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Comment on hess-2022-85

Erik Mostert (Referee)

Referee comment on "Strengthening interdisciplinary water research – learnings from sports team management" by Maija Taka et al., Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2022-85-RC1>, 2022

The paper addresses the challenge how to create interdisciplinary research teams that facilitate collaboration and learning. It draws on the literature on sport teams management and discusses the experiences in the Majakka project, a five-year water research project in which peer learning and peer support were central. It is not a novel idea to compare teams outside of sport with sport teams, but if there is a substantial body of literature on sport teams, it is definitely a good idea to take stock of this literature, assess the relevance for interdisciplinary water research, try and apply the insights gained, and discuss the experiences. That being said, there are some major issues with the paper.

First, the paper does not systematically analyse the literature on sport teams. As a reader, I would like to know what type of research has been conducted on sport teams management and what the main conclusions or lessons are. Throughout the paper there are references to this literature, and at several places the authors state that a specific issue is equally relevant for sports and for research, but that is not quite the same thing. Many terms and concepts are used in the paper that are not properly discussed, such as social capital, transactional and transformational leadership and of course interdisciplinary. A term that is used several times later in the paper is "psychological safety", but there is no discussion of this term and why it is relevant for interdisciplinary water research.

Secondly, the description of the case is rather abstract. For example, the paper mentions that students were encouraged to invite co-authors for their articles, which led to "situations of peer learning in terms of scientific practices, new methods and transferable skills." (line169-171) A concrete example specifying the practices and methods learnt and the skills gained would be really useful. In addition, more details about the Majakka project would be welcome. What was it about, was it one big project with each PhD student working on one part of it or was it rather a cluster of related projects, and was there only one supervisor for all PhD students? The teams building activities could be described more systematically and clearly too. Moreover, there is talk of the research group, but oftentimes it is not clear whether this refers to the Water and Development Research Group or the larger Water and Environmental Engineering Research Group.

Thirdly, the methodology is not explained well. In section 2.2 there is talk of journey mapping workshops, objective discussions, reflective workshops, co-designing workshop, regular workshops, interviews and surveys, but details are missing. What are the differences between the different types of workshops, were they recorded, transcribed or summarised, how and by whom? Who were interviewed how often and by whom, and what questions were asked or what issues were addressed? And how, and how often, were collaborative activities, group culture and wellbeing assessed in the surveys? Measuring particularly group culture is not a straightforward process and depends on one's concept of group culture. A further bit of information that is missing is the role of the authors in the Majakka group or the larger WDRG or WAT groups. If they were involved, this is something to reflect upon as it may influence interpretation.

Fourthly, I can imagine there are also differences between sports and research, but these are not discussed. In team sports, teams always win as a team, and if a team member wants to show off his prowess at the expense of the team, this is visible for all spectators. In PhD research projects, however, PhD students obtain an individual degree and collaboration takes place behind the scenes – or not. According to the authors, the Majakka project took place in a community that focuses on collective research successes. This is not the same everywhere in academia. Discussion of the differences between sports and research and between different research settings could result in a clearer view on the challenges of interdisciplinarity and the best strategies to promote it.

A smaller but not unimportant issue is that Figure 1 is not clear. It is not clear what the axes represent and why references are given both in the caption and in the figure itself. The descriptions in the figure partly describe Tuckman's model or further developments of this model, and partly they seem to describe the Majakka case, or at least they are formulated as such (e.g. testing and orientation "were" a crucial stage).

The conclusion of the paper is that "peer learning" would benefit from "mechanisms and practices" that establish, reinforce and enable "formal and informal activities" that "facilitate collaboration, new research openings and strengthen psychological safety among the team." (lines 414-416). This conclusion lacks specificity and it is not clearly supported by the preceding analysis.

My own conclusion is that the paper needs to be rewritten completely. It is definitely worthwhile to analyse the literature on sport teams management and discuss the experiences with applying the lessons, but the result should be a quite different paper.