# Article information:

Measuring causality between collaborative and individual gaze metrics for collaborative problem‐solving with intelligent tutoring systems - Sharma - 2021 - Journal of Computer Assisted Learning - Wiley Online Library
<https://onlinelibrary.wiley.com/doi/10.1111/jcal.12467>

# Article summary:

1. Researchers have been able to produce more accurate models of students' current states and understandings to provide better learning support within intelligent tutoring systems (ITSs).

2. There is a need for adaptive collaborative learning support (ACLS) to provide appropriate support for students working collaboratively.

3. This article proposes using eye-tracking to assess students' collaboration behaviours by investigating the causal relationships between different process variables, such as dialogue, prior knowledge and success, in order to find indicators that can be tracked and measured in real-time within a collaborative setting.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article is generally trustworthy and reliable, as it provides an overview of the current state of research on intelligent tutoring systems (ITSs) and adaptive collaborative learning support (ACLS), as well as a detailed description of the proposed research methodology. The authors also provide evidence for their claims, such as citing relevant literature on ITSs and ACLS, which adds credibility to their argument. Additionally, the authors present both sides of the argument equally, providing counterarguments where necessary.

However, there are some potential biases in the article that should be noted. For example, the authors do not explore any possible risks associated with using eye-tracking technology to assess student collaboration behaviours. Additionally, they do not discuss any ethical considerations related to collecting data from students in this way or how this data might be used in future research or applications. Furthermore, while the authors cite relevant literature on ITSs and ACLS throughout the article, they do not provide any evidence for their claims about causality between individual and collaborative cognitive processes or how dialogue plays a role in this relationship. Finally, there is no discussion of alternative methods that could be used to assess student collaboration behaviours or how these methods might compare with eye-tracking technology.

# Topics for further research:

* Risks associated with eye-tracking technology
* Ethical considerations for data collection
* Causality between individual and collaborative cognitive processes
* Role of dialogue in cognitive processes
* Alternative methods for assessing student collaboration behaviours
* Comparison of eye-tracking technology with other methods

# Report location:

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