



Showcase Awards Submission 2015

Regional winner

Showcase Awards for Excellence in Schools

Showcase2015
Awards for Excellence in Schools



Queensland
Government



Find X, where x = Maths and Science teachers

Description:

The Teacher Education Centre of Excellence – Benowa Cluster (The Centre or TECE) is a result of collaborative efforts between Griffith University, the Queensland Department of Education and Training (DET) and Benowa State High School and is an enhanced teacher education program for Science, Technology, Engineering and Mathematics (STEM) teachers of the future. This partnership was forged in 2011 with Benowa State High and Benowa State Schools as lead schools, and has expanded to include Merrimac and Helensvale State High Schools in 2015. Benowa State School's involvement concluded with the movement of Year 7 to secondary schools in 2015. The Centre seeks to be the educational equivalent of a teaching hospital and is based on the Stanford Teacher Education Program widely acknowledged as one of the most exemplary worldwide.

Like Stanford, the principles that underpin the partnership with Griffith University are based on ideals founded in evidence-based practice, most important of which is to strengthen the nexus between scholarship, research and clinical practice – engaging preservice teachers with extensive STEM industry experience in an enhanced environment to enable development of effective pedagogies for STEM – making graduates better teachers able to deliver better student outcomes.

The model allows for two days to be undertaken in the school context concurrent with university studies, followed by an intense period in schools. By having school-based days running in parallel with university studies the preservice teachers are able to experience a strong theory-practice nexus, something that is not possible in other programs where university studies are completed prior to school-based experiences. In the partner schools, the preservice teachers are matched with specifically trained and experienced teacher mentors who can make the connections between theory and practice explicit, concrete, observable and demonstrable. From the preservice teacher perspective, this immersion into the teaching of mathematics and sciences very early in their training is highly valued as it gives them a strong sense of the reality of schooling and of STEM education. Developing effective pedagogy through clinical practice is the cornerstone of the Centre.

The Centre was initially funded by the previous federal government through the National Partnership to Improve Teacher Quality (2011-2014), and is one of five Teacher Education Centres of Excellence that the Department of Education and Training (DET) established with this federal money. In 2015, DET continued funding the Centres and is currently conducting a review to determine funding into the future given that the model has demonstrated its value systemically. From its inception, both sustainability and transferability to other contexts have been deliberately embedded. In the TECE, DET has a mechanism that can continue to leverage broader departmental strategies to address STEM shortages and ensure highly capable graduates enter the state school workforce. The investment has been made and the strategies tried, tested and continuously reviewed. There is opportunity to extend and build on the goodwill, infrastructure and personnel already in place at minimal cost and to leverage the federal expenditure that enabled the establishment of the TECE in the first place.

Since the quality of the teacher is the single biggest in-school factor predicting student achievement, (Dinham 2008, Hattie 2009) attracting high quality candidates into STEM teaching and equipping them with the skills to be effective practitioners is at the heart of the intent of the partnership. From commencement our explicit aim has been to identify and recruit those best suited to the teaching profession. We have targeted high performing STEM career changing professionals with successful employment in industry and high achievement in academic study. At interview their motivations and personal characteristics are tested

and assessed to determine their potential suitability to the profession. We look for evidence of commitment to their career change decision, a passion for making a difference in the lives of young people, and resilience.

These people are demonstrably able to engage students with first hand understanding of the relevance of theoretical science and mathematics to real world applications. In negotiating the structure of the program, a number of key considerations were embedded. These included the need for teachers to differentiate learning for the students in their class to ensure that all students were provided with learning experiences that met (and extended) their needs as learners. Data on student learning is central to providing the appropriate learning experiences and preservice teachers are required to design, implement and evaluate their tools for collection of data on student learning. To support the transition into teaching and DET, regular seminars are held that are a compulsory part of the program and are designed to address a twofold aim of work readiness and developing sound pedagogical practices.

Statement:

The Centre runs an intensive professional development program concurrent with university courses and in-classroom experiences with mentor teachers. The purpose of this structured learning is to challenge them to aspire to achieve best practice pedagogy to guarantee successful student learning. The professional learning offered is deliberately situated around key departmental documents, currently the State Schools Strategy 2014-2018 : *Every Student Succeeding* , and it's successor currently in draft form Strategic Plan 2015- 2019 : *Inspiring Minds. Creating Opportunities. Shaping Queensland's Future*, and is collaboratively delivered by a range of experts within and beyond DET, detail of which can be seen in Appendix 1.

The TECE has a long-term commitment to developing teachers who engage their students in authentic scientific and industry contexts that foster curiosity, imagination and knowledge, providing challenging learning experiences. Preservice teachers draw on their research backgrounds and experiences in laboratories and industry to contextualise knowledge being taught. As teachers they create a culture of engaging learning by connecting students with scientists in universities and industry and conducting field trips and other scientific experiences. The expertise of the participating preservice teachers has seen them make an invaluable contribution to the establishment of the Gold Coast Kids' STEM Convention, an initiative of TECE mentor teachers at Benowa, and itself a by-product of the focus on STEM encouraged through the TECE. The preservice teachers have undertaken roles as teacher coaches for participating teams of students and as speakers, judges and workshop presenters. In this, the TECE preservice teachers share their successful practice across classrooms and schools to ensure better outcomes for students. This program was a regional Showcase Award winner in 2014.

The TECE has also established a network of supportive and collaborative STEM education academics who provide professional learning activities for the preservice teachers and mentor teachers as appropriate, most importantly a range of eminent academics from Griffith University with whom the TECE works in close partnership including Professor Donna Pendergast, Associate Professor Cheryl Sim, Dr David Geelan, Dr Harry Kanasa and Dr Kevin Larkin. Wider collaboration comes from a range of institutions, including Monash University Professor Peter Sullivan (Editor, Journal of Mathematics Teacher Education, Immediate Past President of the AAMT, and contributor to the Australian Curriculum in Mathematics), and Canberra University Professor Robyn Jorgensen (Editor in Chief for the Mathematics Education Research Journal). TECE students have actively attended most if not all conferences offered by the Science Teachers Association of Queensland (STAQ) since 2012. At different times both mentor teachers and preservice teachers have won scholarships to attend the national CONASTA Science Education Conference, enhancing their knowledge and experience for the ultimate benefit of their students.

The TECE encourages graduates to embed their engagement in STEM experiences beyond the classroom to the direct benefit of their students. TECE graduates commonly model lifelong learning and scientific

accomplishments to their students – a significant number of TECE graduates are actively engaged in postgraduate and postdoctoral scientific research immediately before and after their (very intensive) year in the Centre, and have published scientific work in STEM fields, and have continued to maintain their currency of knowledge in their respective fields by engaging in professional conferences and maintaining professional industry memberships and accreditations.

Parallel to its focus on developing excellent beginning teachers has been a corresponding emphasis on continually improving the skills and effectiveness of the existing workforce who are the mentors for the preservice teachers. Firstly the focus is to upskill teachers in their capacity to act in the role of mentor, to be able to provide effective feedback and to describe and demonstrate good practice. However, as identified highly performing teachers, the prime expectations of mentors are about pedagogy, specifically

- Quality teaching in the provision of education for all students
- Improving student outcomes
- Integrating ICTs into classroom practices
- Evidence driven differentiated instruction
- Demonstrating effective teaching
- High level pedagogical content knowledge relating to curriculum area(s)

The TECE has an agreed and published role description for teacher mentors and a set of Mentoring Standards which detail and describe professional expectations and behaviours consistent with the Australian Professional Standards for Teachers (APSTs). Regular training and discussion is provided around the APSTs, most recently in March 2015 for mentors from Benowa, Helensvale and Merrimac State High Schools. This full day training was provided by Ass Prof Cheryl Sim, (Coordinator, Initial Teacher Education and Professional Practice, School of Education and Professional Studies, Griffith University) and was focussed on identifying what constitutes evidence that demonstrates achievement of the standards. Additionally all mentors are supported to engage in peer observations, offered expanded opportunities to develop professional practice and provided with an extensive manual that is hyperlinked to resources of a professional nature and designed to engage experienced teachers to self-critique their practice by posing the question : *What are the criteria for good teaching? What would you look for?* The Centre thus supports career and capability development and its work underpins performance development processes.

Outcomes and supporting evidence:

There is considerable evidence to support our assertion that the Centre graduates are engaging their students in STEM and in authentic contexts more effectively than their staffroom colleagues.

Consider the student outcomes illustrated in Appendix 2 which details student achievement in the 2013 end of Semester 2 reporting to parents. This data demonstrates that the students of the first year out Centre graduate outperformed the cohort in every year level 8 through 10. The context was a very large school with cohorts of 400 or more and as many as 16 classes in in each year level. This is a trend identified and confirmed in the examination of the data of a number of graduates in differing contexts. An analysis of the student achievement data of a second TECE graduate in another school replicates this excellent outcome for students (Appendix 3), and is confirmed with data from a third TECE graduate in a third school (Appendix 4)

Another measure of teacher preparedness and capacity to positively contribute to improved student outcomes is to consider DET's employment processes, specifically suitability rating outcomes for preservice teachers and subsequent offers of employment. Appendix 5 shows that DET has offered permanency or long term contracts with a view to permanency to 84% of graduates. These have been outstanding or highly performing preservice teachers, rated in suitability for employment ranking interviews (Appendix 6). This process is currently the only measure DET utilises to select teachers for employment in schools and confirms that TECE graduates are highly valued and perceived by the employer as possessing the skills and dispositions essential to improving student outcomes.

One of the most obvious ways in which to determine the effectiveness of these new teachers is to consult directly with their employers, that is with the principals into whose schools they are appointed. Two forms of data are included here. First, in 2013 the Workforce Futures unit within the Department surveyed employing principals of the initial cohort of graduates as to their preparedness to be effective teachers. Principals were asked to compare the Centre's graduates with other graduates from standard programs across a number of dimensions. These data confirmed that the principals rated the Centre's graduates as better prepared and more effective practitioners than graduates from mainstream programs (Appendix 7).

To further elucidate on these quantitative assessments, during 2014 five principals were interviewed in relation to their employees. The strength of targeting high achieving students with strong content knowledge, and then the value adding through the Centre are aptly summed up by the principal comment:

We teach to the middle and we don't have the capacity to teach to the top. If I take a look at (graduate), she academically is way superior to what I'm getting out of just education courses. She analytically understands the physics involved. Her mathematics is extraordinary ...She can think clearly, she can put things on the board in articulate manner, she's able to be engaging, because she actually has outside external information to base her illustrations on. So I look at that and I go this is exactly what the teaching of maths and science should be about. Executive Principal 1

What can be seen in this comment is the strength of the selection process in terms of the knowledge and dispositions of the graduates. Moreover, the principal is forthright in his claim that the Centre is producing graduates of a much higher calibre than mainstream programs. It was also a common theme in the responses that the graduates were not only developing strong pedagogic content knowledge, they had many other attributes that were highly desirable including teacher readiness, behaviour management and confidence. In their first semester as a teacher, principals commented that the graduates were well ahead of their peers who had undertaken the usual teacher preparation courses.

And across the board [in her teaching], she would be where we would hope someone would be by their third semester of teaching not their first semester of teaching. So much so that we want her to coordinate Year 8 Science next year, which is a year earlier than we might expect. She moved into this team with a lot to add from the first day and a confidence and a willingness to do that. Executive Principal 2

When asked about the value TECE graduates have added to their schools, principals were effusive:

'By far the best program I have had access to'. Executive Principal 2

'I commend you (the TECE) for actually getting those characteristics of what it means to be an effective teacher ingrained in her before she became one. She hasn't made a mistake'. Executive Principal 1

'She was enthusiastic and ready to teach'. Executive Principal 4

'When Learning Intentions were introduced in the school...he took it one step further with success indicators. He is able to identify in his lessons the point at which kids didn't have success. This is a strength in him. Other staff are at first base, with learning intent'. Principal 5

One principal offered that the TECE graduates are adding value systemically:

'... there's a pathway now for young professionals to actually move into the education field but recognising they've got to have the academic rigour to do it – and I think that has come out of your program (the TECE). You are setting aspirational targets for students who are coming through to actually become teachers of the future. It is the likes (of the TECE graduate) who inspire young people to want to do it.' Executive Principal 1

The Centre graduates confidently claim that they and their students have gained substantially from participating in this program (Appendix 8).

I am a fresh teacher, almost half way through my first teaching year. My life completely revolves around the learning and wellbeing of my students. However I say with complete honesty that one of the most important things I have done all term is write this letter of support for the Benowa Teachers Education Centre of Excellence (BTECE). If this program continues I know that that teachers will continue to graduate with the experience, skills and dedication to improve the learning of future generations. I would want my children in the future to have teachers who graduated from a program similar to BTECE.

Jillian Roberts, Helensvale State High School, Former Ecologist and Environmental Rehabilitation officer, 2014 Cohort

I have found that thanks to the TECE program, the things that I experienced ...have given me a wealth of knowledge ... (and subsequently) the students I teach are provided with a teacher who makes far less mistakes, who is able to better differentiate for different learning styles and abilities, who has a better understanding of classroom management, and who is always better prepared for the unexpected.

Kyle Anstey, Merrimac SHS, Former Engineer

The TECE is a vehicle by which DET can directly add value to the preparation of its own future employees. Every principal surveyed by DET in 2013 recognised the TECE graduate teachers as being more committed to state schooling than other graduate teachers. The robustness of the graduates of the TECE is evidenced by their retention and resilience (Appendix 9). Every TECE graduate appointed to DET on graduation has remained teaching in state schools. The Centre has achieved 100% retention (0% attrition) first into second into third year of teaching, compared to 15.2% attrition across the general workforce. Estimates of attrition of STEM graduates are as high as 50% in the first four years (QUT, Watters and Dietzman).

The Queensland Audit Office Report to Parliament (2013) did not find any clear research that identified conclusively why STEM graduates are not attracted into teaching, but clearly the TECE is focused on broad areas of strategy to ensure students are provided with teachers from authentic STEM contexts and who have engaged in applied experiences beyond the classroom. The structure and practices in place are evidence based and because of this the model is both sustainable and transferable.

Education is the driver of both individual and national potential. In modern diversified economies, education has to compete with other sectors for talented candidates with a strong content knowledge, a track record of success in industry or academia and leadership potential – these being the recruitment criterion for entry to the Centre. Research evidence indicates that a clinical practice and evidence- based model of preservice teacher education is best situated to most effectively prepare preservice teachers for the complex role of teacher. As educators we are obligated to provide preservice teachers with the best possible starting point to equip them to deliver the best possible education to their future students.

THE TECE - COLLABORATIVE EMPOWERMENT IN ACTION

Successful learners

TECE preservice teachers are provided with extensive structured professional development to ensure that both they and their future students are successful learners.

This has included workshops on lesson planning, formative assessments, digital pedagogy, supporting positive behaviours, interpreting student achievement data. It includes engagement with the guidance team, student welfare team, year level managers, and speciality teaching teams including French Immersion, Waldorf (previously Steiner), academic and sport excellence, student with special needs, learning support – additional to close involvement with faculty teams and heads of department.

Local decision making

A formal and locally constituted Governance Committee is the decision maker for the TECE and is composed of representatives from the SE region, Central DET, partner schools, Griffith University and the QTU. It meets regularly and as required to guide the operation and provide strategic input into day to day operations and other initiatives.

The graduates' suitability for employment is determined by a locally convened panel and employment offers are subsequently made by regional staffing. Local principals seeking to recruit graduates are in contact with regional staffing and the TECE itself.

From 2011-2014 Benowa State School was a valuable partner with Benowa SHS in the TECE, but this arrangement concluded in 2015 with the move of Year 7 to high schools. In 2015 new partnerships have been created with local schools Helensvale State High School and Merrimac State High School.

Teaching quality

Workshops introduce preservice teachers to the detail and importance of various pedagogical frameworks in use in Queensland state schools. QCAA and panel chairs provide access the professional knowledge necessary to support decisions on assessment design and implementation, along with moderation and verification processes.

The QCT contributes to the seminar program, and the APSTs are specifically addressed. Evidence based teaching practices are observed, discussed, demonstrated through workshops, in classroom experiences, via videos and other online resources, and preservice teachers are actively and consistently challenged to address the learning needs of each student.

Principal leadership and performance

The TECE is drafting a leadership program intended to fast track this elite group of STEM teachers, the alumni of the TECE 2012-2015.

This small but highly capable group have already demonstrated their potential. Many were leaders in their respective professions prior to making the decision to change careers: they held senior managerial and leadership roles in industry, or were owner/operators of their own businesses, or held academic posts in the tertiary education sector.

They are individuals who made a deliberate and considered choice to become educators. These people have already proven that they are high achievers. They are ready to begin the next stage of their careers.

School performance

The TECE graduates are scaffolded in their learning about improving the progress of every student. Using TECE supplied CFTs, the preservice teachers learn about OnePortal, School intranets and the Learning Place – they have access to all DET platforms apart from OneSchool and ID Attend.

In collaboration with their mentor teacher and the HOM they analyse OneSchool achievement data to monitor performance and inform their practice.

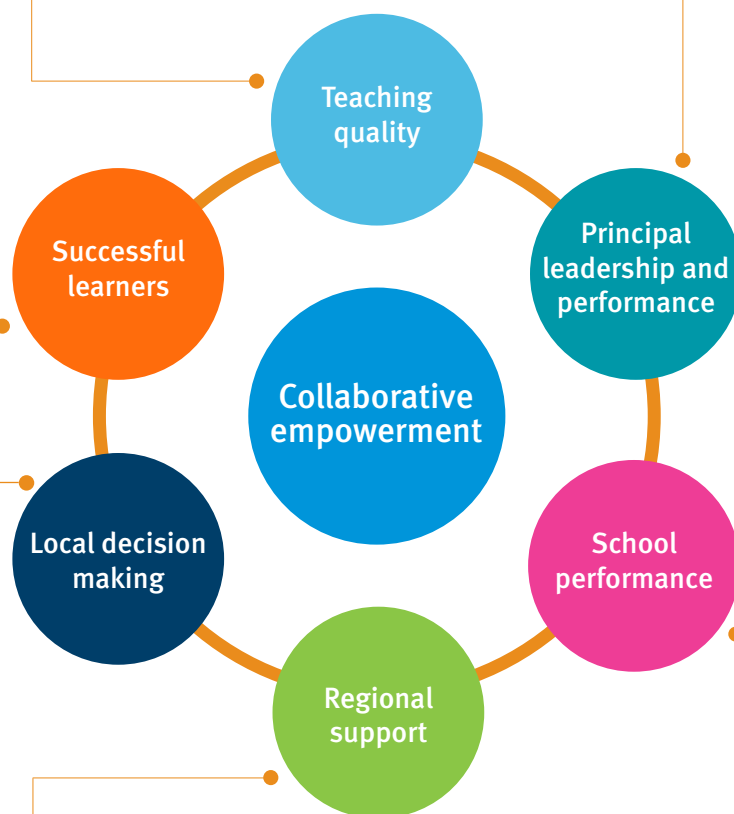
Workshops accessing ASOT Edstudios, the school AIP, and the developing performance processes are provided. Preservice teachers access PLC's, staff meetings, parent teacher interviews and evenings. School specific, regional and statewide priorities and initiatives are actively investigated, so as to develop an authentic and intentional approach to improving the progress of every student.

Regional support

Region have provided support for the TECE since its inception and is represented on the Governance Committee.

The region has extended its commitment to the Employment Agreement offered to TECE graduates meeting strict criteria of excellence, provided assistance in term of TRS and DET employment processes, offered access to expertise (indigenous, numeracy, e learning) and facilitated promotion of TECE initiatives - eg invitation to briefing on ACARA by Professor Peter Sullivan of Monash University to all Maths HODs in the South East.

Most tellingly, Region have established a new TECE at Logan demonstrating the scalability of the model and the collaborative capacity potentially available.



The TECE Making it Happen - Draft Strategic Plan 2015–18

Opportunities arising from the TECE for inspiring minds, creating opportunities and shaping Queensland's future.

EMPOWERMENT

RESPONDING TO CUSTOMERS THROUGH LOCAL DECISION MAKING

A formal and locally constituted Governance Committee is the decision maker for the TECE and is composed of representatives from the SE region, Central DET, partner schools, Griffith University and the QTU. It meets regularly and as required to guide the operation and provide strategic input into day to day operations and other initiatives the TECE undertakes.

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ACCOUNTABILITY

SEEKING AND ACTING ON FEEDBACK

Feedback is regularly gathered from preservice teachers and teacher mentors, analysed and reported on to stakeholders, and acted upon. Several formal papers have been written by Griffith academics including one accepted for presentation to an international STEM educators conference in Vancouver Canada. Most recently the TECE has been invited to present to a Numeracy Summit for Teacher Educators of Mathematics in June 2015.

In response to TECE Alumni feedback, a Leadership Program is currently being prepared for delivery commencing Semester 2 2015 to TECE graduates wishing to fast track their careers.

ALIGNMENT

RECOGNISING THE ROLE OF EACH PART OF THE SYSTEM

Local: Expertise accessed across the partnership in recognition that's practices of excellence are rarely located in one place.

Regional: Support comes through the initiative of the employment agreement and its extension, provision of regional expertise including marketing as required, celebration of achievements through affirmations made by RDs and ARDs at graduation functions, and most recently the decision of region to establish the Logan TECE.

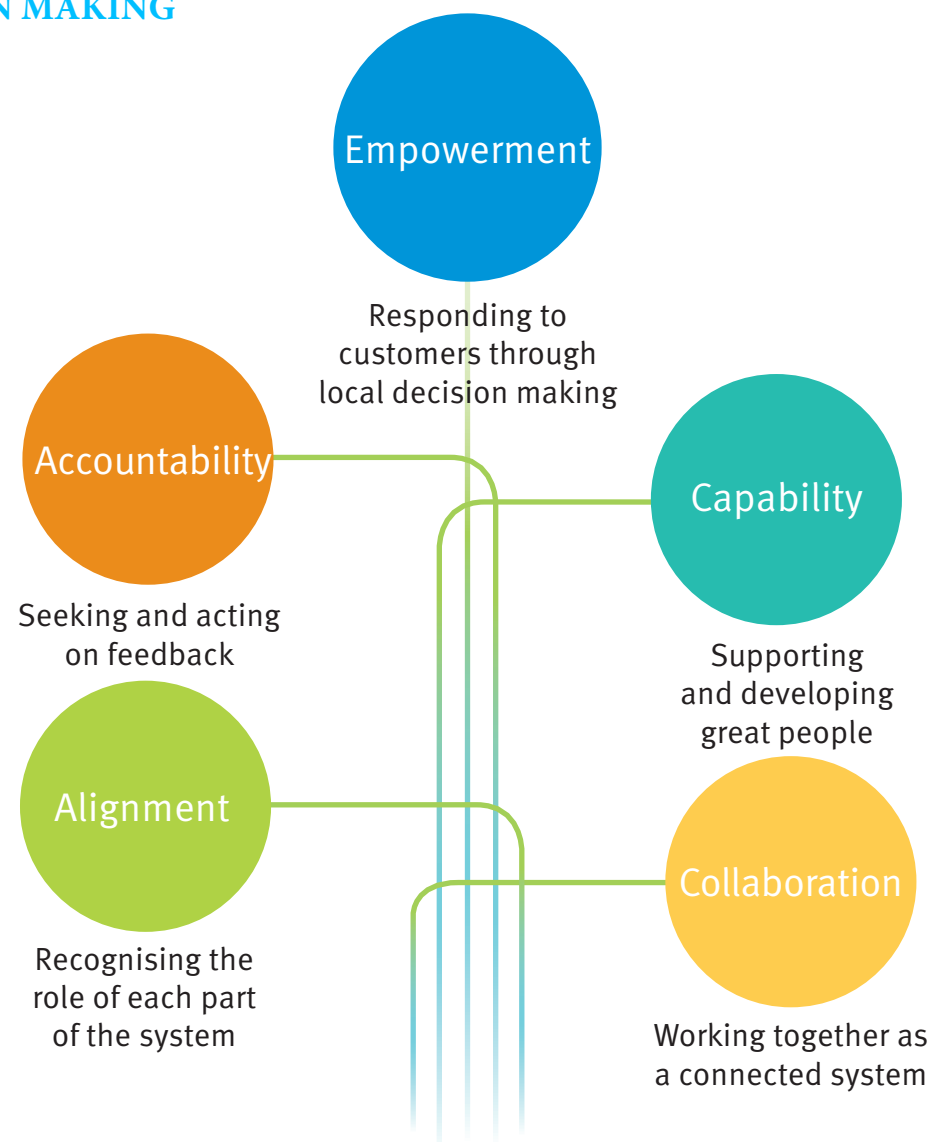
Central: Responsible DET personnel have supported and guided the TECE since commencement, offering specialist advice as needed, collecting and interpreting data, providing forums for critical feedback and impetus for continuous improvement. DET appointed the HOM as the Director General's nominee for University Accreditation Processes for tertiary institutions re accreditation of their teacher education courses.

National: Full day workshop Professor Peter Sullivan of Monash University and coauthor ACARA Maths curriculum for mentors and PSTs was provided within a short time of the documents' release.

HOM invited to participate ACER LANTITE Benchmarking, Melbourne.

TECE made submission in support of Queensland initiative to TEMAG (Teacher Education Ministerial Advisory Group).

International: Stanford University visit (funded by scholarship won by Head of Mentoring) to study best practice teacher education, and participation/ take up by preservice and mentor teachers of Stanford online course How to Learn Math; authored by Professor Jo Boaler.



Making it happen

CAPABILITY

SUPPORTING AND DEVELOPING GREAT PEOPLE

A board range of professional development opportunities is provided for preservice teachers, their teacher mentors, STEM faculties in partner schools and on occasion regional STEM specialists including:

Analysing data to inform maths teaching - Ramon Doon HOD Maths, Windaroo Valley SHS

What's special about teaching Junior Secondary? - Glenn Chippendale DP, Benowa SHS

Survival Skills for Beginning Teachers - Tony Maher Student Behaviour Specialist, Benowa SHS

Inclusive Education - Lieve Rimbaut HOSSES, Benowa SHS

Hidden Histories Crossing Cultures - Janelle McQueen, Local Indigenous Elder
Signature Practices of Junior Secondary - Professor Donna Pendergast Griffith University

Planning Effective Lessons for Learning - Professor Robyn Jorgensen Canberra University

Pedagogical Frameworks - what and why - Kim Alden HOM TECE

Art and Science of Teaching - Mark Rickard, Executive Principal Benowa SHS

COLLABORATION

WORKING TOGETHER AS A CONNECTED SYSTEM

Kids STEM Convention Gold Coast launched and embedded - collaboratively organised by teachers and parents and supported with input from representatives of industry, the tertiary education sector, local government and advice from the parent version in Brisbane.

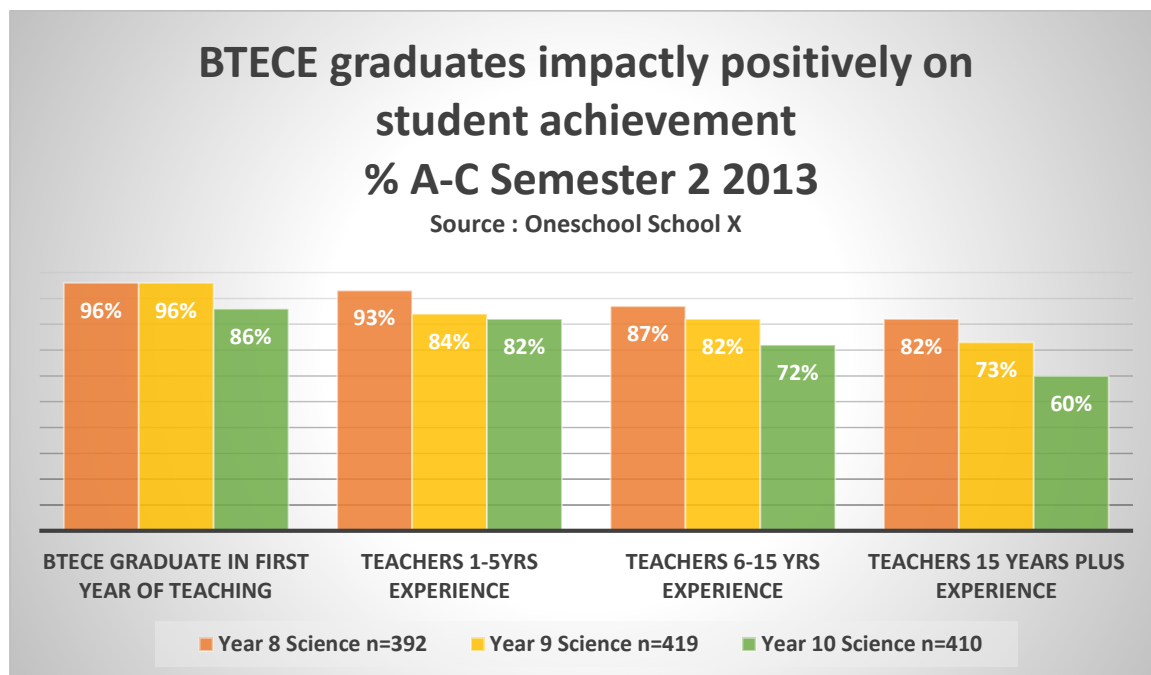
Participation of PSTs in partner schools' activities - for example membership in Professional Learning Communities, access to First Aid training, attendance at student camps and parent teacher evening, inclusion in all opportunities afforded teachers.

Regional Maths HODs briefed on Australian Curriculum by Professor Peter Sullivan, co author of the ACARA Maths Curriculum.

Griffith University: The university has provided ongoing support through the governance committee structure and through the provision of a academic liaison whose work with the TECE contributes to their work allocation. The university's Professional Experience Office and Admissions and Recruitment branch are in close collaboration with the HOM. Additionally the university has provided specific support as needed including a full day workshop for teacher mentors on the Australian Professional Standards for Teachers delivered by Associate Professor Cheryl Sim.

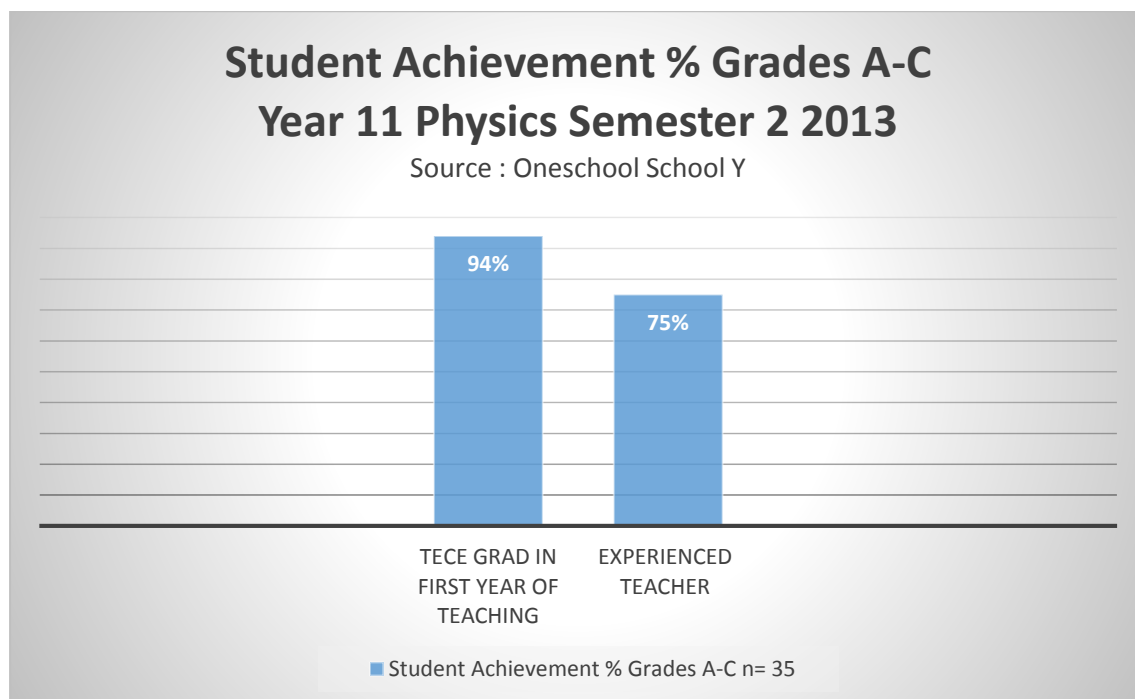
Queensland Teachers Union: has delivered workshops on Legal Issues for teachers, Code of Conduct and child protection legislation.

APPENDIX 2



This data details student achievement in 2013 End of Semester 2 reporting to parents. This data demonstrates that the students of the first year out TECE Centre graduate outperformed the cohort in every year level 8 through 10. The context was a very large school with cohorts of 400 or more and as many as 16 classes in in each year level. This is a trend identified and confirmed in the examination of the data of a number of graduates in differing contexts.

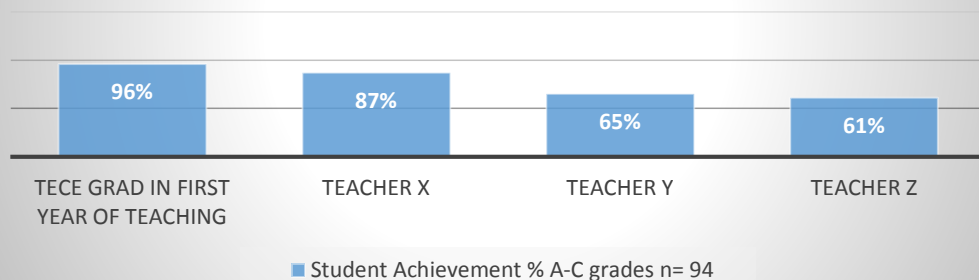
APPENDIX 3



This data demonstrates higher student achievement in the TECE graduates class when compared to a parallel class taught by a more experienced colleague. As a beginner, the TECE graduate's assessment practices were closely supervised and monitored by her colleague and other more experienced people.

Student Achievement % A-C grades Year 10 Preparatory Physics Semester 2 2013

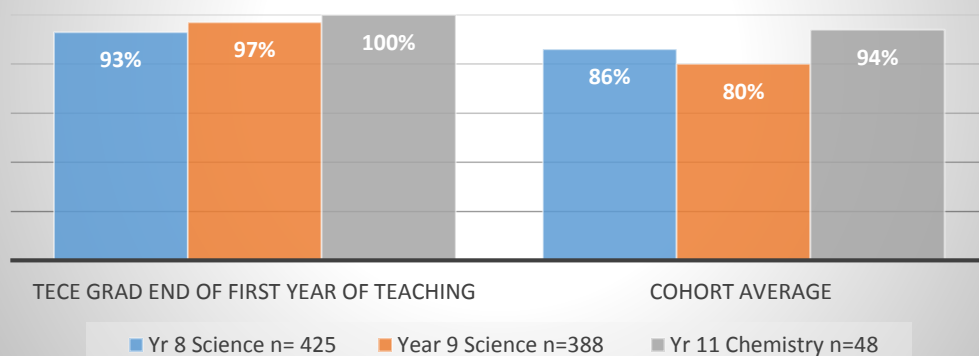
Source : Oneschool School Y



APPENDIX 4

Student Achievement % Grades A-C Science and Chemistry Semester 2 2014 School Z

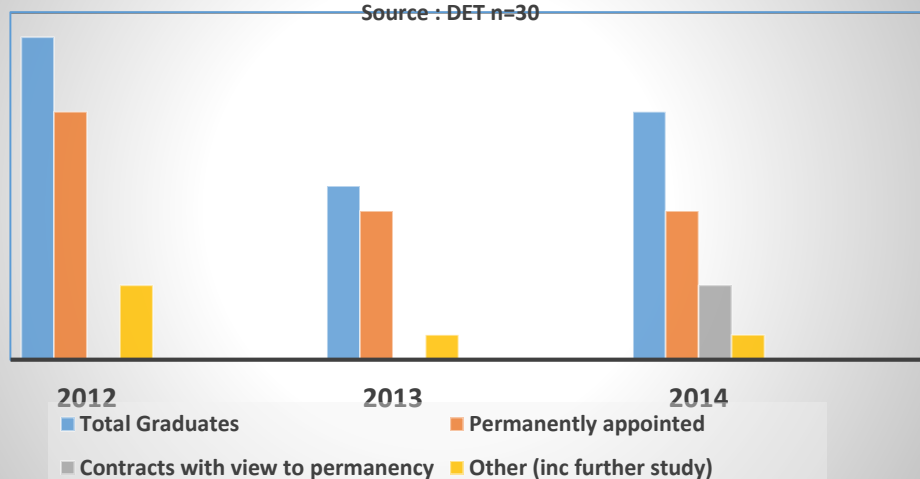
Source : Data supplied by Principal School Z



APPENDIX 5

TECE Employment Outcomes by Cohort

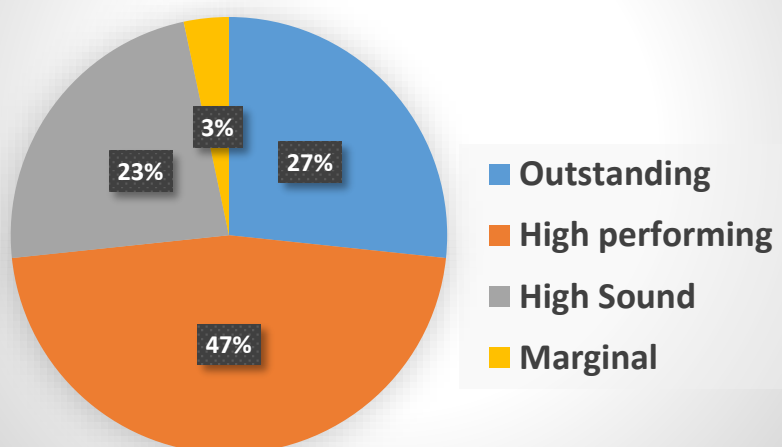
Source : DET n=30



APPENDIX 6

Suitability Ratings for Employment All TECE Graduates 2012-2014

Source : DET n=30

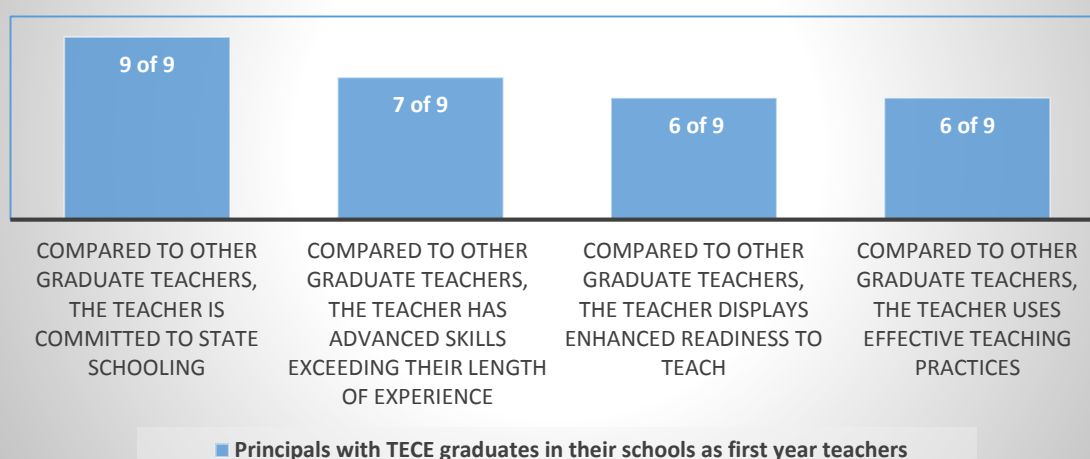


This data indicates that three quarters of all TECE preservice teachers have graduated at an outstanding or high performing level. The suitability panels have been chaired by an exceptionally experienced secondary Deputy Principal at regional request, and Heads of Department in STEM subjects have acted as panellists. None of the panellists have had any dealings with candidates prior to interview.

APPENDIX 7

9 Receiving Principals Assess TECE Beginners in their first Semester 2013

Source : DET Workforce Futures



During 2013 the Workforce Futures unit within DET surveyed employing principals of the initial 2012 cohort of graduates as to their preparedness to be effective teachers. Nine principals responded. Principals were asked to compare the Centre's graduates with other graduates from standard programs across a number of dimensions. These data confirmed that the principals rated the Centres' graduates as better prepared and more effective practitioners than graduates from mainstream programs.

APPENDIX 8

GRADUATE TESTIMONIALS

Simply put, I would not be the teacher I am without it. It helped me to see the bigger picture of the teaching profession and gave clear insight as to what effective teaching and learning looked like.

Kirsten Chapman, Varsity College, Former Chiropractor, 2012 Cohort

The amount that I learnt about how to be an effective teacher was absolutely invaluable and I believe what I learnt will greatly benefit both myself, my students and my school for the rest of my career.

Lauren Morley Miami State High School, Former Laboratory technician, 2013 Cohort

(I was able to) start the school year with a focus on 'knowing my students' and targeting my teaching to their needs.

Lauren Hinchliffe, Palm Beach Currumbin State High School, former Dietician, 2013 Cohort

Without the BTECE experience I don't believe I would have been as confident and competent as a first year teacher and the students I have taught have benefitted enormously.

Debbie Thompson Nerang State High School, former Chartered Accountant 2012 Cohort

I am a fresh teacher, almost half way through my first teaching year. My life completely revolves around the learning and wellbeing of my students. However I say with complete honesty that one of the most important things I have done all term is write this letter of support for the Benowa Teacher Education Centre of Excellence (BTECE). If this program continues I know that that teachers will continue to graduate with the experience, skills and dedication to improve the learning of future generations. I would want my children in the future to have teachers who graduated from a program similar to BTECE.

Jillian Roberts, Helensvale SHS, Former Ecologist & Environmental Rehab officer, 2014 Cohort

I realised very early on that my training was much more comprehensive than the one received by my fellow graduate students and would allow me to be better prepared and a better first year teacher, with a higher pedagogical skill set and higher expectations for my teaching and myself.

Dr Julien Grignon, Ormeau Woods SHS, Former Research Scientist and Academic, 2013 Cohort

Reflective practices promoted by BTECE have given me the opportunity to strengthen the skills I have learnt, whilst incorporating strategies of best practice to improve student outcomes and ultimately promote continuous improvement of each student as an individual.

Nahdia McClymont, Helensvale SHS, Former Environmental Scientist, 2014 cohort

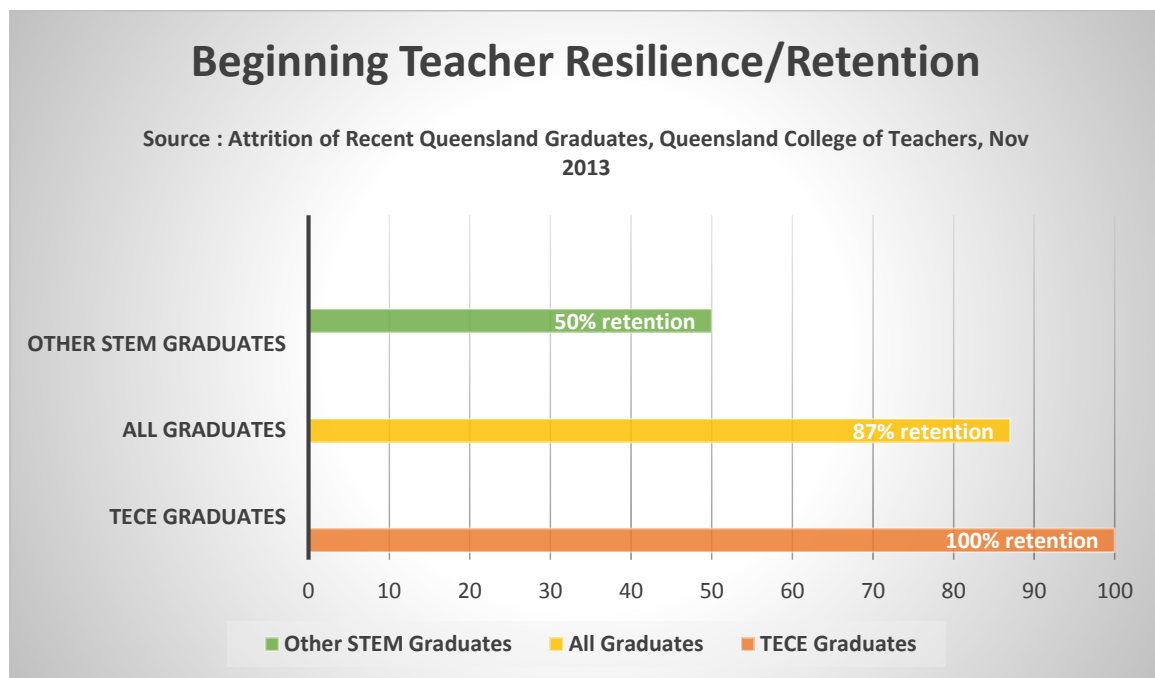
I believe that the TECE program improved the quality of my practice as a beginning teacher, ultimately benefiting my students. (It) allowed me to start the school year with a focus on 'knowing my students' and targeting my teaching to their needs.

Monika Fritzer, Palm Beach Currumbin SHS, Former Pharmacist, 2012 Cohort

(The program) enabled the necessary skills to become the strong and confident teacher that I am today...it allowed me to develop my ability to build rapport with students.. and deliver an authentic curriculum. I would recommend it to any teacher who strives to make a positive difference in their classroom from Day 1 of their career.

Sophie Hoffmann, Laidley State High School, Former Pharmacist, 2012 cohort

APPENDIX 9



Every TECE graduate appointed to DET on graduation has remained teaching in state schools. The Centre has achieved 100% retention (0% attrition) first into second into third year of teaching, compared to 15.2% attrition across the general workforce. Estimates of attrition of STEM graduates are as high as 50% in the first four years (QUT, Watters and Dietzman).



Our Children ~ Our Future

20 May 2015

To whom it may concern

Re: The Teacher Education Centre of Excellence – Benowa Cluster

We would like to acknowledge the unique and very successful Teacher Education Centre of Excellence (TECE) which has been based at our school for the past three years. We fully endorse and applaud this project and offer our support for their 2015 Showcase entry.

We are very pleased to see many obvious, real and quality outcomes for students through Benowa State High's leadership of the TECE. The project has refocussed teacher and student attention on the importance of STEM subjects and the ways in which they are taught. Parents are reporting benefits for their children. For example, the project has enabled the introduction of the STEM Academic Excellence program in junior secondary, and supported initiatives in the senior school around the Griffmaths program. Across the community, the TECE has supported and been a pivotal part of the Gold Coast Kids STEM Convention, itself a Showcase winner in 2014.

The TECE has underpinned a renewal in professional engagement of teachers who teach these important subjects. Teachers have been actively encouraged to examine their own practices and to strive for very best practice in STEM teaching. This raising of the bar has had a direct impact on student engagement and achievement in STEM.

The P&C also acknowledges and appreciates the community support and relationships that have been forged with Griffith University, academics further afield, Benowa State School, Helensvale State High, Merrimac State High, the Queensland Teachers Union, regional DET consultants, the QCAA, and Queensland College of Teachers. It is clear that schools right across Queensland seek TECE graduates as teachers in their schools, and we are rightly proud of the role we at Benowa play in delivering quality teachers to Queensland state schools.

The TECE has the full support of the parents and the local community. We will continue to endorse the staff who initiate and maintain these valuable links and opportunities. We look forward to seeing this program becoming embedded in the curriculum of all teacher education programs.

We commend the Teacher Education Centre of Excellence – Benowa Cluster for consideration in the 2015 Showcase Awards and wish them every success in their achievements.

Yours sincerely

Shane Thomas
P&C President

Letter of support of the BTECE Showcase application

To whom it may concern,

The School of Education and Professional Studies is proud of its four-year collaboration with the Benowa Teacher Education Centre of Excellence. The centre was one of four which set out to build a strong university and school collaboration in an area of demand for teachers, in this case science, technology, engineering and mathematics. The partnership was visionary in its design and intent and began with the leadership of Kim Alden appointed as the Head of Mentoring and Professor Robyn Jorgensen, Professor of Mathematics Education from Griffith University. Dr David Geelan and Dr Harry Kanasa from the School of Education and Professional Studies have subsequently been closely involved with the centre.

The benefits of this collaboration are numerous. From a research perspective, our involvement has allowed us to explore alternate models of initial teacher education with the preliminary data already showing the benefits of such a model in terms of initial teacher confidence and Principals' ratings of the Centre's graduates. From a student perspective, the tightly interwoven nature of the program means the Centre's students are able to take advantage of the theory-practice nexus ensuring their development as beginning teachers is accelerated. And finally, from the University's perspective, it allows us to expand our public profile, connecting with the local community and contributing to education more broadly in the South East corner.

As the Head and Dean of the School of Education and Professional Studies, I thoroughly endorse the Benowa Teacher Education Centre of Excellence, its staff, goals and aims as a site of excellence and innovation.

Yours sincerely

Professor Donna Pendergast.



1 June 2015

The Teacher Education Centre of Excellence – Benowa Cluster (TECE) is a partnership between the Australian and Queensland Governments, Griffith University and three Gold Coast State Secondary Schools. The purpose of the Centre is to graduate teachers of Science, Technology, Engineering and Mathematics (STEM) to state secondary schools. Applicants are high grade point graduates in a range of STEM fields and include Engineers, Pharmacists and a range of PhD students who have chosen a career change to teaching.

The TECE clinical practice model allows the development of the nexus between theory and practice and indeed provides preservice teachers with a year of induction that equips them as graduates with the skills and contextual knowledge that schools as employers are seeking.

The TECE graduates are sought after teachers and their success rate to permanency is high. Evidence shows the TECE teacher graduates perform well in comparison to more experienced teachers on the same sites. These newly graduated teachers arrive to their new schools with a working knowledge of school management systems and student management systems and practices. The transferability of these skills adds to the value proposition of having a graduate teacher on staff.

The TECE model has scalability potential and in 2015, Merrimac State High School and Helensvale State High School joined with Benowa State High School to create the Benowa Cluster. Teachers from across the three schools continue to develop models of practice that have preservice teachers engaging students in Science, Technology, Engineering and Mathematics subjects. The mentor training for school staff has provided benefit in a range of school agendas and has assisted in highlighting strategies to shape our developing workforce.

The employer driven nature of the TECE differentiates it from other teacher training practices in Australia and this feature alone drives it as a program of national significance. For these reasons I endorse the program for its resolve to train the very best teachers for Queensland schools. The student performance data shows significant value adding by TECE teachers and this is testament to the success of the program.

The TECE Governance Committee is a range of stakeholders including the Queensland Teachers Union, DET and Griffith University and this group continues to shape the direction of the project in response to school needs. Expansion of this successful model is inevitable as more schools/systems choose to look at ways of improving teacher effectiveness.

Mark Rickard
Executive Principal
Benowa State High School

Lead Principal: Benowa Cluster