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Building shared understandings of learning analytics worldviews: A role for structured dialogue

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1 EXTENDED ABSTRACT

Science makes progress through teamwork and when a research field focuses on complex problems with societal impact, team-members need diverse skill sets in order to bring the necessary knowledge and practical experience to the table (Hall, et al., 2012). But a team whose members have diverse knowledge and experience often run into obstacles once they begin working together. They may not make their assumptions explicit about the problem they are trying to solve and they may have differing beliefs and values about particular aspects of the problem (Lund, Rosé, Suthers, & Baker, 2013). They often have different ideas about how to do research, or what constitutes the perimeter of their own activity or those with whom they work. If team-members do not understand these differences before they begin a project together, such differences may emerge at inopportune times, produce conflicts, and temporarily halt progress, or more seriously, even end the collaboration.

These difficulties occur at the level of a research team, but are also relevant for a community of practice (Lund, Jeong, Grauwin, & Jensen, 2020) and *Learning Analytics* is a case in point (Balacheff & Lund, 2013). On-line community discussion¹ has revealed a number of diverse assumptions by community members regarding many topics, some of which are below. All of them could result in roadblocks for research teams pursuing a shared objective (Rosé & Lund, 2013) and/or for research communities founded on different types of shared knowledge on which they depend:

¹ learninganalytics@googlegroups.com

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- Differing preconceived notions regarding relations with stakeholders outside of academia;
- Partial alignment of the goals for engineering versus the goals of research;
 - Differences in the value attributed to “outliers”, something that may be ignored in research, but that can be a matter of life or death in engineering
- Disagreement on the definition, competencies, roles of or even the existence of a “learning engineer” in a field called “Learning Engineering”;
- Differing opinions on the fundamental differences of scope between the sister communities Learning Analytics, Educational Data Mining, and Learning Sciences, as well as in relation to broader umbrella community terms such as Learning Informatics²;
- Disagreement on whether techno-solutionism is embraced by researchers or rather occurs only at the vendor level.

This proposal suggests a methodical way to bring such disagreements to light, confront them, hash them out, and thereby improve communicative and collaborative capacity within heterogeneous research teams (O'Rourke, & Crowley, 2013; Crowley & O'Rourke, 2020). The proposal also specifically addresses recognizing differences and building common ground in a community of research. The method is based on the Toolbox Dialogue Initiative (e.g. Hubbs, O'Rourke, & Orzack, 2020). Toolbox workshops³ help groups discover and examine perspectives by using questionnaires and structured dialogue that reveal attitudes, views, values, and beliefs. Workshop facilitators ask participants to rank a set of *probing statements* on a Likert scale⁴ and then use an app to collect the responses on a server and form discussion groups based on the responses. The probing statements are claims that are designed to help a participant see his/her biases and through subsequent discussion, move toward recognizing unacknowledged differences with other group members. Sample *probing statements*⁵ in Learning Analytics for which participants would position themselves on a Likert scale could include the following:

1. “We can’t solve a problem irrespective of the context in which it is used.”
2. "Anything that is complex cannot be engineered."

² <http://simon.buckinghamshum.net/2020/09/why-learning-informatics>

³ Center for Interdisciplinarity <http://c4i.msu.edu/>

⁴ (1) Strongly disagree; (2) Disagree; (3) Neither agree nor disagree; (4) Agree; (5) Strongly agree.

⁵ learninganalytics@googlegroups.com

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3. "Education is broken and it should and can be fixed with technology" (Teräs, Suoranta, &Teräs, 2020).
4. "Engineering is about making things; science is about understanding things"
5. "Learning engineers do not engineer learning, but rather engineer learning systems"
6. "We can't reduce the real problem of learning down to engineerable problems"
7. "Framing something as an engineering problem implies that it can be controlled, predicted, or managed in the same way that we can manage a fuel pump."

Given that we are submitting to the workshop on Philosophy of Learning Analytics and that it is designed to initiate a conversation around developing a philosophical framework for learning analytics, we propose to collaboratively develop a more substantial set of probing statements that could be used in future instances of a full Toolbox workshop. Developing such probing statements and discussing them seems crucial for moving the field forward.

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