EDED20511 *Contemporary Practices in STEM Education*

Term 1 - 2019

Profile information current as at 12/05/2024 09:59 am

General Information

Overview

Leadership in STEM education is underpinned by a commitment to the growing need for STEM skills in the 21st century context. Leadership capabilities are required of STEM education professionals and recognised as essential for ensuring quality learning outcomes for children, the development of high quality STEM skills, the ongoing growth of the profession and the considered implementation of policy and change agendas. Education in STEM will equip all students with the knowledge to navigate critical activities and challenges within the contemporary world. In this unit, you will examine the policy context that shapes STEM education nationally and internationally and the multiple ways in which leadership is theorised. You will conduct a case study of the leadership of a change agenda explicating the key insights and learnings about leadership and leading change.

Details

Career Level: *Postgraduate*
Unit Level: *Level 8*
Credit Points: *6*
Student Contribution Band: *7*
Fraction of Full-Time Student Load: *0.125*

Pre-requisites or Co-requisites

Co-requisite: EDED20497 Leadership in the School Context
Important note: Students enrolled in a subsequent unit who failed their pre-requisite unit, should drop the subsequent unit before the census date or within 10 working days of Fail grade notification. Students who do not drop the unit in this timeframe cannot later drop the unit without academic and financial liability. See details in the Assessment Policy and Procedure (Higher Education Coursework).

Offerings For Term 1 - 2019

- Online

Attendance Requirements

All on-campus students are expected to attend scheduled classes – in some units, these classes are identified as a mandatory (pass/fail) component and attendance is compulsory. International students, on a student visa, must maintain a full time study load and meet both attendance and academic progress requirements in each study period (satisfactory attendance for International students is defined as maintaining at least an 80% attendance record).

Website

This unit has a website, within the Moodle system, which is available two weeks before the start of term. It is important that you visit your Moodle site throughout the term. Please visit Moodle for more information.

Class and Assessment Overview

Recommended Student Time Commitment
Each 6-credit Postgraduate unit at CQUniversity requires an overall time commitment of an average of 12.5 hours of study per week, making a total of 150 hours for the unit.

Class Timetable

Regional Campuses

Bundaberg, Cairns, Emerald, Gladstone, Mackay, Rockhampton, Townsville

Metropolitan Campuses

Adelaide, Brisbane, Melbourne, Perth, Sydney

Assessment Overview
1. **Written Assessment**
Weighting: 40%
2. **Case Study**
Weighting: 60%

Assessment Grading
This is a graded unit: your overall grade will be calculated from the marks or grades for each assessment task, based on the relative weightings shown in the table above. You must obtain an overall mark for the unit of at least 50%, or an overall grade of 'pass' in order to pass the unit. If any 'pass/fail' tasks are shown in the table above they must also be completed successfully ('pass' grade). You must also meet any minimum mark requirements specified for a particular assessment task, as detailed in the 'assessment task' section (note that in some instances, the minimum mark for a task may be greater than 50%). Consult the University's Grades and Results Policy for more details of interim results and final grades.

CQUniversity Policies

All University policies are available on the CQUniversity Policy site.
You may wish to view these policies:

- Grades and Results Policy
- Assessment Policy and Procedure (Higher Education Coursework)
- Review of Grade Procedure
- Student Academic Integrity Policy and Procedure
- Monitoring Academic Progress (MAP) Policy and Procedure – Domestic Students
- Monitoring Academic Progress (MAP) Policy and Procedure – International Students
- Student Refund and Credit Balance Policy and Procedure
- Student Feedback – Compliments and Complaints Policy and Procedure
- Information and Communications Technology Acceptable Use Policy and Procedure

This list is not an exhaustive list of all University policies. The full list of University policies are available on the CQUniversity Policy site.

Unit Learning Outcomes

On successful completion of this unit, you will be able to:

1. Critically analyse the nature of change and the role of individuals, teams and systems
2. Critically analyse key policy texts to identify what and how policy shapes the context of STEM education
3. Analyse models of leadership that contribute to the development of STEM education
4. Evaluate a case study of successful change leadership
5. Explicate resources to support the development of leadership capabilities for self and others in the field of STEM education.

Alignment of Learning Outcomes, Assessment and Graduate Attributes

| | N/A Level | Introductory Level | Intermediate Level | Graduate Level | Professional Level | Advanced Level |

Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes				
	1	2	3	4	5
1 - Written Assessment - 40%	●	●			
2 - Case Study - 60%	●		●	●	●

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes				
	1	2	3	4	5
1 - Knowledge	○	○	○	○	○
2 - Communication	○	○	○	○	○
3 - Cognitive, technical and creative skills	○	○	○	○	○
4 - Research	○	○	○	○	○
5 - Self-management					
6 - Ethical and Professional Responsibility				○	
7 - Leadership	○		○		○
8 - Aboriginal and Torres Strait Islander Cultures					

Alignment of Assessment Tasks to Graduate Attributes

Assessment Tasks	Graduate Attributes							
	1	2	3	4	5	6	7	8
1 - Written Assessment - 40%	○	○	○	○			○	
2 - Case Study - 60%	○	○	○	○		○	○	

Textbooks and Resources

Textbooks

There are no required textbooks.

IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)

Referencing Style

All submissions for this unit must use the referencing style: [American Psychological Association 6th Edition (APA 6th edition)](#)
For further information, see the Assessment Tasks.

Teaching Contacts

Linda Pfeiffer Unit Coordinator
l.pfeiffer@cqu.edu.au

Schedule

Week 1 - 11 Mar 2019

Module/Topic	Chapter	Events and Submissions/Topic
Introduction to STEM Education	Details of weekly readings and activities can be found on Moodle.	Online Zoom session Wednesday 10am

Week 2 - 18 Mar 2019

Module/Topic	Chapter	Events and Submissions/Topic
The nature of change	Details of weekly readings and activities can be found on Moodle.	Online Zoom session Wednesday 10am

Week 3 - 25 Mar 2019

Module/Topic	Chapter	Events and Submissions/Topic
Reading policy including marginalised perspectives	Details of weekly readings and activities can be found on Moodle.	Online Zoom session Wednesday 10am

Week 4 - 01 Apr 2019

Module/Topic	Chapter	Events and Submissions/Topic
Changing context of STEM education	Details of weekly readings and activities can be found on Moodle.	Online Zoom session Wednesday 10am

Week 5 - 08 Apr 2019

Module/Topic	Chapter	Events and Submissions/Topic
Leadership and change	Details of weekly readings and activities can be found on Moodle.	Online Zoom session Wednesday 10am

Vacation Week - 15 Apr 2019

Module/Topic	Chapter	Events and Submissions/Topic

Week 6 - 22 Apr 2019

Module/Topic	Chapter	Events and Submissions/Topic
Approaches to leadership	Details of weekly readings and activities can be found on Moodle.	Online Zoom session Wednesday 10am

Week 7 - 29 Apr 2019

Module/Topic	Chapter	Events and Submissions/Topic
Challenges for leadership in a STEM context	Details of weekly readings and activities can be found on Moodle.	Online Zoom session Wednesday 10am **Policy Context (2000 words)** Due: Week 7 Monday (29 Apr 2019) 11:45 pm AEST

Week 8 - 06 May 2019

Module/Topic	Chapter	Events and Submissions/Topic
Taking a systemic perspective on leadership and change	Details of weekly readings and activities can be found on Moodle.	Online Zoom session Wednesday 10am

Week 9 - 13 May 2019

Module/Topic	Chapter	Events and Submissions/Topic
Case studies of leadership and change	Details of weekly readings and activities can be found on Moodle.	Online Zoom session Wednesday 10am

Week 10 - 20 May 2019

Module/Topic	Chapter	Events and Submissions/Topic
The ethical dimensions of leadership	Details of weekly readings and activities can be found on Moodle.	Online Zoom session Wednesday 10am

Week 11 - 27 May 2019

Module/Topic	Chapter	Events and Submissions/Topic
Leaders as researchers	Details of weekly readings and activities can be found on Moodle.	Online Zoom session Wednesday 10am

Week 12 - 03 Jun 2019

Module/Topic	Chapter	Events and Submissions/Topic
Collaborative practices and partnerships	Details of weekly readings and activities can be found on Moodle.	Online Zoom session Wednesday 10am

Review/Exam Week - 10 Jun 2019

Module/Topic	Chapter	Events and Submissions/Topic
		Case Study of successful change project (2,500 words) Due: Review/Exam Week Monday (10 June 2019) 11:45 pm AEST

Exam Week - 17 Jun 2019

Module/Topic	Chapter	Events and Submissions/Topic

Assessment Tasks

1 Policy Context (2000 words)

Assessment Type
Written Assessment

Task Description
Government policy and reports and the broader socio-political context shape the work of STEM teachers/leaders. You are required to provide an analysis of a minimum of two main policies/reports that influence the shape of STEM education. (One of the policies selected for analysis must be from another country). This might include STEM reports, International

PISA and TIMMS reports, an ACOLA report, National Innovation and Science Agenda (Australia), OECD reports such as Engaging the future of STEM (2017), Towards 2020 Priorities for STEM education and careers in Europe, Asia: Promotion of STEM Education – Unleashing Potential in Innovation (2015).

The analysis will identify:

1. The history of the policy/report – so, how and why did it came into being?
2. Was it commissioned? By whom?
3. What assumptions underpin why the report/policy was commissioned/developed?
4. The values/beliefs that are privileged in the policy/report?
5. What is silenced in the text? (minority groups, funding, access to specialists)
6. Impact of the report/policy for your country and for your local context (school and regional setting).
7. Implementation - how the policy/reports connect or disconnect with the socio-political context within your country.

Assessment Due Date
Week 7 Monday (29 Apr 2019) 11:45 pm AEST

Return Date to Students

Feedback on this assessment response will be provided in sufficient time to allow for academic support and advice as necessary to inform students' responses to the next task.

Weighting
40%

Assessment Criteria

- Knowledge and understanding of the current policies and contexts for STEM education including the history, forces that call for change, impact and implementation.
- Evidence of analysis of a minimum of two main policies/reports including one international, which have influenced the emerging need for change.
- Identification and examination of the values privileged and what is silenced within the policies/ reports.
- Explore, identify and articulate emerging issues for leadership and resources that can address the chosen reports/polices' intention in leadership in STEM education.
- Through the evaluation of these policies/reports, identification of suggestions or resources that would improve the future within STEM education.
- Demonstration of appropriate academic writing conventions including acknowledgement of information sources using APA 6th edition referencing conventions.

Referencing Style

- American Psychological Association 6th Edition (APA 6th edition)

Submission
Online

Learning Outcomes Assessed

- Critically analyse the nature of change and the role of individuals, teams and systems
- Critically analyse key policy texts to identify what and how policy shapes the context of STEM education

Graduate Attributes

- Knowledge
- Communication
- Cognitive, technical and creative skills
- Research
- Leadership

2 Case Study of successful change project (2,500 words)

Assessment Type
Case Study

Task Description
International studies, reports and policy texts confirm the importance of strong leadership for supporting the learning and development of students understanding of STEM, for promoting an organisational culture that supports a professional learning community and for the success of change agendas in education contexts. You are to conduct a 'case study' of a person or group of people who have led a successful change within your context or in another education setting. You need to provide a report of your case study identifying key insights and learnings about leadership and leading change. Your report needs to be informed by the relevant literature on leadership and STEM.

It may be important to evidence the claims in your report by documenting some of the processes used during the case study in order to write your report. These would be included as appendices.

Assessment Due Date
Review/Exam Week Monday (10 June 2019) 11:45 pm AEST

Return Date to Students

Feedback on this assessment response will be provided in sufficient time to allow for academic support and advice as necessary to inform students' about their success in meeting the outcomes of this unit

Weighting
60%

Assessment Criteria

- Knowledge and application of leadership theory to identify key features and challenges including organisational culture in STEM settings.
- Identification and examination of the enactment of leadership roles and responsibilities and the processes implemented to create a change.
- Identification and development of a collaborative community of learners and partnerships to accomplish the implementation of the change.
- Analyse and articulate key insights and learnings from the case study that inform future actions for the implementers in this case study and then the sector more broadly.
- Clear identification of legal and ethical issues relevant to the chosen case study and consideration of these issues in subsequent planning and implementation.
- Demonstration of appropriate academic writing conventions including acknowledgement of information sources using APA 6th edition referencing conventions.

Referencing Style

- [American Psychological Association 6th Edition (APA 6th edition)](#)

Submission
Online

Learning Outcomes Assessed

- Critically analyse the nature of change and the role of individuals, teams and systems
- Analyse models of leadership that contribute to the development of STEM education
- Evaluate a case study of successful change leadership
- Explicate resources to support the development of leadership capabilities for self and others in the field of STEM education.

Graduate Attributes

- Knowledge
- Communication
- Cognitive, technical and creative skills
- Research
- Ethical and Professional Responsibility
- Leadership

Academic Integrity Statement

As a CQUniversity student you are expected to act honestly in all aspects of your academic work.

Any assessable work undertaken or submitted for review or assessment must be your own work. Assessable work is any type of work you do to meet the assessment requirements in the unit, including draft work submitted for review and feedback and final work to be assessed.

When you use the ideas, words or data of others in your assessment, you must thoroughly and clearly acknowledge the source of this information by using the correct referencing style for your unit. Using others' work without proper acknowledgement may be considered a form of intellectual dishonesty.

Participating honestly, respectfully, responsibly, and fairly in your university study ensures the CQUniversity qualification you earn will be valued as a true indication of your individual academic achievement and will continue to receive the respect and recognition it deserves.

As a student, you are responsible for reading and following CQUniversity's policies, including the **Student Academic Integrity Policy and Procedure**. This policy sets out CQUniversity's expectations of you to act with integrity, examples of academic integrity breaches to avoid, the processes used to address alleged breaches of academic integrity, and potential penalties.

What is a breach of academic integrity?
A breach of academic integrity includes but is not limited to plagiarism, self-plagiarism, collusion, cheating, contract cheating, and academic misconduct. The Student Academic Integrity Policy and Procedure defines what these terms mean and gives examples.

Why is academic integrity important?
A breach of academic integrity may result in one or more penalties, including suspension or even expulsion from the University. It can also have negative implications for student visas and future enrolment at CQUniversity or elsewhere. Students who engage in contract cheating also risk being blackmailed by contract cheating services.

Where can I get assistance?
For academic advice and guidance, the Academic Learning Centre (ALC) can support you in becoming confident in completing assessments with integrity and of high standard.

What can you do to act with integrity?

Be Honest
If your assessment task is done by someone else, it would be dishonest of you to claim it as your own

Seek Help
If you are not sure about how to cite or reference in essays, reports etc, then seek help from your lecturer, the library or the Academic Learning Centre (ALC)

Produce Original Work
Originality comes from your ability to read widely, think critically, and apply your gained knowledge to address a question or problem