Notes from the Field
Argument Mapping in Philosophical Dialogue with Young Thinkers

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P hilosophy for/with Children (P4wC) is a pedagogical practice that aims to enhance thinking skills through group dialogue. One way it achieves this goal is by providing exposure to arguments. In a philosophical group dialogue, participants encounter, examine, or construct arguments. These arguments not only emerge spontaneously during discussions but are also integrated into specific activities, some of which draw from the history of philosophy.

Given the importance of arguments in cultivating thinking skills, teaching how to effectively engage with them becomes essential, if not a prerequisite, for fruitful philosophical group dialogues. Traditional ways of teaching logic, however, can be abstract and daunting for young learners. One way to help students in this regard is to think about how we represent arguments. In spoken discourse, when someone presents an argument, there isn't much room for creativity; it unfolds as a series of sentences spoken consecutively. However, when arguments are committed to writing, numerous representation methods come into play. They may be organized within paragraphs or presented as a list of sentences, each occupying a separate line. Argument maps or diagrams provide an alternative method. By providing a visual way to represent arguments, they offer a valuable tool to enhance philosophical group dialogues in P4wC.

This report comprises four parts detailing my use of argument maps in P4wC sessions. The first section explains what argument maps are and highlights their distinctions from other visualization tools. In the second part, I delve into the reasons why employing such a tool proves beneficial in P4wC. The third section outlines my experiences incorporating argument visualization in philosophy sessions. Finally, the fourth part shares some observations.

What is an Argument Map?

An argument map is a tree diagram that visually represents the content and logical structure of an argument.

Figure 1: A simple argument map representing an argument advanced by a student in class. The argument has a single premise at the bottom and the conclusion on top.

To construct an argument map, each proposition of an argument is written in a separate box. The box containing the conclusion is placed at the top, with premises written in separate boxes positioned below the conclusion. If a premise supports a claim, it is placed directly beneath that claim. Connections between propositions, indicating support relationships, are represented by lines or arrows. The resulting diagram conveys both the argument's content, encompassing all propositions, and its structure through the inclusion of connections and spatial relationships.[1]

It is crucial to distinguish argument maps from other visualization tools commonly used in educational settings, such as concept maps and mind maps.

In a mind map, the primary goal is to illustrate how a central idea or term connects to other ideas. Mind maps radiate outward from a central idea, incorporating pictures, colors, and varied line thickness. Mind maps are best utilized spontaneously and prove useful for brainstorming sessions.

A concept map is designed to enhance the understanding of a concept by explicitly depicting its connections to other concepts. Clarity is prioritized in a concept map, with named connections and the recommendation to use a focus question (e.g., "What is a volcano?"). This approach makes concept maps more structured and less spontaneous, aiding in the comprehension of a concept by showcasing its relationships with others.

In contrast, argument maps serve a different purpose with distinct construction norms. They are employed for thinking and communicating about reasoning, adhering to specific norms. For instance,

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[1] Different conventions exist for constructing argument maps. For instance, it is possible to build the map bottom-up, placing the conclusion at the bottom. However, the general principles remain consistent.

- Each box in an argument map should hold only one proposition. This ensures clarity when adding objections or premises, making their target explicit,
- Premises and objections should be differentiated using distinct line colors; for example, green for premises and red for objections. This enhances readability.
- Hidden premises should be placed within a box featuring distinct formatting. This differentiation aids in distinguishing the stated argument from the mapped one.
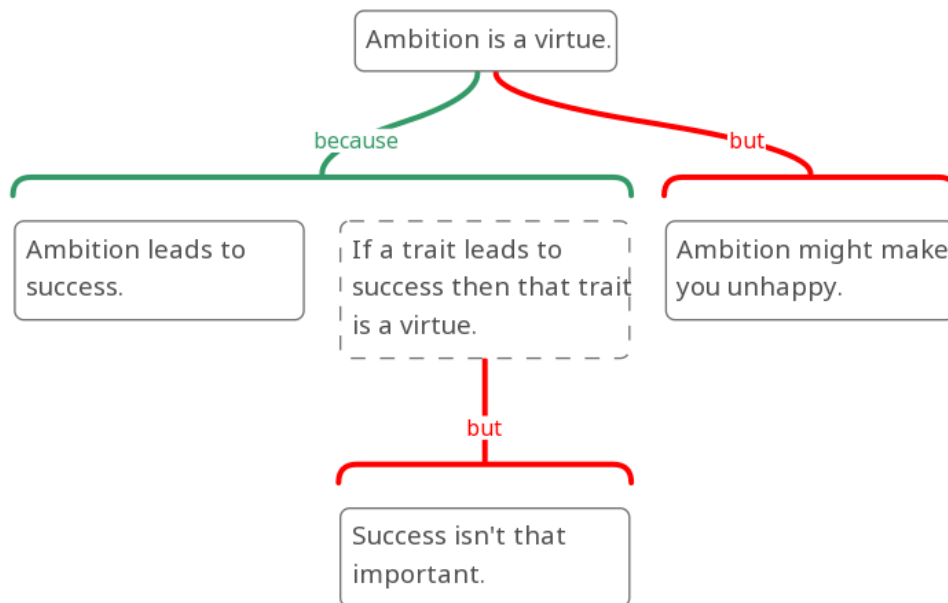

Figure 2: An argument map with objections, hidden premises, and co-premises.

Why Use Argument Maps in P4wC?

Philosophy inherently involves the analysis of arguments, and many P4wC sessions incorporate at least one argument. There are instances when an entire session revolves around the discussion of an argument, be it generated by a group member or drawn from the history of philosophy. Consequently, any method of representing an argument proves valuable and essential for P4wC practice.

Typically, facilitators lean towards more conventional styles of communication, presenting arguments in prose format through written or spoken paragraphs, or adopting a numbered proposition approach akin to logic textbooks. However, argument maps introduce an alternative style with a distinct advantage: visual presentation.

The visual nature of argument maps contributes to clarity and focus. Each proposition is neatly enclosed in a separate box, facilitating its isolation from the rest of the argument. This visual

representation not only enhances clarity but also provides a clearer insight into the role each proposition plays in the overall reasoning process.

Argument maps not only serve as a visual representation of reasoning but also illuminate two different aspects of argument evaluation: assessing the truth of premises and evaluating the validity of reasoning. This distinction becomes apparent during the process of working with argument maps. When examining an argument, if we find ourselves asking whether the contents of a box is true, we are engaged in evaluating the truth of the premises. Conversely, discussions about whether the boxes succeed in providing support for the ones above them entail an evaluation of the strength of the reasoning. While this distinction can be hard to grasp for beginning students, the practice of argument mapping effectively clarifies these distinctions.

Additionally, another notable benefit of working with argument maps is the preliminary evidence suggesting that repeated practice leads to improved outcomes in thinking skills. This reinforces the pedagogical value of incorporating argument maps into educational practices for fostering critical thinking and analytical abilities (Cullen et al., 2018).

How to Use Argument Maps in P4wC?

The present project involved six participants, 10-11-year-old students in a homeschool setting. Over the span of a year, we conducted weekly sessions that evolved in structure over time. Initially, the focus was on philosophical group discussions held every week. After a few months of pure P4wC sessions, we transitioned to a format where philosophical dialogue alternated with dedicated sessions for learning argument mapping. The final months integrated both aspects.

In the early stages of P4wC, our sessions centered around writing down emerging claims on a whiteboard during group discussions. We experimented with various methods to connect supporting claims and objections, showcasing the use and function of visual representation to help philosophical dialogue. Afterwards, I introduced the students to argument mapping.

Our weekly schedule alternated between P4wC and dedicated argument mapping sessions. During each argument mapping teaching session, we explored specific aspects of arguments, learning how to visualize them through mini lectures. Practical exercises were incorporated to reinforce these concepts. After approximately six sessions, the students achieved proficiency in reading and constructing simple argument maps. Subsequently, we switched to doing P4wC sessions every week, but integrated the use of argument maps into our sessions, thereby enhancing the depth and clarity of our discussions.

One effective application of argument maps in our sessions was to use them as stimuli to facilitate in-depth discussions about specific arguments. Following a suitable introduction, we would present an argument map on the board, providing a departure from the conventional approach of presenting arguments in a series of sentences. The advantage lies in the maps not only displaying the propositions involved but also showcasing the underlying structure of reasoning. This visual

representation enabled us to explore arguments in ways previously unattainable. We could systematically assess the truth of each proposition and discuss the interconnections between different parts of the map, evaluating the support provided by one part to another.
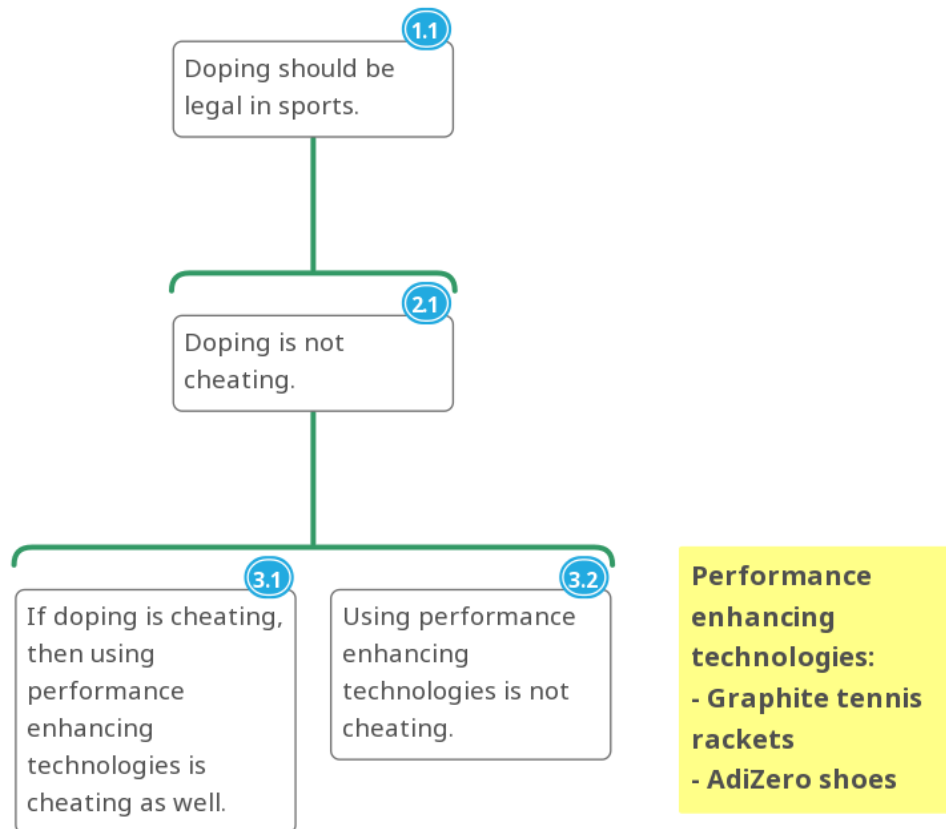

Figure 3: An argument map we used as a stimulus, illustrating an argument in the philosophy of sport. The note on the right provides additional information for context. It is not a part of the reasoning.

Another valuable use of argument maps was in the construction of visual representations based on our session discussions. In this activity, each student independently created a map reflecting the question under consideration, incorporating their own contributions, the ideas of others, and even introducing entirely new premises. While more challenging than reading and examining a map, this activity proved mentally stimulating, especially when adhering to the rules of correct mapping. This involved rigorously checking whether each premise genuinely supported the proposition above it. Students especially enjoyed adding premises and objections to a map, with one student exclaiming, "I could go on forever!"

Comments about Using Argument Maps in P4wC

The integration of argument mapping into a P4wC program was a valuable experiment. Several key points and observations can be highlighted.

Firstly, for the facilitator, acquiring proficiency in using argument maps is crucial. This involves developing skills in *reading* argument maps, which can be achieved through a short-term study. *Constructing* maps is a more intricate skill, both when mapping one's own argument and someone else's. Another essential skill, which aligns with general logic and critical thinking, is the ability to *evaluate* a given map. The facilitator must be adept in all these skills to effectively teach and assist students in mapping situations.

Secondly, teaching argument mapping to students is a process that requires time and effort. The introduction of this skill introduces a different style of activity into P4wC sessions. In practice, students may find dialogue sessions more comfortable and liberating, while perceiving mapping teaching sessions as more traditional. Some students commented that engaging in philosophy through dialogue is more enjoyable compared to learning the fundamentals of argument maps. Balancing these different styles and ensuring that both are engaging for the students is an important consideration for the facilitator.

Thirdly, it's important to note that creating argument maps often necessitates the use of electronic devices. While it's technically possible to draw maps on paper, the process is considerably more cumbersome. The efficiency of digital platforms becomes evident when tasks such as moving a box to an upper level take mere seconds on a tablet or a PC. In contrast, the manual process of erasing, writing, and reorganizing on paper is time-consuming and demanding. The use of electronic devices may not be suitable for all classes or groups, posing a potential challenge in implementing these methods.

Beyond the advantages outlined in section two, one of the most significant benefits, in my view, is the introduction of rigor and precision to dialogues. Whether assessing the truth of a premise or evaluating the strength of a piece of reasoning, argument mapping fosters a focused consideration of one element at a time. Additionally, it serves as a valuable method of communication about arguments, offering a shared language for representing objections, conclusions, missing premises, and more. Armed with these tools, both facilitators and young thinkers can achieve more, enhancing the depth and effectiveness of their philosophical engagements.

In conclusion, argument mapping enriches the skill set of both students and facilitators. It should be acknowledged that it may not be suitable for every P4wC session, particularly with younger students or those with limited access to technology, as it necessitates the use of electronic devices. Furthermore, its implementation often necessitates traditional teaching methods, such as lectures and exercises, which may diverge from the spontaneous nature of philosophical dialogue. But there are clear benefits to using this method, at least in specific situations. It serves to sharpen focus within dialogues, reinforces the vocabulary essential to reasoning, and crucially, introduces a structured visual

component to philosophical discussions. Particularly for facilitators emphasizing logic education, argument mapping proves indispensable. Equipping both students and facilitators with this skill set represents a significant enhancement to the efficacy and depth of philosophical engagement in educational settings.

References

Cullen, S., Fan, J., van der Brugge, E., & Elga, A. (2018). Improving analytical reasoning and argument understanding: A quasi-experimental field study of argument visualization. *Npj Science of Learning*, *3*(1), 21. https://doi.org/10.1038/s41539-018-0038-5

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