

ALTC

Discipline Support Strategy

for Engineering & ICT



DSS

The ALTC has funded ACED, in collaboration with ACDICT, to formulate and implement a long-term plan to support quality teaching in the disciplines of ICT and Engineering.

The Discipline Support Strategy was built directly on the outcomes of two ALTC discipline-based scoping studies: Engineering (2008) Information and Communications Technologies (2009).



Outcomes of the Discipline-based Scoping projects

Common areas of concern

- student attraction and motivation, reducing attrition, continuing low enrolments of women, and the need for gender-inclusive curricula;
- the need for greater engagement of the curriculum (including its design) with industry practitioners, more effective work integrated learning;
- adoption of best-practice pedagogy based on student-centred active learning with real-world (authentic) examples;
- adoption of high quality student assessment, linked to well-defined learning outcomes;
- support of academic staff to improve their understanding and implementation of best-practice teaching in higher education.

Outcomes of the Discipline-based Scoping projects

Specific to

- ICT

understanding and strengthening the “teaching-research-industry-learning” nexus.

- Engineering

greater sharing of staff and laboratory resources and best-practice experience between engineering schools.



Outcomes to be addressed

Activities to support the engineering and ICT academic communities will contribute to outcomes in all areas listed in the ALTC Discipline Support Strategy Guidelines:

- Commitment by discipline leaders to drive learning and teaching change agendas
- Identification of issues and priorities for the disciplines and plans of action
- Embedding of outcomes of ALTC-funded projects
- National benchmarking arising from whole of discipline activities supported by councils of deans
- Increased capacity of discipline and other groups to share resources relating to ALTC-funded projects and activities.

Activities

- Working with ACED
 - (AaeE) & Discipline Scholars
 - major activity – workshops on ‘improving practice’ for academic staff
- Working with ACDICT
 - (ALTA) & Discipline Scholars
 - major activity – compilation of resources for ICT academics
- Support for ACED ‘engineering education leaders’ and ACDICT/ALTA ‘education leaders’ at their annual meeting/forum



Workshops

The first workshop (in two 2-day parts with homework) on *Improving Practice in Engineering Education* aimed to:

- engage participants interactively to engage with *student-centred teaching and learning skills and strategies* within an engineering context;
- *model* those strategies within the workshop sessions in order that participants better understand what they look like, how they are implemented and also how they are experienced by learners; and
- offer opportunities for participants to *practice* and develop such skills and strategies through immediate feedback and discussion during the workshop sessions.

Workshop feedback

- More on “*learning theory*” to provide a more solid basis for their teaching:
 - Addressing theoretical **learning models** and importantly how those models are expressed in teaching and learning contexts
 - Designing curriculum for learning outcomes
 - Designing experiences for student engagement
 - Designing assessments to identify learning outcomes

DSS –supported workshops

2011

- in Qld (Brisbane)
 - trial for ICT & Eng together
- NSW
- SA

2012

- WA (?)
- regional Qld (?)



Resource development: DSS web site

- Problems of not duplicating resources available and maintained elsewhere

BUT

- Issues with accessibility of ALTC project artefacts & with ALTC Exchange
- What about other projects their 'owners' are prepared to share?
- What about expertise not disseminated widely?

Resource development: DSS web site

- Development of database of ICT/Engineering projects – specifically targeting
 - non-ALTC collaborative projects
 - internal/local projects
- Development of database of expertise in Eng/ICT education -
 - to make it easier to locate people with similar educational research interests for collaborative work, funding etc

Resource development: DSS portal

Aim is to provide introductory material and access to resources for each of these broad areas [some already in production on the web site]:

- student attraction and motivation, reducing attrition
- continuing low enrolments of women, and the need for gender-inclusive curricula;
- the need for greater engagement of the curriculum (including its design) with industry practitioners, more effective work integrated learning;
- adoption of best-practice pedagogy based on student-centred active learning with real-world (authentic) examples;
- adoption of high quality student assessment, linked to well-defined learning outcomes;
- support of academic staff to improve their understanding and implementation of best-practice teaching in higher education.