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Adopting Model United Nations (MUN) in Discussion Method in Learning Environmental Pollution: D-MUN Method

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Abstract.

In the classroom, the discussion method has objectives to train the students with several skills, such as assertiveness when arguing with opposing ideas, the ability to brainstorm, groupthink, and improved communication with their peers. However, implementing the discussion method requires more preparation to run well. Improper organization of class discussion leads to no clear point or lesson learned that is explicitly stated after class discussion. Students' participation becomes difficult to monitor whether all students contribute during the class discussion. They only talk when being pointed out by the teacher, and they will not speak if they do not have something to say. Science teachers' experiences in conducting discussion methods were gathered before the study. Using the results from the preliminary survey, a conceptual framework of the discussion method by adapting Model United Nations (MUN), thus the so-called D-MUN METHOD, in learning about environmental pollution was developed. By adapting the structure of the discussion used in MUN to the classroom while learning science topics, the discussion in class becomes more engaging and increases students' active participation and clarity of key concepts. The issues that become the topic of discussion should be relevant to the science content and include ill-structured problems. Therefore, the D-MUN METHOD will encourage students to present their solutions, which depends on their point of view (assigned as a specific country/region representative), and, in the end, come together to produce the best resolution.

Keywords: Model United Nations (MUN), discussion method, environmental pollution, D-MUN method

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1. INTRODUCTION

Discussion is a group interaction in which people come together to address a shared topic of interest, including things that need to be recognized, respected, or resolved [1–3]. When applied in the classrooms, this method produces several educational benefits [4]. First, students can reconcile opposing arguments. During the dynamics of the conversation, reasoning occurs when there is a grounded defense utilizing solid arguments [5, 6]. As a result, this setting promotes students' improved reasoning and problem-solving skills [2]. Second, the scaffolding provided in the discussion method develops the skill of thinking on one's own two feet. Without it, students likely believe that their insights, analyses, and conclusions are unworthy of discussion since they have not heard those thoughts addressed by anybody in the class [7]. Third, students learn how to decide on a well-informed position to achieve consensus since exchanging different perspectives throughout the conversation allows for a greater comprehension of the topic and the relevant knowledge [8]. Fourth, students can overcome the fear of sharing opinions by building effective communication with peers [9]. Because this method argues that student learning varies depending on the degree of learning ownership, discussion-based classes propose collective and individual benefits [10].

Despite the importance placed on the discussion method, it is not yet practiced as it should be. Transmissive paradigms of science education persist, with privileged learning leading to socially irrelevant information [2, 6]. The intricacy of the topics in discourse and the difficulty in managing class discussion can hinder the implementation in the classroom [11]. The nature of group discussion makes it time-consuming, especially when it is irrelevant to the science content. As a result, it is important to address the problems mentioned earlier while also covering current learning strategies in which students are required to build social cognitive growth through instructional activities to acquire knowledge [4].

Model United Nations (MUN) is a simulated academic version of the United Nations. An individual's major purpose in a MUN session is to understand contemporary topics and diplomacy [12]. Students learn through the experience of actively participating in scenarios that require them to act as representatives and/or delegations of United Nations member countries [13]. MUN facilitates student learning in three stages: optimizing individual growth in an open forum, promoting academic persuasion skills through working papers, and refining real concern through draft resolution [13, 14].

Moreover, MUN enhances academic or social dedication and engagement and significantly improves student intellectual skills, such as critical thinking, teamwork, problem-solving, effective communication, personal growth, and knowledge application [15, 16]. MUN is characterized by raising controversial topics that have the most urgency to be solved because they happen in the global scope. Environmental issues have become progressively difficult to understand and evaluate, however environmental issues are generally conveyed in oversimplified facts rather than articulated by good and valid information [17, 18]. As a result, fair consideration of environmental concerns frequently succumbs to the political agendas of those with a personal stake in an unstable, resource-extractive approach to economic development [19]. The challenge, then, is to represent the complexity of current environmental challenges in accessible and engaging ways, while still ensuring that science appears to be playing a vital part in explaining and assessing environmental issues and generating solutions to these problems [18, 20, 21]. The controversial nature of Environmental Pollution can make it a suitable topic to be discussed in the class using D-MUN Method.

This learning method innovation has emerged after identifying the problems that still arise when conducting the discussion method in class based on the results of meta-analyzing literature and obtaining science teacher experiences. To solve problems with high urgencies, such as class engagement, student participation, and the implementation of discussion methods, the procedures for Model United Nations (MUN) activities are carried out in class when learning about environmental pollution. The opportunity for MUN to be implemented in the classroom needs to be considered because it offers a more organized classroom discussion. In addition, the benefits of adopting the MUN discussion procedure can train students with many skills, such as critical thinking, communication, collaboration, and conducting research. Therefore, this paper develops a conceptual framework for innovative discussion methods in science learning.

2. RESEARCH METHOD

Before the study, a preliminary survey was administered to twenty science teachers to obtain references about their experiences in implementing the discussion methods. Keyword extraction, a text analysis technique, was used to extract important words and recognize the main topics discussed. The type of keyword extraction used in this study was Word Clouds or tag clouds. It used machine learning artificial intelligence (AI) with natural language processing (NLP) to break down human language so that machines can understand and analyze it. Word Clouds showed visualizations of a text's

most frequently used word clusters. Figure 1 and Figure 2 are the results of teachers' responses to Question 1 ''What do you think about the discussion method in learning?" and Question 2 ''What difficulties did you experience when carrying out the discussion method?" respectively.

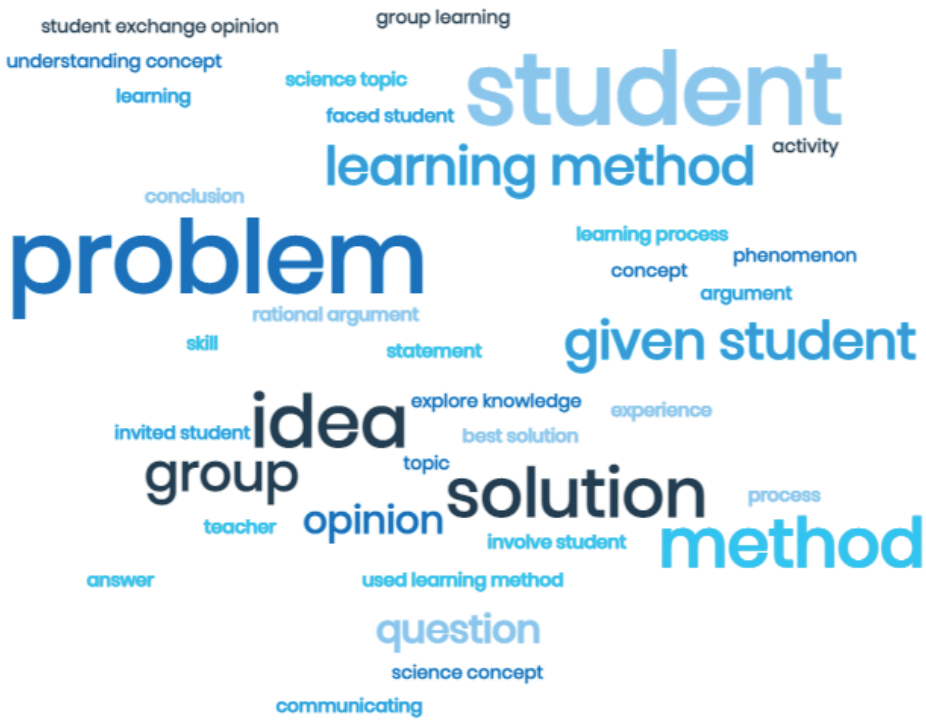

Figure 1: The keywords of teachers' answers on the definition of discussion method.

After identifying the survey results, there were several common obstacles encountered by the teachers, which were; 1) Poor time management, 2) Managing acquiescent and dominant students, 3) Overcoming slow-pace learning environment, 4) Effective students grouping, 5) Ensuring prior knowledge and students' readiness, 6) Selecting suitable science contents, 7) Unconducive class situation and 8) The discussion often drifted away from the initial matter. Compiling those problems of discussion methods in the classrooms directed to the innovation in discussion procedure to solve them. The discussion structure of the Model United Nations (MUN) was adapted to the discussion learning method so that the issues of time management, student grouping, and the unfocussed discussion can benefit the most from the D-MUN Method.

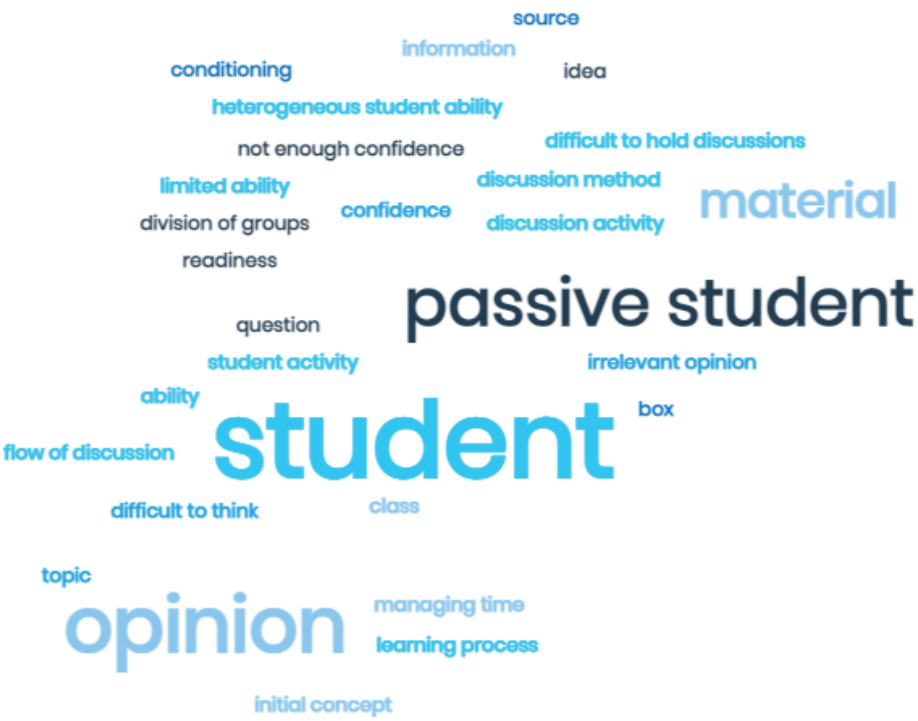

Figure 2: The keywords of teachers' answers on the problems of implementing the discussion method.

3. RESULTS AND DISCUSSION

The D-MUN Method is a classroom discussion organization that adapts the structure of the Model United Nations (MUN) forum. The procedures in MUN are adjusted to fit the classroom conductivity. The D-MUN Method can be used to learn several science contents with the problem-based learning approach because this method allows the science contents to be delivered by using the happening issues as contexts. The procedure of the D-MUN Method is shown in Figure 3 below.

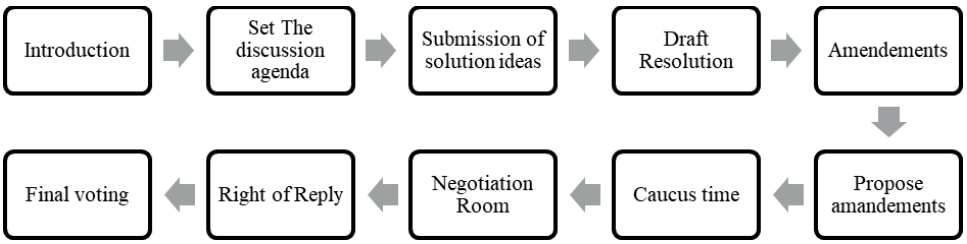

Figure 3: The procedure of the D-MUN method.

All steps are adapted from the procedure of MUN discussion and can be done in class settings. Detailed explanations of each step are provided to give fundamental descriptions for the D-MUN Method to serve the intention at its best.

1. **Introduction**. The teacher and students introduce themselves in the respective roles they have been assigned in the discussion. The teacher or class agreement decides the role assignment before the discussion. The teacher acts as the chairman or head table, whereas the students are delegates or representatives of a particular region or country. The recommended number of groups is no more than five groups and/or an odd number; ideally, each group has three members and/or an odd number [3]. Before coming to the discussion, students must have done prior research according to the prompt questions or brief stimuli provided by the teacher and brought several relevant ideas to the topic. Each group has the best speaker who will be the main representative of the group. The groups present their points or positions in the first stage of the discussion. The class seating is arranged in form of a U letter and is oriented towards the teacher/chairperson/head table position [13, 22]. Whenever the group is called, the best speaker says "present" and mentions the country he/she represents or shows the nameplate of the region or country before stating any statements or orders.

2. **Set the discussion agenda**. The discussion agenda is arranged by the students/delegates through voting procedures or following pre-determined orders. If there is no conflict of agreement on setting the agenda, the teacher/chairperson/head table opens the list of speakers. Students/delegates hold up their region or country signs to let the head table knows that they would like to be placed on the speaker list. The teacher/chairperson selects student representatives from the group/delegation to be included in the list of speakers according to the order in which the nameplate is raised. The first delegate chosen has the first turn, the second delegate comes second, and so on.

3. **Submission of solution ideas.** The chairperson calls the delegates to come forward according to a predetermined order to convey their problems and ideas for solutions regarding environmental pollution in their region/country. The chairperson uses the cue *''Delegates, it's your time to speak"* when inviting the delegates to speak. At the end of the presentation, the delegation says, "*The delegation handed the discussion forum back to the chairperson*". During the process of presenting solution ideas, delegates should respect other speakers by listening attentively. The chairperson has the right to reprimand any disrupting delegations and execute necessary enforcements.

4. **Drafting Resolution**. After all of the delegates have submitted their ideas, the discussion forum had a draft resolution to be followed upon. A resolution that is

currently being drafted by the delegates is known as a working paper. A working paper may be presented to the chairperson for consideration as a draft resolution once it has been entirely drafted and formatted correctly. The working paper must have at least two sponsors which are the delegate that has substantively contributed to the ideas. At least one-third of the members of the committee must be represented by sponsors and signatories combined. Signatories are delegates who support the working paper in principle but do not make any meaningful contributions, and they want it to be discussed. The chair will designate a resolution number for the working paper if it is accepted. A delegate must make a motion to introduce the resolution before it may be properly brought before the committee. The resolution may now be discussed and cited in the formal debate by its assigned resolution number after the motion to introduce has been made and automatically adopted. Any resolution that has been introduced by the committee may then be put to a vote. A Motion to Enter Into Voting Procedures on that Resolution may be used to accomplish this. A simple majority is needed to approve this motion, which needs two speakers in favor and two speakers opposed.

5. **Amendments.** Delegates can amend existing draft resolutions in three ways: questioning an idea, changing an idea, or adding a new idea. Amendment stages, namely:
6. Delegates who wish to make amendments (proposers) can raise their nameplates and convey the form of amendments they wish to make and points from the resolution to be amended.
7. The chairperson opens voting to the forum to ask whether the delegation's request is necessary.
8. Delegates can answer with three options of reaction, such as agree, refuse, or abstain.
9. Voting is carried out on the results of other delegates' answers.
10. **Propose amendments**. If the forum agrees to make amendments, delegates can make amendments by choosing to support or reject. Then, voting is done to get the results of the amendments.
11. **Caucus time.** At this stage, delegates can do three things, such as unmoderated discussions, build alliances, and co-signatures. When starting the caucus time, the chairperson conveys the time allotted to do this stage. Unmoderated discussion, which is a free discussion where students can leave their seats and go to other

delegates' tables to discuss resolutions when there is a disagreement. Building alliances and co-signatures are the stages of delegation looking for delegates who have the same ideas and can agree on the resolutions discussed.

12. **Negotiation room.** Delegates can be placed in a separate room/place in the class and negotiate the amended idea.
13. **Right of Reply.** The Right to Reply, if used strategically, can further the ideals and objectives. The proposer conveys the final idea of the resolution.
14. **Final voting.** At this stage, there must be at least votes that approve the resolution.

After all, if delegates do not propose other amendments to the resolution, the teacher/chairperson reads back the discussion results and ratifies the draft as the final resolution agreed upon after an exhaustive discussion procedure. The teacher brings back the students to the learning objectives which have already been constructed in the final resolution. The key points are emphasized to ensure the discussion is well conducted.

4. CONCLUSION

Implementing the discussion method in the classroom has major drawbacks. Thus, an innovation to solve those obstacles is developed for better discussion implementation in learning. The innovation adopts the structure of the Model United Nations (MUN) discussion conducted in class with the material on Environmental Pollution, namely the D-MUN (Discussion Model of United Nation) Method. The structure of the D-MUN Method consists of introductions, setting the discussion agenda, submitting resolution ideas, drafting resolutions, and amendments, proposing amendments, caucus time, negotiation room, right of reply, and final voting. With this innovative class discussion method, the learning activity can be more organized and provide students with the maximum learning experience which will influence their academic performance.

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