

ASSURING STEM EDUCATION: DATA, CURRICULUM QUALITY ASSURANCE AND SCHOLARSHIP



ACDS Fellows
Tina Acuña
Jo-Anne Kelder

ACSME workshop
2 October 2020

A typical schedule of activities by degree coordinators for HESF compliance

QUALITY ACTIVITIES CYCLE

Quality Assurance activities required for unit and degree level curriculum compliance

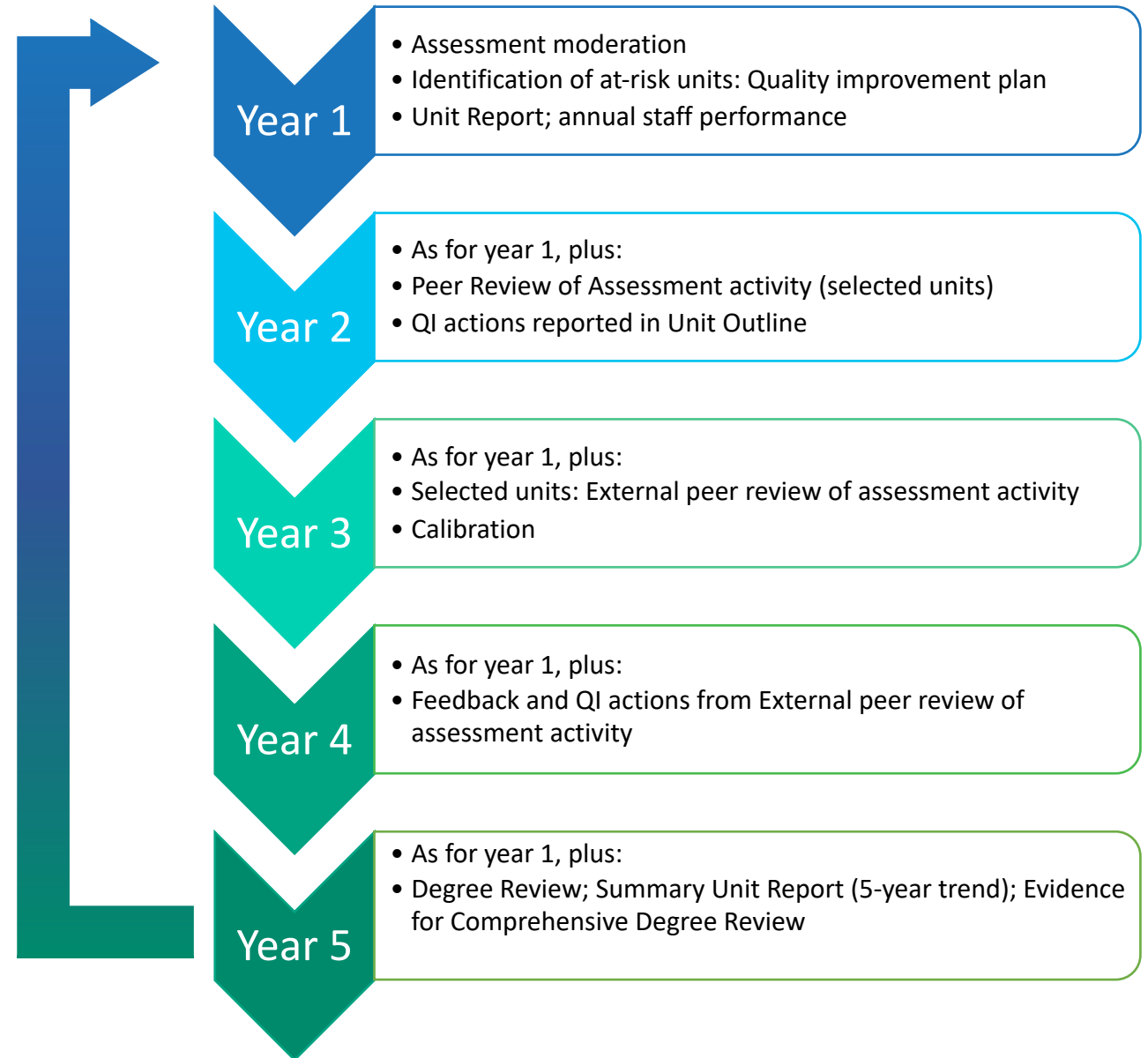
DATA AND EVIDENCE

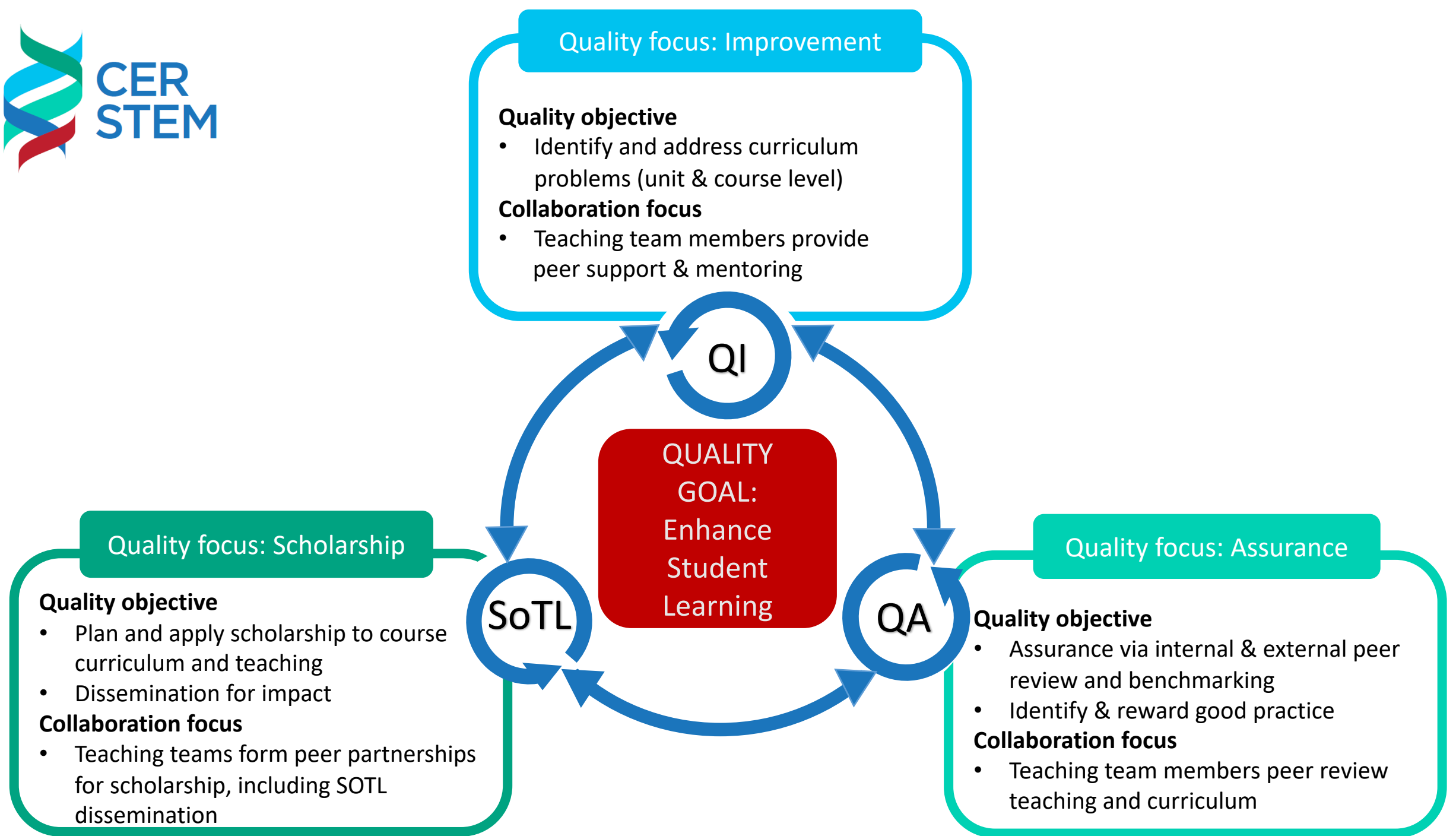
Generated in the process of developing, delivering, reviewing and improving unit level curricula

REPORTING

Reports related to institutional compliance (HESF)

Quality Cycle for institutional comprehensive degree reviews

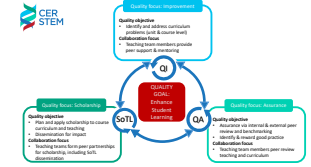




Two claims

1. Scholarship (according to TEQSA):
 - Is non-negotiable, must be evidenced and supported by the institution
 - Involves every member of the teaching team
 - Is essential for quality curriculum
2. Curriculum, Evaluation and Research (CER; CER-STEM) is a framework and resources that:
 - Facilitates a positive culture of ongoing and routine scholarship within a degree team
 - Focusses on enhancing student learning for the specific curriculum
 - Enables collaborative scholarship that is visible, measurable and reportable

First: a Covid-19 “What if?”



- **What do you wish you had in place when the crisis came?**



A Covid-19 “What if?”

A resilient system for curriculum design, delivery and evaluation

- a practical and efficient method for ensuring coordinated quality activities
 - related to a course
 - enables individual and collective outputs
 - results in quality improvement, quality assurance and scholarship
- well-established practices of routine evidence collection
 - relevant to institutional requirements for strategic alignment, quality assurance of curriculum
 - informed by national standards
- planning for scholarship (practice focus) that includes SoTL (dissemination focus)

Let’s discuss using TEQSA Guidance Note: Scholarship as a lens

https://jamboard.google.com/d/1EuWTz1_3KGu-d5sJTJzXDIFY7ARLDqntdQaQ92B_P_I/edit?usp=sharing

Strategies for:

- Embedding evidence into STEM education decision-making, curriculum design, development, and delivery
- Identifying questions that focus *scholarly* attention on
 - quality improvement (issues and innovations),
 - quality assurance against standards and
 - student learning and engagement (impact and effectiveness of curriculum over time).
- Identifying the types of data that should be routinely collected and analysed

https://jamboard.google.com/d/1EuWTz1_3KGu-d5sJTJzXDiFY7ARLDqntdQaQ92B_P_I/viewer?f=5

Example ethics application

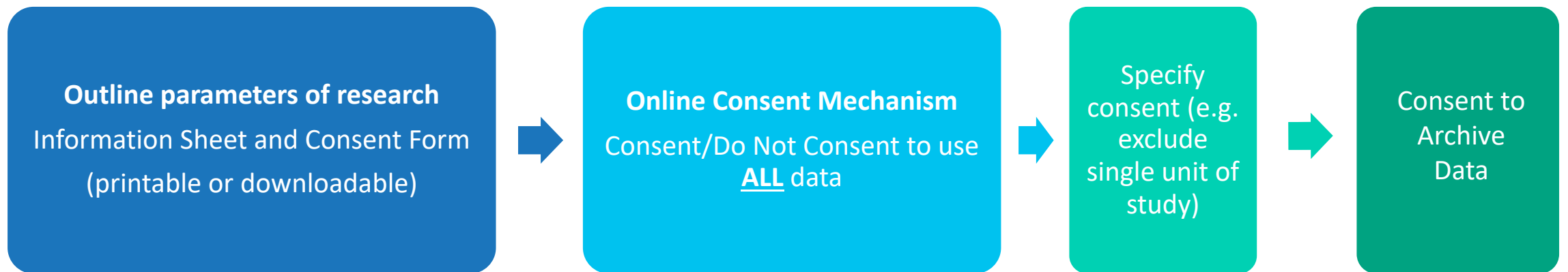
What it provides:

Codified ethical reasoning consistent with *National Statement*

- Consistent structure for designing evaluation and research into a course, including example:
 - research questions
 - pedagogy for blended/online teaching
 - literature on which to base research approach
- Method for selection and recruitment of students and staff
- Protocols for establishing consent
- Protocols for data management

Flow chart for participant consent

Degree Level Consent with ability to specify Unit Level Consent



Don't forget Staff (academic/professional) Consent

Data management

- *Collecting and organising* your data sets:
 - For each subject: draw down from LMS **after** final grades released (assessment task submitted by students, feedback surveys, final grades, discussion posts ...)
 - Organise data sets – how? (an opportunity for STEM!!)
- *Who* will manage the data sets and *how*:
 - Big data set expertise?
 - Ethical requirements
 - Resourcing – minimising manual data handling

Online Resources



EXAMPLE DOCUMENTS

- Ethics application for a course (including information and consent)
- Project and research management
- Research plan
- Action plan

DIAGRAMS

TEMPLATES

- Action plan
- Research proposal
- Workshop PowerPoint and running sheet

EXPLANATORY DOCUMENTS

- Presentation
- CER framework: structure and process elements

<http://www.acds-tlcc.edu.au/cer-stem/>

Thank you

Contact us to discuss how we can help you.

Tina.Acuna@utas.edu.au

Jo.Kelder@utas.edu.au

