PROJECT QUALITY & INNOVATION

By Prof. Jason Stokes

Many find the Project Quality and Innovation section the most challenging to write. It is really the heart of the proposal and is typically several pages in length. As the background and aims to the project have already been written in previous sections, this section allows the applicant to go into specific detail on research they propose to be funded. It must be compelling, as you are trying to convince the assessors and panel members not that you are not just an excellent researcher, but that you are proposing research that is significant and important, that you have original ideas and feasible approaches, and that the project has potential to be successful. You are trying to convince people to fund you and your research, so this is where you have an opportunity to make your case.

The following is a guide to writing this section of the grant, with specific focus on Fellowship applications. Note, as grants guidelines vary year to year, it is important to refer to the ARC's Instructions to Applicants, and to follow it explicitly.

DE22 ITA: PROJECT QUALITY AND INNOVATION

Describe the:

- contribution to an important gap in knowledge or significant problem;

- novelty/originality and innovation of the proposed research (including any new methods, technologies, theories or ideas that will be developed);

- clarity of the hypothesis, theories and research questions;

- cohesiveness of the project design and implementation plan (including the appropriateness of the aim, conceptual framework, method, data and/or analyses); and

- extent to which the research has the potential to enhance international collaboration.

In the box above, taken from DE22 Instructions to Applicants (ITA), it is advisable to follow the criteria in the order it is written so it is straight forward for assessors and panel members to see where you address it. However, if this doesn't fit your narrative, use "signposts" to assist your reader find where you address it. Methods to "signpost" include using headings that that reflect the criterion (i.e. five dot-points above), or words in bold from these if you use alternative headings/approaches. Note, the words in the ITA vary year-to-year, so it's important to pay attention to changes and the verbs used. For example, the key verb here is "describe", which means to provide a detailed account of each aspect within this section.

1. Important gap in knowledge or significant problem;

In this sub-section, you must focus on the specific knowledge gap or research problem, rather than state the benefits of the research (a common mistake). The long-term benefits should only come in if it forms part of, or provides context for, the specific problem or specific knowledge gap that you are aiming to address. Avoid being general here, as it is now time to go to key focus of your project. Consider:

- What is the knowledge gap or research problem?

- Why is it significant/important? What could it enable?

- Why does it exist? are there deficiencies in the current approach in the field?

- What aspects are you focusing on in particular?

- What is your unique angle for addressing it, and why is that a better approach than what others have tried in the past? How do you know your approach is feasible?

- What is your connection to the knowledge gap or problem and do you have a unique insight into it? Why are you motivated and best equipped to investigate it? You could highlight how your past research fits in here, as well as that of others.

At the end of reading this section, the assessor or panel member should have a clear understanding of the problem and be enthused about your proposed solution to it, even if they are not a discipline expert.

2. Novelty/originality and innovation of the proposed research;

In this sub-section, you must consider novelty, originality and innovation. These include any new methods, technologies, theories or ideas that will be developed.

The previous sub-section stated the problem, so now this section describes *how* you are going to address it with a focus on *novelty, originality and innovation*. You should consider providing a goal here for your research so the target is clear and builds on the gap you previously identified. It should not replicate the aims you may have already written in the "Aims and Background", but reflect how you are addressing the problem, for example "I aim to address this significant research problem and major short-coming by x y and z. My novel thesis is …"

This sub-section should articulate the new approach or idea you may be taking to address the problem. The focus here is not to provide a detailed plan but focus on the original and innovative aspects of the work. A useful approach is then to list explicitly what makes it original and innovative, as well as timely, and why. Consider also why you and why now.

A common mistake is using the word 'novel' repeatedly, without explaining why it is novel. Added to this is to say it is novel because it is the first time something is being done, but without explanation as to why it's the first time or why it is innovative to take this new approach; when I see this, I just assume it must be a bad idea because no one has done it that way before. Hence, you must explain and justify your suppositions.

3. Hypothesis, theories and research questions;

So, after stating the knowledge gap/problem and how you are addressing it, here the focus is on **clarifying** the research idea in the form of one or more specific:

- Hypothesises – "a supposition or proposed explanation made on the basis of limited evidence as a starting point for further investigation.";

- Theories – "a supposition or a system of ideas intended to explain something, especially one based on general principles independent of the thing to be explained."; and/or

- Research Questions - "a question that a research project sets out to answer" that helps to address a research problem

Focus in on stating and describing these clearly without restating aims. These really set the foundation of any research, including in high-calibre journal publications, so you should already be experienced writing these in your past research.

It may not suit having this as a dedicated section, and it could be incorporated into preceding sub-section. An easier narrative may be to present hypothesis first, and then state your innovative approach to evaluate it, for example. The keyword in the criterion is "**clarity**". It is easy to get caught up writing convoluted descriptions about the wonderful things you are going to do. This keyword is a reminder about keeping it simple or at least providing statements that clearly identify your key hypothesis, theory or questions.

4. Cohesive project design and implementation plan

Here you are providing detail on precisely what you are going to do and will need to show the project design and implementation will answer the research question. The assessors/panel want to determine whether it is cohesive and thus makes sense, and thus contributes to the feasibility. This section should include the aims, a conceptual framework, methods, data and/or analyses that are appropriate to solving the important problems you previously stated.

Different strategies can be used that depend on your discipline and the nature of the grant.

For grants with linear timelines, you could provide a diagram that captures the concept and approach you are taking. Consider breaking up the project into a list of key activities to address specific research questions.

For grants with different work streams and a high level of complexity, it is often useful to provide a graphical conceptual framework that highlights your approach and presents key aspects of the project that could include a simplified Program Evaluate Review Technique (PERT) diagram that includes the major work packages. Work packages (WP) are a method in which to group activities and tasks to address key objectives, which also considers the timeline of work. A Gantt chart can be included here or in Feasibility section (depending on scheme). It is important to provide enough detail in the task lists under each work package for both an expert to follow and appreciate, but still needs to be clear for general assessors and panel members to follow.

It is important to make clear what methods will be used, identify who is doing what, and how the outcomes of each work package align with each other and the overall goal of the research as articulated earlier in this section. It's good to highlight aspects where you have existing expertise, or if equipment used was acquired by ARC funds (LEIF grants) for example. If you don't have expertise on a certain aspect, be clear how that part of the work will be done and roles and expertise of any collaborators, research assistants and Higher Degree Research students associated with the project.

Consider contingencies if something doesn't work out, or whether there are any decision trees that will dictate direction of the work. But be careful in appearing to be uncertain; while risk is necessary for any research, one still wants to present some confidence in the outcomes and your ability to do the work. If you have any preliminary data to support any of the work, share it.

While it is easy to write lengthy work plans, it is necessary to appropriately edit to ensure it is written in a focused and direct manner to limit its length while containing all essential information. An expert assessor is likely to read this thoroughly to see if you really know what you are doing, so it's not unusual for this section to be more technical than others but it still needs to be very readable by the panel member.

5. International collaborations

This section is about providing details on the extent to which the research has the potential to enhance international collaboration. If you have a track record of international collaboration, say so, along with providing evidence. You may be building on existing collaborations, and therefore one should discuss how this project will enhance that collaboration. In other cases, you may need to develop a new collaboration, in which case you should highlight those you anticipate engaging with due to their specific expertise or potential to contribute in some way to the project. Use language which accurately describes the relationship (or not) with the potential collaborators. Avoid saying "will" when "anticipate" may be more appropriate. Also, how international is the research? Is it in an area that is likely to stimulate global interest? Could it lead to international collaborations with industry, where it may be useful to highlight potential impact of the research.

Be very wary about making claims that are unrealistic, as assessors and panel members are likely to see through it and take a dim view. If your research looks specifically at Australian issues, and has limited potential for specific international collaborations, then you may have to be up front about this. However, it is important to reflect on the *potential for you* to use the fellowship to build international collaborations and your international reputation.

Top Tips

Tip #1 "Instructions to Applicants"

The number one mistake I have noticed when "reading" draft grants is that the ITA has not been followed. This is usually obvious, and is highly likely to lead to failure or ineligibility. For ARC grants, the "Instructions to Applicants" (ITA) is essential to download, read and follow as it provides guidelines as to what is needed in this section. Whenever I review drafts of grants and talk to an applicant, it is surprising to find a vast majority have not read or considered the instructions. The ITA's may vary from grant-to-grant or fellowship each year, so ensure you have the latest version.

Tip #2 Signposts

Using signposts in the grant can be great way to ensure the reader can follow your key messages. One type of signposting commonly used is to **bold words** that are used in the criterion so readers can quickly find how you address it. If this is used as a strategy, it should be done sparingly to draw the reader to the key messages. Overuse of bolded words/phrases can also detract from the message or make them blind to it.

Tip #3 Pay attention to Verbs in ITA

When reading the ITA, the writer should pay attention to the verbs being used, and writing the grant in response to these. Typical verbs or phrases include:

"Explain how …"
"Demonstrate…"
"Describe …"
"Outline …"

A common mistake is to state "what" but not "how" or "why", or not to "describe" or "explain".

Tip #4 Write, review criterion, Edit

It easy to get caught up with lots of details in grants and to write it much like a paper. It is good to always go back to the instructions and review it by determining whether an assessor and panel members can clearly see where you address each point in the criterion. You cannot rely on the assessor/panel just working it out, or reading-between-the-lines, as its your job to make it clear upon a single read that you address the criterion stipulated.

Tip #5 Consider your audience

Early career researchers tend to write overly-complicated grants, using technical language that sounds sophisticated and clever, but is ultimately hard to read and follow for both an expert and non-expert alike. "Keep It Simple …" (KISS) is the mantra here; if you can write something using simple, clear language, do so. If you must use technical terms, define them when they are not common to a broad audience. It is important to note that the panel members are not likely to be experts in your area, so make it easy for them to learn about your research area and make it compelling so that they want to read more about it.

Tip #6 Originality

Ensure what you say is true by substantiating your claims and doing due diligence through literature analysis. Not everything has to be new, but something should be, so be specific and provide details on why and/or how something is novel or original. Consider consequences of:

- saying this is a "first", but an internet search or your own papers suggests otherwise, and an expert assessor knows it's not.
- saying it's the "first time" without saying why it's never been done before and why you are doing it. Does that suggest it is a bad idea?

Tip #7 Figures

Pictures are useful to break up text and to explain things more clearly, but they must be readable and not too detailed to follow. Are the fonts large enough (usually to match the main text) and does the image actually help provide clarity?

Tip #8 Excitement and Clarity

There are lots of excellent grants, so how do you get yours standing out? Aim to make it clear and easy to read, and aim for it to be exciting. It helps if you are enthusiastic about your project. Ask yourself, what makes me excited about the prospect of doing this project? If the research was successful, what will it lead to? Excitement is easiest to communicate if there is clarity over the knowledge gaps, their importance and the innovativeness of the project. Complex dialogue, thoughts and ideas are not all that exciting, nor is it when one needs to read it a couple of times to understand it.

Tip #9 Feasibility

Be wary about operating outside of your expertise and experience. It should be clear about why your skills and expertise and experiences make this an ideal project for you.