Consent Form

Consent.

Survey on challenges and strategies in conducting systematic literature reviews

This research project is being undertaken as part of a Ph.D. program at the school of Computer Science and Engineering, UNSW.
In this study, we are keen to receive your feedback on the new platform that we are implementing to aid researchers in conducting a systematic literature review(SLR). Our goal is to design an easy-to-use, inviting, and functional platform. We considered your valuable responses to our previous survey in this platform design. You are invited to participate in this survey as your experience and feedback would help with designing a practical and more reliable platform. In the previous study, we found the challenges researchers facing in conducting an SLR. In this survey, with presenting the wireframe model of the PRO_SLR platform, we would like to receive your feedback on the proposed solutions.

Participation:

Participation will involve completing a survey that would take 15 minutes of your time, although this time may vary for each individual. You will not be asked to disclose any confidential or sensitive information about yourself.
In this survey, you will be asked to answer questions related to the SLR process and important considering your experience in conducting one.
Your participation in this research project is entirely voluntary. If you agree to participate you do not have to complete any question(s) you are uncomfortable answering. Your decision to participate or not participate will in no way impact your current or future relationship with UNSW.
If you do agree to participate you can withdraw from the research project during your participation without comment or penalty. However, the survey does not request any personal identifying information.

Expected Benefits:

It is expected that this research project will not benefit you directly. The outcomes of the research, however, may benefit the improvement of SLR researchers or implementing an initiative automatic SLR platform, which would be beneficial to the science society.
If you choose to receive the result of this study, you will need to provide some basic contact information such as an email address. However, your identity will not in any way be connected to other data collected relating to your involvement in the study.

Risks:

There are no risks beyond normal day-to-day living associated with your participation in this project.

Privacy and Confidentiality:

All comments and responses are anonymous and will be treated confidentially unless required by law. The names of individual persons are not required in any of the responses. Any data collected as part of this project will be stored securely as per UNSW's management of research data policy. This project has been approved by the UNSW Human Research Ethics Committee (approval number HC190895). Please note that non-identifiable data from this project may be used as comparative data in future projects.

Withdrawal:

If you want to withdraw, you can stop participating in the survey by closing the browser as we do not have any mean of tracing your submission after you submit it.

Consent to Participate:

Your submission of the completed online survey will be taken as your consent for participation in the study.

Questions about the project:

If you have any questions or require further information please contact:

Maisie Badami *m.badami@unsw.edu.au*

Do you consent to these terms?

- ○ Yes
- ○ No

General Questions

Q2. Where are you located?

Oceania	Asia	Europe	Africa	Latin America	Canada and USA	Prefer not to say
○	○	○	○	○	○	○

Q3. What is your gender?

Woman	Man	Non-binary	Prefer not to say	Prefer to self-describe
○	○	○	○	○

Q4. How many SLRs have you conducted?

1	2	3	More than 3
○	○	○	○

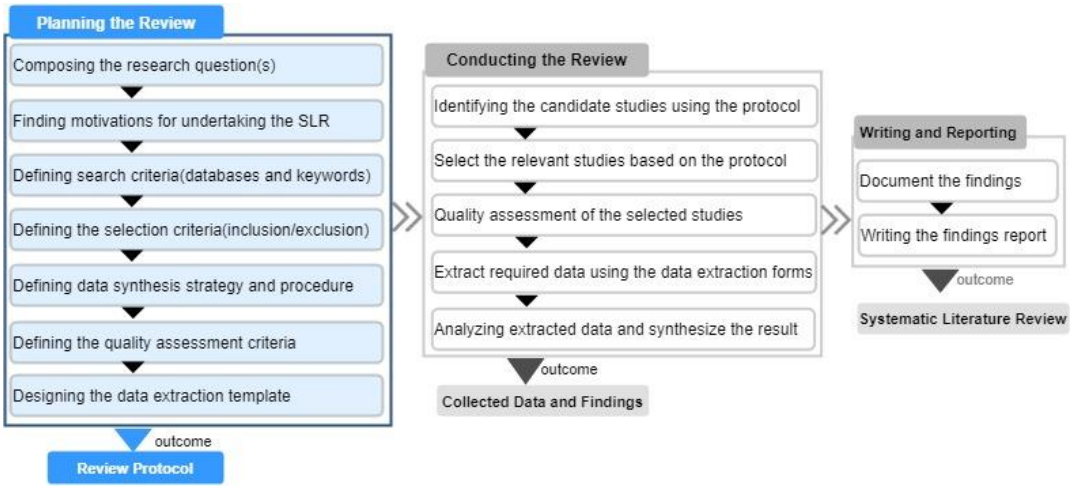
Q5.

Please answer the following questions about your latest experience in conducting a systematic literature review (SLR).

How many senior researchers were involved in conducting the review(s) (on average)?	1	2	3	More than 3
How long did it take for the review to be completed?(excluding publication period)	Up to 3 months	Up to 6 months	Up to 1 year	More than 1 year
What level of research expertise did you have when conducting SLR?	Novice	Intermediate	Senior	Supervising

Tasks

SLR Planning Phase. This section contains questions related to SLR **"Planning phase"** that is also known as defining the research protocol phase. This phase is the starting point of the SLR process in which the authors look for reasons to conduct a new review, defining the boundaries and scope of the review. The result of this phase is the "review protocol" which is used as a guideline for performing the remaining phases of SLR. This phase comprises of the tasks shown in the below image.



Q7.

Based on your own latest experience in conducting SLRs, please specify your agreement with the following statement.

The following tasks have been **properly addressed** in the SLR I've participated in, during planning (If you were not aware of a task, please choose "Not aware" option)

	Strongly disagree	Disagree	Neutral
Composing the research question(s) by following the guidelines to struct standard questions	○	○	○
Identify the need for conducting a new SLR (by searching for previous reviews)	○	○	○
Defining the search strategy to search for primary studies (including search terms and digital libraries)	○	○	○
Defining study selection criteria and procedure (inclusion/exclusion criteria)	○	○	○
Defining data extraction strategy	○	○	○
Defining data synthesis strategy	○	○	○
Defining study quality assessment checklists and procedures	○	○	○

Challenges

Q8.

In this section, we explore some of the SLR challenges:

Based on your experience, how important is it to address the following challenges so as to improve the planning of SLRs.

	Not important	Slightly importance	N i
Guidelines do not provide practical support and solutions to challenges in the process	○	○	
Not enough context and knowledge to anticipate all the tasks in the planning phase	○	○	
Limitation in digital libraries to identify previous relevant reviews	○	○	
Inadequate experience and expert support to conduct the planning tasks	○	○	
Trust concerns about obtaining external feedback (early sharing of planning artifacts, e.g. protocol, RQs)	○	○	
Inadequate support or unawareness of SLR planning support tools	○	○	
Scarce research funding limiting the scope and planning of an SLR	○	○	
Insufficient channels/communities for seeking support and collaboration	○	○	

Q9.

Please, let us know with your comments what other important challenges you faced when planning SLRs.

Potential solutions

SLR-PRO-Intro.

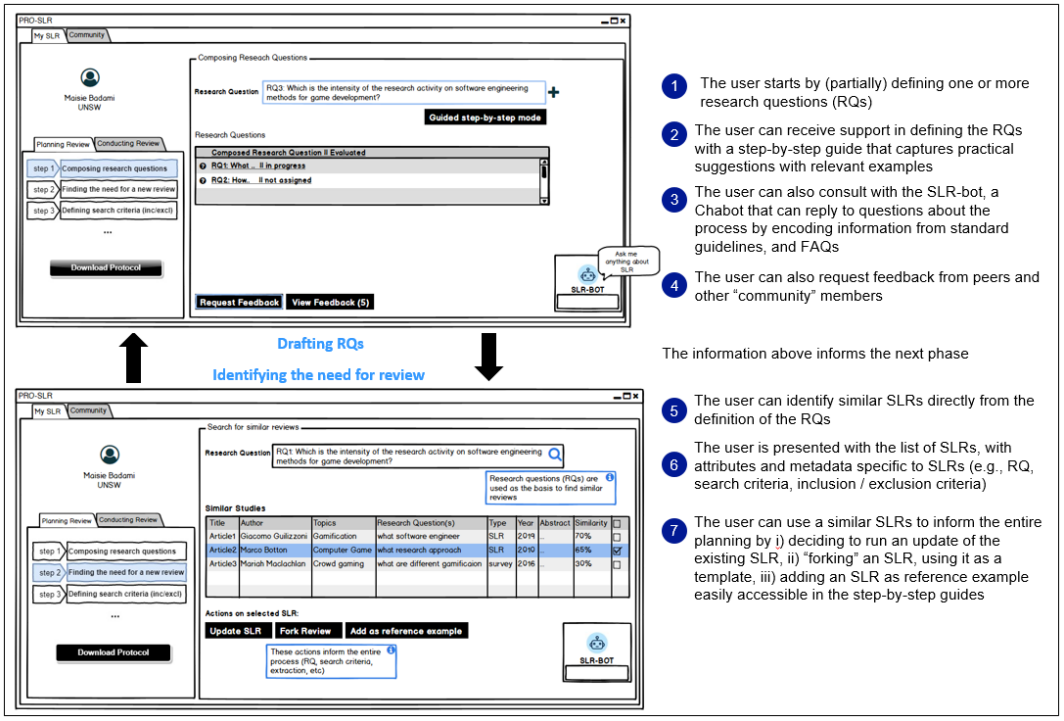
Feedback on design directions:

In this section, we present a conceptual design of a platform to support the planning of SLRs. We proposed two groups of solutions and strategies to overcome some of the SLR challenges. In the following, we illustrate these strategies in an example interaction involving the first two steps in the SLR planning: defining the RQs and identifying the need for the SLR. The same strategies apply to the rest of the steps.

We kindly ask you to provide your feedback on whether the solutions can help address some common challenges in the planning.

Automation

The first solution is related to automation techniques and using the state of the art of machine learning and data-mining to support the tasks that are iterative and time-consuming such as the search for relevant reviews. Some of the supports are as follow: *ChatBot assistant, Automatic search, Automatic data extraction***.** The wireframe image showing below is showing how this automation can help to find relevant reviews in the first step of planning by using the research question.



Q11.

Inadequate experience and support (technology and guidelines). To address this challenge we provide the following solutions:

- **ChatBot assistant** that allows authors to ask questions about the SLR process and best practices. The chatbot provides a natural language interface to all information encoded in guidelines and recommendations

- **Step by Step guidelines** for each of the tasks. The interface encodes best practices and can guide authors in the overall planning, and in the preparation of each "artefact" (e.g., RQs, inclusion/exclusion criteria) by providing step by step informative prompts.
- **Support from peers** who can provide support when there is not enough context and knowledge available to anticipate the planning tasks (e.g. evaluating the research questions)

The above solutions address this challenge

Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
○	○	○	○	○

Q12. What reasons would prevent you from using the above solutions?

Q13.

Do you have other suggestions for addressing the given challenge?

Q14.

Not enough context and knowledge to anticipate all tasks in the planning phase. To address this challenge we provide the following solutions:

- Iterative process. The planning can be refined iteratively as more information emerges during the process. For example, RQs and inclusion/exclusion criteria can be refined as we identify similar literature reviews and learn more about the topic.
- Incorporating context and knowledge. To address this challenge, the system leverages information available in similar literature reviews by extracting SLR-specific metadata relevant to the protocol (e.g., RQs, criteria, search strategy) and made them available to the authors as a reference point in each step of the planning.

The above solutions address this challenge:

Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
○	○	○	○	○

Q15. What reasons would prevent you from using the above solutions?

Q16.

Do you have other suggestions for addressing the given challenge?

Q17. **Limitations of digital libraries to identify relevant SLRs.** To address this challenge we provide the following solutions:

- Search focused on SLRs. Instead of defining complex queries and terms to identify SLRs, the search focuses only on SLRs.
- From RQs to similar SLRs. Similarly, the system allows users to go from their (partially) defined RQs directly to similar SLRs.
- SLR-specific metadata. Besides the typical, title, authors, and abstract, the search results provide information that is specific to SLR, including RQs, inclusion/exclusion criteria, search strategy, etc.

The above solutions address this challenge.

Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
○	○	○	○	○

Q18. What reasons would prevent you from using the above solutions?

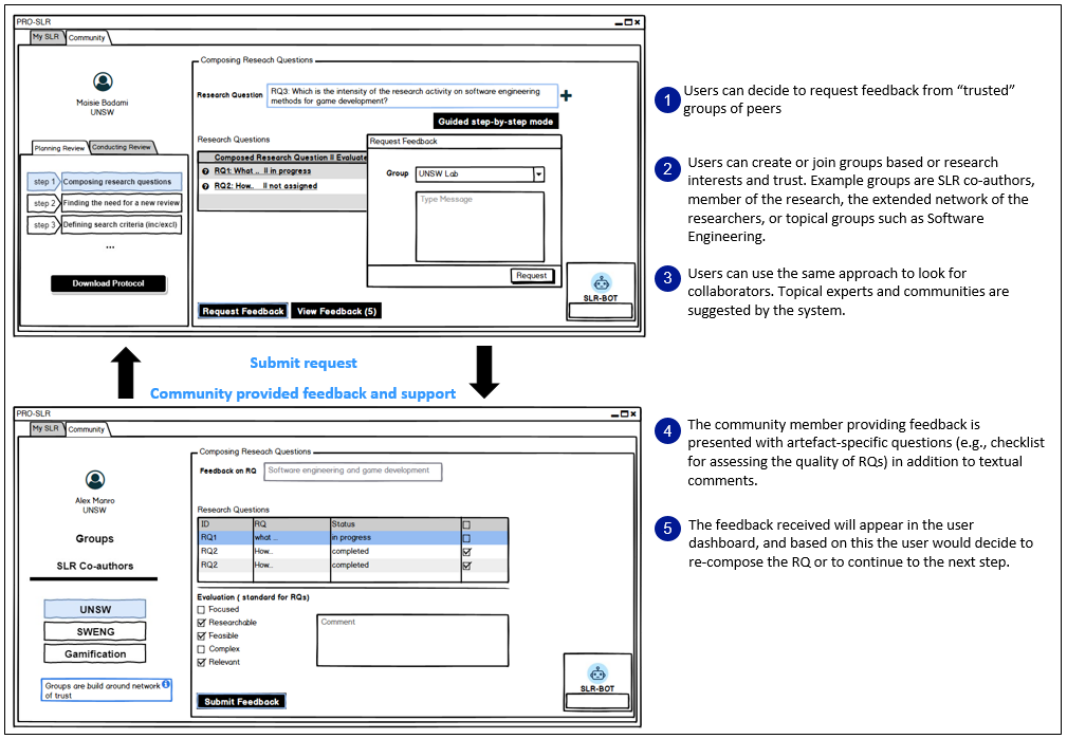
Q19.

Do you have other suggestions for addressing the given challenge?

SLR-PRO-Intro.

Community

The second solution is to providing support to conduct tasks that require adequate experience and knowledge or years of experience. We propose to use "expert networking" as a promised solution. This network is build around the trust and the topic of interest. The wireframe image showing below is showing how this solution help the researcher to seek feedback about composing a research question.



Q21. **Inadequate expert support and trust concerns in obtaining external feedback**.

To address this challenge we provide the following solutions:

- Ability to get adequate external peer support The system enables authors to get feedback and input from external peers on the artifacts related to the review protocol (e.g., RQs, search strategy, etc), where each artefact can be evaluated according to artifact-specific quality criteria to keep feedback focused.
- Connecting peers based on the topic of the SLR. Authors are connected to external peers based on the topic of the SLR (as well as expertise) to make sure the peers are qualified to provide feedback.
- Groups build around trust. Authors can create and join communities based on mutual trusts, such as members of the same lab, current, and past collaborators, so as to leverage and build their own networks.

The above solutions address this challenge.

Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
○	○	○	○	○

Q22. What reasons would prevent you from using the above solutions?

Q23.

Do you have other suggestions for addressing the given challenge?