

Developing the Ability to Generate Ideas

What are graduate attributes?

Graduate attributes are the characteristics, qualities, skills and capabilities that we seek to develop in our students by the time they graduate. These attributes give ECU graduates a competitive advantage in the workplace and are desired 'Employability' skills. ECU's graduate attributes are developed within the context of units in a course.

ECU's Graduate Attributes

ECU Graduates will be valued for their	Exemplified by
Ability to communicate	clarity of written and spoken expression, including in public fora, and through appropriate use of technology
Ability to work in teams	collaborating and contributing effectively in diverse settings
Critical appraisal skills	planning, organising, problem solving and decision making
Ability to generate ideas	having the courage and confidence to be creative and innovative
Cross-cultural and international outlook	engaging productively and harmoniously with diverse cultures

What is involved in idea generation?

The ability to generate ideas involves a combination of divergent and convergent thinking processes. It usually starts with a phase of divergent thinking, focusing on the ability to generate numerous different ideas; but needs to be followed by a phase of convergent thinking to evaluate, structure, organise and put these ideas into action.

The most well-known aspects of idea generation skills were developed by Paul Torrance, resulting in the Torrance Test of Creative Thinking (TTCT, 1984). They are:

- fluency: the ability to generate numerous ideas to the same stimulus or problem
- flexibility: the ability to generate different types of responses
- originality: the novelty or newness of the ideas
- elaboration: the amount of detail involved in the ideas

How do I develop this attribute in my students?

The potential of activities to promote students' creativity and innovation skills is enhanced by teachers framing projects around a significant and engaging question. The question should arouse students' curiosity in order to engender spontaneity and creativity. In answering the question, students' confidence can be enhanced.

Below are a few further suggestions for developing your students' ability to be creative and innovative.

- Embed the explicit teaching of divergent and convergent thinking strategies into course content.
- Embed the development of creative thinking skills through using Problem-Based Learning (PBL). This approach involves teaching methodologies that develop a student's knowledge, abilities, and skills through working on authentic (work-based) problems.
- Construct projects and assessments with open-ended tasks and activities that promote novel solutions and ideas.
- When setting problem-solving challenges, encourage students to develop multiple solutions to a set problem.
- Teach students problem identification as well as problem solving strategies. This will develop their skills in spotting opportunities or potential problems before they occur, as well as developing a rich repertoire of different strategies to resolve problems.
- Ask "what if ...?" questions and encourage students to generate their own "what if ...?" questions. provides a facility for sharing good practice in benchmarking.
- Teach students to connect different ideas in imaginative ways.
- Encourage students to develop metaphors – it is a very useful tool in enabling the development of new or novel ideas.
- Set tasks that require exploring, discovering, imagining or experimenting.
- Teach students how to experiment with alternatives and to adapt ideas as circumstances change.
- Encourage students to question their own and others' assumptions – this often leads to new ideas.
- Develop the skill of using known objects, ideas or solutions in unusual ways.
- Encourage quantity of ideas and initially suspend judgement about the quality. There are good ideas and bad ideas, but no such thing as an idea without value. Even a bad idea can have the value of sparking off a good idea. (If ideas are judged too early it could diminish the courage of students to contribute future ideas.)
- Teach, practise and assess the four rules of brainstorming by Osborn (1953): focus on quantity, withhold criticism, welcome unusual ideas and combine and improve ideas.
- Model creativity through your teaching.

Provide clear criteria or rubrics for assessing the ability to generate ideas, e.g. fluency, flexibility, originality and elaboration.

Where can I learn more about ECU Graduate Attributes?

If you'd like to learn more about including ECU's graduate attributes in your teaching, or any of the points outlined in this fact sheet, you can:

- Look out for Professional Development opportunities (all teaching staff are introduced to the Graduate Attributes in PDC 111)
- Read the examples included in the CLD Curriculum 2012 example booklet
- Contact the Centre for Learning and Development for advice.

Recommended reading

Centre for Learning and Development Publications:

- ECU Curriculum Framework – Examples for Teachers
- Course Coordinator Handbook - An Introduction to Course Coordination

Halpern, D. (1998). Teaching critical thinking for transfer across domains: Dispositions, skills, structure training, and metacognitive monitoring. *American Psychologist*, 53(4), pp.449-455.

Harper, S. R., & Quaye, S. J. (Eds.). (2009). *Student engagement in higher education: Theoretical perspectives and practical approaches for diverse populations*. New York: Routledge.

Joubert, M.M. (2002) *Challenging Convention: Creativity in Organisations*. London: Royal Society for the Encouragement of Arts, Manufactures and Commerce.

Joubert, M.M. (2010). EXCITE – EXcellence, Creativity and Innovation in Teaching and Education. In *Imagine That!* (eds. Williams, C. & Nolan, V.) USA, Massachusetts: Synectics Inc.

Osborn, A.F. (1953) *Applied imagination: Principles and procedures of creative problem solving*. New York, NY: Charles Scribner's Sons.

Torrance, E.P. (1984). *Torrance Tests of Creative Thinking*. Scholastic Testing Service, Inc.