

MODULE SPECIFICATION PROFORMA

Module Title: Science, Technology and Creative Thinking	Level: 5	Credit Value: 20
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Module Code: EDC520	Cost Centre: GAEC	JACS3 Code: X300
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Trimester(s) in which to be offered: 1/2	With effect from: September, 2015
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Office use only: To be completed by AQSU:	Date approved: September 2015 Date revised: - Version no: 1
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Existing/New: New	Title of module being replaced (if any): EDC415 Creativity, Technology and Scientific Thinking
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Originating School: Social and Life Sciences	Module Leader: Duane Chong
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Module duration (total hours) 200	Status: core/option/elective (identify programme where appropriate): Core - BA (Hons) Education and Childhood Studies
Scheduled learning & teaching hours 40	
Independent study hours 140	
Placement hours 25	

Programme(s) in which to be offered: BA (Hons) Education and Childhood Studies	Pre-requisites per programme (between levels): None
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Module Aims: To raise awareness of creativity, technology and scientific thinking when working with children, young people and families.

Intended Learning Outcomes

At the end of this module, using academic writing conventions, including Harvard referencing, students will be able to:

1. Critically evaluate the concepts of creative, technological and scientific thinking.

2. Examine how creativity, technological and scientific thinking are included within National Curricula.
3. Using appropriate learning/teaching strategies and resources, plan for experiential opportunities to promote development in these areas of learning.
4. Critically reflect on factors conducive to fostering creativity, technological and scientific thinking among children and young people.

Assessment:

Resource and report: produce, use and evaluate a resource/activity designed to promote creativity, technological and scientific thinking in children aged 3-7 or 8-11. The written element will include a rationale (discussion of concepts related to creative, technological and scientific thinking and justification for the pedagogical approach taken); a lesson plan (links made to curricula); and a reflection on the use of the resource and factors conducive to fostering creativity, technological and scientific thinking.

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting	Word count (or equivalent if appropriate)
1	All	Practical	100%	c4,000

Learning and Teaching Strategies:

Sessions will comprise of the presentation of information, case studies, practical activities, external speakers, review of DVD material and peer group discussion. Students will be expected to make full use of the University's library and VLE to enhance their study.

Syllabus Outline:

- Definitions of creativity, technological and scientific thinking, including the significance of international research & perspectives
- Reflect upon preconceived ideas of creative, technological and scientific thinking
- Factors needed to foster creativity, technological and scientific thinking
- Sustainability and recycling
- Creativity, technological and scientific thinking in for example: art, architecture, sculpture, engineering, dance, drama, music, poetry, English, maths
- The role of the practitioner in developing creativity, technological and scientific thinking
- Curricular frameworks that promote creative, technological and scientific thinking (e.g. Foundation Phase/Stage; National Curriculum Key Stage 2; international curricula)

Bibliography

Essential reading:

Cross, A. and Bowden, A. (2009), *Essential Primary Science*. Maidenhead: Open University

Dunn, M. and Peacock, A. (eds.) (2014), *Primary Science: A Guide to Teaching Practice*. Second Edition. London: Sage

Kelly, L. and Stead, D. (eds.) (2014), *Inspiring Science in the Early Years: Exploring Good Practice*. Maidenhead: OUP.

Learning Wales (2015), *National Curriculum Subjects: Programmes of Study set out the Welsh Government's Requirements for Subjects in the National Curriculum for Wales*. Cardiff: Welsh Government.

Wilson, A. (ed.) (2009), *Creativity in Primary Education*. Second Edition. Exeter: Learning Matters.

Other indicative reading:

Asoko, A. and de Bóo, M. (2008), *Representing Ideas in Science*. Revised Edition. Association for Science Education.

De Bono, E. (2009), *Lateral Thinking: A Textbook of Creativity*. Reissued Paperback Edition. London: Penguin

Duffy, B. (2006), *Supporting Creativity and Imagination in the Early Years (Supporting Early Learning)*. Second Edition. Maidenhead: Open University Press.

Feasey, R. (2009), *Jump Start Science*. London: David Fulton Publishers.

Goldsworthy, A. and Ponchaud, B. (2010), *Science Enquiry Games*. Sandbach: Millgate House Education Ltd.

Keogh, B. and Naylor, S. (2007), *Spellbound Science*. Sandbach: Millgate House Education.

Kinney, L. and Wharton, P. (2008), *An Encounter with Reggio Emilia: A Child's Early Learning Made Visible*. London: Routledge.

McGregor, D. (2007), *Developing Thinking, Developing Learning: A Guide to Thinking Skills in Education*. Maidenhead: Open University Press.

Robinson, K (2009), *The Element: How Finding your Passion Changes Everything*. London: Penguin.

Robson, S. (2012). *Developing Thinking and Understanding in Young Children: An Introduction for Students*. Second Edition. Abingdon: Routledge.

Simister, C.J. (2007), *How to Teach Thinking and Learning Skills: A Practical Programme for the Whole School*. London: Paul Chapman Publishing.

Welsh Assembly Government (2007), *Why Develop Thinking and Assessment for Learning in the Classroom?* Cardiff: WAG.

Journals:

Jeffrey, B. and Craft, A. (2004). Teaching creatively and teaching for creativity: distinctions and relationships. *Educational Studies*, 30(1), pp. 77–87

Web-sites:

<http://www.creativitycultureeducation.org>

<http://www.earlyyearsmatters.co.uk>

<http://www.teachingtimes.com>