students are asked to observe and record the results of other groups' work (Istianingsih, 2018). In the Window-Shopping method, students are divided into two main roles, namely presenter and visitor.

Theoretically, the AIR method is based on the theory of repetition which emphasizes the importance of repetition in the learning process to strengthen memory and understanding (Febriana, B W., & Arjek, T. H., 2020; Taher, R., & Amini, R., 2023). While the Window-Shopping method is based on the theory of constructivism which emphasizes the importance of exploration and interaction in learning (Athiyah, I., 2022; Ulum, B., & Madjidi, A. H., 2022). Combining both of these methods is likely to improve student study experiences and create a more comprehensive learning experience. Previous studies only shown the efficacy of each strategy in enhancing student engagement and learning outcomes. However, no studies have been conducted to examine the combination of both of these methods. As a result, this study aims to fill that gap by examining how the combination of AIR and Window-Shopping methods may be employed in science education.

METHODS

This study used literature review to provide a critical analysis in examine the combination of the Auditory Intellectually Repetition (AIR) method and Window-Shopping method. Scientific articles, books, and online links are among the library's resources. Books with ISBNs are indexed by Scopus and Google Scholar, along with library resources.

RESULT AND DISCUSSION

After conducting a literature review of various relevant studies, there are several key findings that can be concluded

regarding the effectiveness of the combination of Auditory Intellectually Repetition (AIR) and Window-Shopping methods in science learning.

Auditory Intellectually Repetition (AIR) Method

Auditory Intellectually Repetition (AIR) is a learning model that consist of three components: auditory (hearing, speaking, and arguing), intellectual (investigating, reasoning, finding, creating, problem-solving, and application), and repetition (Rahayuningsih, S., 2017). The term "auditory" refers to students' active participation in learning, which includes listening, paying attention, practicing public speaking, explaining personal viewpoints, and responding to feedback (Bonatua, D. S. et al., 2021). Intellectually, active learning requires students to use their thinking abilities (minds-on). Students' activeness in the learning process should be demonstrated through concentration of thought and practice using reason, developing, identifying, finding, creating, constructing, solving problems, and applying (Simbolon, P., & Simbolon, N., 2022).

Auditory learning occurs when people speak, listen, present, argue, express their viewpoints, and respond positively. Teachers should be able to encourage students to optimise their hearing senses during the learning process so that there is a connection between the ear and the brain in efficiently analysing all information collected (Asih, N. M., & Nilakusmawati, D .P E., 2017). Intellectually related learning should be linked to an experience, giving the relationship meaning and identifying the purpose of the experience in the learning process (Kamsurya, R., & Saputri, V., 2020). Intellectuals in the learning process can be trained if teachers invite students to participate directly in problem-solving, undertake experience-based analysis, and provide formulations for difficulties encountered. Repetition is required in the learning process to ensure that previously studied concepts are properly understood and can be applied to other concepts.

According to Khadija & Sukmawati (in Ulva & Resti Ayu Suri, 2019), the AIR learning model's steps are as follows: Students are divided into groups of four to five, the teacher explains the material they have studied and they listen intently (auditory), the teacher guides the discussion of the material they have studied and records the results for each group to present in front of the class (auditory), students are trained to think critically and solve problems pertaining to intellectually challenging material through reasoning and problem-solving, and after the discussion is over, students are given a quiz to reinforce the material they have learned (repeat).

Window-Shopping Method

A method of instruction called "window shopping" is centred on group projects where participants go around and see other groups' completed work to gain insight (Kamsurya, R., & Saputri, V., 2020). Students have the chace to actively participate in their studies and develop an emotion bond with the material through the window shopping approach. The idea behind window shopping approach of instruction is to allow students to investigate the material as though they were perusing displays in stores, but learning setting (Effendi, M. Y., & Widiyatmoko, W., 2023; Tremonte, C. M., 2011) .

Students wander around and observe the work of other groups as part of this learning paradigm. But just because students come doesn't mean they don't learn anything. Visitors will get knowledge. If I were to add the phrase "science shopping" to the learning model myself. Under the Shopping Science learning paradigm, students document their work outcomes for their group to discuss in addition to examining the work of other groups. Students in this learning style have roles that they are assigned. Students are in charge of securing the platform where projects and materials are being shown. Subsequently, the instructor allows the other group members to go around and engage in discussion, gather information, or observe other groups (Sudarmiani, N., & Santoso, A. B., 2023). This adds variety to the teaching and learning process, making it more enjoyable.

Combining Auditory Intellectually Repetition (AIR) and Window Shopping Methods

In scientific education, the integration of Window Shopping and Auditory Intellectual Repetition (AIR) techniques seeks to capitalise on the advantages of each strategy to provide students with a thorough and captivating learning experience. By improving students' auditory, intellectual, and social learning experiences, this integrated method aims to foster active participation and a deeper comprehension of scientific subjects.

The combination of AIR and Window-Shopping method can create a dynamic and multifaceted learning environment. Here's are some strategies to integrate the method:

1. Initial Engagement (Auditory and Intellectual):
    - Start by providing an aural presentation as an introduction to the subject, in which the instructor goes over important ideas while the students pay close attention.
    - Continue with thought-provoking exercises like group discussions and problem-solving assignments to help them comprehend the subject matter more thoroughly.
2. Exploration and Interaction (Window Shopping):
    - Plan a "window shopping" event where students can peruse each other's creations and exhibit their own work. Digital presentations, models, and posters may be used for this.
    - Students should be encouraged to make notes on intriguing concepts or methods they come across, talk about their findings, and pose questions.
3. Reinforcement and Reflection (Auditory and Repetition):
    - Observations and ideas gathered should be discussed in class after the window shopping experience.
    - By assigning homework or having students present their findings to the class, you can use repetition to help students understand the material.
4. Continous Improvement
    - Include these two approaches together on a

regular basis in the curriculum to keep students' attention and reinforce what they've learned.

- Give students constructive criticism and encouragement to improve their comprehension and application of scientific ideas.

The integration of AIR and Window Shopping methods offers several benefits:

- Increased Engagement: Pupils participate actively in interactive and listening exercises, which keeps them inspired and involved.
- Deeper grasp: A deeper grasp of scientific concepts is promoted by the mix of interactive exploration, intellectual difficulties, and auditory learning.
- Collaboration and Communication: Through group projects and interactions with peers, students acquire critical skills in collaboration and communication.
- Holistic Learning Experience: By accommodating various learning needs and styles, the multifaceted approach offers a more thorough learning experience.

All things considered, the integration of AIR and Window Shopping techniques produces an engaging and productive learning environment that improves students' comprehension and recall of scientific ideas while cultivating critical abilities for their academic and personal development.

CONCLUSION

Combining Window Shopping and Auditory Intellectually Repetition (AIR) can address issues in science education. This approach merges interactive exploration with auditory and repetitive learning, creating an engaging and productive environment. Literature highlights benefit such as increased students engagement, better understanding of concept, improved teamwork and communication skills, and enhanced academic performance. This method not only boost academic achievement but also equips students with essential skill for growth. Future research should empirically validate these findings and explore implementation in diverse educational settings.

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