# How to Construct a Proposal

## **Presentations**

* Author information (Name, affiliation, email address of each author)
* Type of presentation (poster, paper, workshop)
* Theme
* Learning Area (nominate any appropriate)
* Title of presentation
* Key words (3-5 words/phrases)

 **Proposal**

What is the problem? (e.g. Problem that got you involved in the program, eg. Student engagement, low enrolments in senior science)

What is needed to be done? What is your response to the problem? (e.g. Undertake PD, or redeveloped curriculum or engage with industry etc.).

What you did or found? (e.g. Enactment, Increased student engagement, problems or enablers)

Conclusion or future (e.g. Future plans, key learnings)

**Example 1**

**Making STEM sustainable – developing a comprehensive STEM vision**

*[What is the problem?]*

In Australia, concerns have been voiced about both performance and participation of students in Science, Technology, Engineering and Mathematics (STEM) related subjects through all sectors, and whether they are fully prepared for the modern workplace (Australian Industry Group, 2013). State and federal education authorities have reacted by initiating a range of policy changes culminating in the National STEM School Education Strategy (Education Council 2015).

*[What is needed to be done?]*

The challenge for educators is to translate a largely ill-defined, politically charged and narrowly utilitarian policy agenda of securing a future workforce, into a valid and coherent curriculum. The objective of this paper is to articulate a comprehensive, multi-faceted and coherent *STEM vision* that addresses the subtle and complex challenge of preparing “twenty-first century” citizens within the constraints of a traditional school system and curriculum.

*[What you did or found?]*

This paper explores the question: How can a multi-faceted vision of STEM education in a teacher professional learning program sustainably and effectively meet the specific needs of schools? We report on insights from a teacher professional development program, *Successful Students-STEM Program,* operating in ten schools in regional Victorian city, Australia, designed to develop year 7 and 8 Science, Technology and Mathematics teachers’ capacity to teach STEM.

*[Conclusion or future]*

The research is showing that a STEM vision needs to be more than discrete STEM-related activities slotted into an already bulging curriculum to be sustainable.

**Example 2**

**Preparing teachers for out-of-field teaching during initial teacher education**

*[What is the problem?]*

The true impact of teaching out-of-field is in the classroom where teachers are expected to teach content that does not match their qualifications for background. We know from previous research that teaching out-of-field has a differential effect on teachers’ content and pedagogical content knowledge, identity, self-efficacy, and well-being. While some teachers manage the transition into a new subject well, others can struggle to the point of exiting from teaching all together. Early career teachers in Australia are in particular danger of feeling the negative effects of out-of-field teaching as they are more likely than their experienced colleagues to teach out-of-field. However, the journey of a teacher begins before they assume their first teaching position. Initial teacher education (ITE) is a foundational time for teachers as they begin to develop their teaching identity as they gain an understanding of what it means to be a teacher. This includes their appreciation of the likelihood of having to teach out-of-field, which, in many Australian schools, has become a commonly accepted practice.

*[What is needed to be done?]*

While teacher education programs are not required to prepare teachers to teach out-of-field, they do have the challenge of preparing adaptable, well-informed, capable teachers. Critical to our understanding of how to approach out-of-field teaching in ITE is identifying the types of activities and actions that can be used to ensure teachers are adequately prepared for the challenge of teaching out-of-field.

*[What you did or found?]*

This presentation reports on findings from a study examining the curriculum of eight non-metropolitan secondary initial teacher education programs as part of a multiple case study in Victoria and New South Wales. Teacher educators from these programs were interviewed in relation to how they respond to the demand for adaptable early career teachers. This presentation reports on where adaptability is embedded within these programs. An analysis of four of the programs identified three aims associated with the actions that were raised: awareness raising; capacity-building; and identity development. Four types of actions were identified by teacher educators at the four universities: third spaces (6 actions); structures and activities to raise awareness (12 actions); strategies to develop adaptability (16 actions); and boundary objects (9 actions). These actions occurred either in the method units, the core units, while on placement, or post degree.

*[Conclusion or future]*

It can be inferred from this data that ITE programs are likely to be most effective in preparing adaptable teachers if there are activities that include the three aims of identity, capacity and awareness, that a suite of activities are provided, and that they are raised in the both the core and method units.

## **Workshops**

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## **Proposal**

What is the problem? (eg. Problem that got you involved in the program, eg. Student engagement, low enrolments in senior science).

What the workshop will do and how it relates to the problem?

What the audience will do. Ensure an interactive experience.

**Example 3**

**Inter-disciplinary practical activities for the natural sciences: Using practical work to support big questions in science**

*[What is the problem?]*

In secondary schools, the natural sciences can tend to be taught as discrete topics that are discipline based. This simplification and uniformity of teaching content enables deep exploration of the disciplinary concepts through discipline-specific practical activities. However, in order to represent the tendency for scientists to work in multi-disciplinary teams and highlight the relevance of science and mathematics to everyday life, there is a need to design practical activities that incorporate concepts and practices from a number of disciplines.

*[What the workshop will do and how it relates to the problem.]*

The proposed workshop provides an opportunity for educators to experience and undertake some of these multi-disciplinary practical activities and collaborate with others on designing real-world problems or contexts that would benefit from such practical activities.

*[What the audience will do.]*

This workshop consists of three parts. In the first part of the workshop, we will provide a theoretical basis for how to use practical work inclusive of a range of disciplines. In the second part, the participants will undertake experiments and consider their application within broader contexts and science and mathematics curriculum. The third part of the workshop will involve roundtable discussions of:

* the value of using practical work generally
* the use of practical work to support the development inter-disciplinary knowledge and skills
* how to increase the learning gain of students from practical work; and
* propose further contexts and real-world problems that might be inclusive of a range of disciplines and the practical work that might support the learning.