ALURE Project

Implementer's Checklist - Support for Students

Design and Logistics

Support for Students

Motivation and Value

Evaluation

THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

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Office for Learning & Teaching
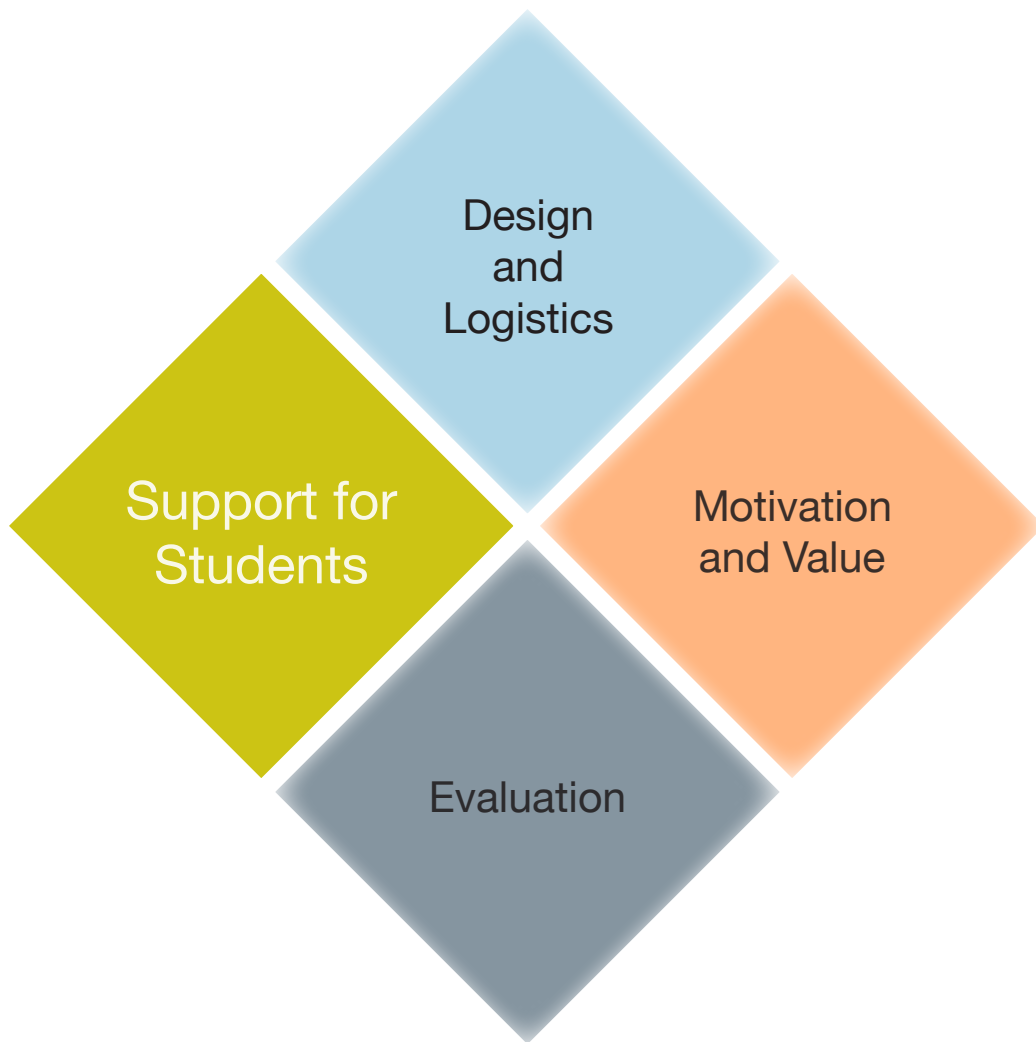
What is an ALURE?

An ALURE is an Authentic Large-scale Undergraduate Research Experience. An ALURE offers the opportunity for large numbers of students to engage in an authentic research project within the curriculum. Authenticity is central to the ALURE experience and is achieved by providing students with the opportunity to think and act as they would in the real world, perhaps through designing their own research questions, contributing to a larger research project, or producing assessment items of an authentic nature. The research question itself underpins the ALURE. In an ALURE students are often working in groups. They work on a real project with an unknown answer.
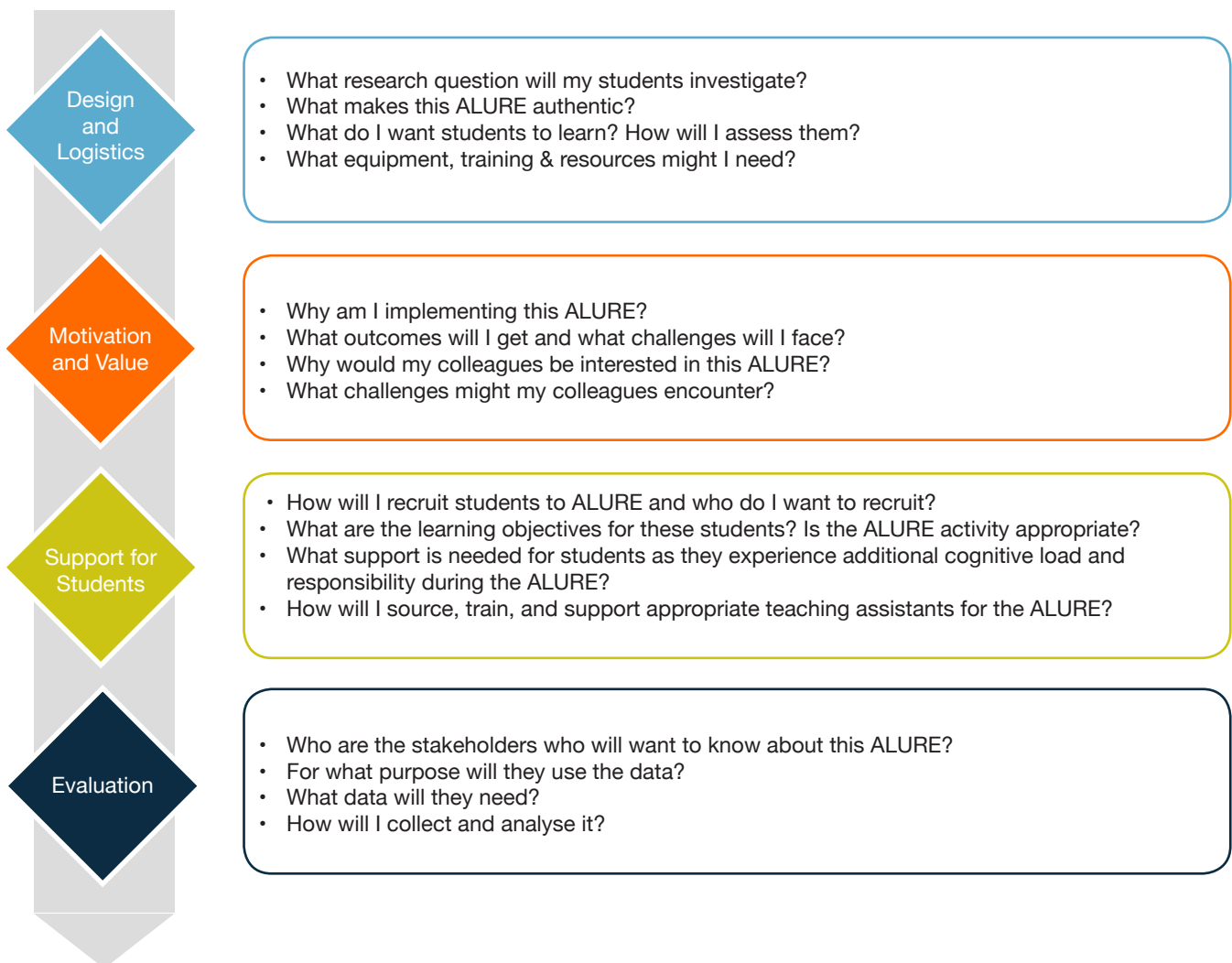
How to use this checklist?

In total there are four Implementers Checklists designed to assist you to design, implement and evaluate an effective ALURE for your students, in your context. The checklists are structured around four elements key to a successful and sustainable ALURE:

- Design and Logistics: how to design an ALURE and some logistics to consider.

- Motivation and Value: why you want to run an ALURE and possible advantages.

- Student Support: how best to support your students to succeed with their ALURE

- Evaluation: why you should evaluate and some tools to consider.

Each checklist is an active and engaging document, designed to prompt you to think, reflect, write and plan. The checklists have been developed following interviews with successful ALURE implementers and are an evidence-based outcome of an Office of Learning and Teaching (OLT) research project.

The following "Implementers Checklists" are available:

Design and Logistics
- What research question will my students investigate?
- What makes this ALURE authentic?
- What do I want students to learn? How will I assess them?
- What equipment, training & resources might I need?

Motivation and Value
- Why am I implementing this ALURE?
- What outcomes will I get and what challenges will I face?
- Why would my colleagues be interested in this ALURE?
- What challenges might my colleagues encounter?

Support for Students
- How will I recruit students to ALURE and who do I want to recruit?
- What are the learning objectives for these students? Is the ALURE activity appropriate?
- What support is needed for students as they experience additional cognitive load and responsibility during the ALURE?
- How will I source, train, and support appropriate teaching assistants for the ALURE?

Evaluation
- Who are the stakeholders who will want to know about this ALURE?
- For what purpose will they use the data?
- What data will they need?
- How will I collect and analyse it?

Myatt, P., Worthy, P., Green, M., Lawrie, G, Pedwell, R., Wang, J., Zimbardi, K., Rowland, S. (2015) ALURE Implementer's Checklist: Support for Students. Sydney: Office for Learning and Teaching.

Start-up

- ALUREs can be mandatory or opt-in, depending on the diversity and pedagogical needs of the students served.
- ALUREs that address real-world problems are more likely to engage students in authentic research.
- Designing other learning activities (e.g., lectures, tutorials) around the ALURE will also improve the alignment of the learning experience.

How will I recruit and engage students who are interested in the ALURE?

- Competence in laboratory, analytical, and communication skills are common learning objectives for ALUREs.
- As with other teaching and learning innovations, check the current literature. Research experiences provide a rich learning environment for the achievement of a range of learning objectives.
- ALUREs also facilitate the development of self-organization, experimental design, and inquiry-driven planning.

What Learning Objectives (LO) do I want students to work towards in the ALURE?

- ALUREs can vary from guided-inquiry (students can choose from a limited set of experimental parameters) to open inquiry (students can choose research question and methodology).

- The level of control afforded to students within the ALURE depends on the cohort size, resources, and the year-level of the unit or course.

- Often in the first iteration of an ALURE, some form of guided-inquiry is recommended to restrict the scope and resource implications.

How much control will students have over experimental design and inquiry in the ALURE?

- Authentic research is difficult; the data obtained is often unpredictable and difficult to interpret without competence in quantitative skills and reading scientific literature

- Explicit skill-building modules offered both during class-time (e.g., lectorials) and as online resources are needed for extra support

- Organised interactions with academic mentors and laboratory demonstrators are also very helpful for students.

How will I prepare and support students for the additional cognitive load involved in the ALURE?

- In the "Design and Logistics" Implementers Checklist, authentic research was defined as being acheived through:
  - collaborating with a colleague with a real-world research project that is scalable for large student numbers.
  - developing a new project that has a real-world application.
  - a research project of interest to a real audience (e.g., a research scientist, an individual farmer, a government body, a public interest group, or even the students themselves.)
- An authentic research experience enhances student engagement.

Consider, are your students receiving an authentic research experience?
How are you maintaining this authenticity and how are the students made aware of this?

Tutors & Demonstrators

- Laboratory teaching assistants will need additional training, especially if they have not led inquiry-based classes before
- The academic mentors should be on hand for this training to explain the experimental parameters students are expected to modify
- Tutor to student ratios can be as high as 1:20 (ratios of 1:12 or 1:15 are more managable). The viability of high-ratio classes depends on the skill-levels of the students, teaching-assistant experience, the layout of the teaching laboratory, and the design of the ALURE.

Are tutors or laboratory demonstrators available for the ALURE?

How many of them will I need, and do they require additional training?

Think back to the assessment students will be asked to complete. Will they require any additional support to complete that assessment? If yes, what kind of support?

Will the tutors/demonstators require any additional training or resources to be able to support students when completing the assessment?