Combining research and teaching by creating student-driven systematic review articles

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Background

- Combining research and teaching is an important measure to prepare students for a potential academic career by actively involving them in research projects.
- Systematic literature reviews are well-suited for this purpose as no additional resources are needed except for computer and internet and database access for research articles.
- Researchers coordinating this project can offload reviewing work against the education of the students. Therefore, they have to coordinate the students and combine the different results into an overall coherent and well documented reviewing procedure.
- Since 2011, 9 student-driven review projects were conducted by Henrik von Wehrden's team at Leuphana University, of which four were conducted in cooperation with two sustainability-related working groups from Lund University.
- In the following, we are describing our experiences with taking part in and coordinating systematic student-driven review projects.

Procedure

Procedure		Faculty's responsibilities	Students' responsibilities
1. Project initiation	Defining area of research Involving faculty Promoting project to students	• Decide on research topic • Conduct pre-test in databases • Draft project outline • Advertise project	• Join project • Read landmark papers of the field • Revise personal calendar schedule
2. Project framing	Team building Jointly framing research purpose	• Provide introductory knowledge • Guide framing of research purpose • Clarify expectation, objectives, timeline	• Organize team building activity • Frame research purpose • Develop general decision rules • Create code of conduct • Define timeline of deliverables
3. Review procedure	Reproducible gathering and coding of data	• Supervise and coach review procedure • Available for consultation hours	• Conduct literature review • Organize regular meetings • Make review procedure coherent
4. Data analysis	Creating robust results and visualization	• Supervise and coach data analysis • Build analysis skills in students	• Conduct data analyses • Organize regular meetings • Harmonize creation of results
5. Results framing	Develop narrative and structure of the manuscript	• Supervise and coach results framing • Guide narrative development	• Develop the narrative of the manuscript • Organize regular meetings • Focus on main narrative
6. Article finalization	Drafting the manuscript Submitting to target journal	• Guide finalization of the manuscript • Coordinate manuscript submission • Coordinate post-submission process	• Support finalization of the manuscript • Assist submission of the manuscript • Assist post-submission process

Preparing food together as a group activity that helps to create cohesion during the two workshops.
This is helpful to improve group work prior to the phases of remote work. Many participants went on to later create their own reviews, for instance as part of their PhD.
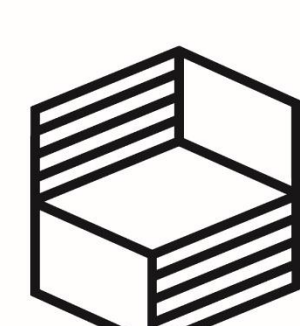
Conclusion

Opportunities	Challenges
• Students gain experience in conducting research	• Identify motivated and skilled students
• No equipment needed except for computers and access to online repositories	• Manage a group of people with very diverse personalities, career stages and backgrounds
• PhD students gain experience in teaching and coordinating collaborations with other researchers	• Handle collaborators not working on their tasks and not responding to messages
• Students get a first citation for their C.V. → helps with applying for PhD scholarships	• Ensure regular (online) meetings, especially when two universities are involved
• Manage to review a large proportion of scientific literature coherently	• Make a coherent draft out of many paragraphs written in different writing styles

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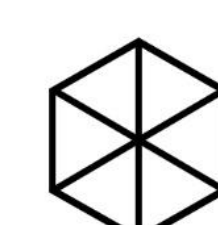Stiftung Innovation in der Hochschullehre

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