QUEENSLAND MINERALS AND ENERGY ACADEMY

OUTCOMES REPORT

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Queensland MINERALS & ENERGY ACADEMY

2014

EXECUTIVE SUMMARY

Queensland Minerals and Energy Academy

The Queensland Minerals and Energy Academy (QMEA) is a partnership between the Queensland Resources Council, the Queensland Government and many of the largest and most forward thinking resources companies in the world.

In assessing the outcomes of the program, quantitative and qualitative data including participant feedback has been sourced. Quantitative data collected at events delivered in 2014 has been collated, and additional data provided by the Department of Education Training and Employment (DETE) on students who have graduated since 2005 has been extensively interrogated. Analysis of this time series data is presented, however particular attention is paid to the 2013 graduating cohort, i.e. those surveyed in 2014.

Qualitative data has also been gathered from multiple sources, including extensive event evaluations and one on one interviews with industry, principals, key teachers and students.

Quantitative data results

The 'Next Step Destination Survey' results provided by DETE have identified a tendency for a higher proportion of QMEA students to consistently favour apprenticeships, traineeships and employment in the mining sector, or to consistently favour study within engineering and related technologies compared to students in non-QMEA schools.

Diversity trends within these results are pleasing, with a higher percentage of QMEA female students accessing preferred industry pathways compared to non-QMEA students. Also, a higher percentage of QMEA Indigenous students compared to non-QMEA Indigenous students are accessing the industry through a variety of pathways including direct employment.

QMEA achievement 2005- 2014 on average:

- **21.9% of QMEA students entered engineering and related technologies** (13.2% non-QMEA schools). Across all fields of study (bachelor, certificate I-IV, apprenticeship and traineeship)
- **13.1% of QMEA students who entered a bachelor degree did so in engineering and related technologies** (9.9% non-QMEA schools)
- **13.8% of QMEA students who gained apprenticeships were employed in the mining industry** (3.2% non-QMEA schools).
- **9.9% of QMEA students who gained traineeships were employed in the mining industry** (1.4% non-QMEA schools)
- **9.3% of QMEA female apprentices and trainees entered the mining industry** (1.2% non-QMEA schools)
- **7.1% of QMEA employed Indigenous students found employment in mining** (1.8% non-QMEA schools)
- **4.4% of employed QMEA students gained employment in the mining industry,** (0.7% non-QMEA schools)

QMEA achievement 2014:

- Of **students entering all fields of study** (bachelor, certificate I-IV, apprenticeship and traineeship) **20.5% of QMEA students entered engineering and related technologies** (12.5% non-QMEA schools)
- Of **students entering a bachelor degree 13.8% of QMEA students entered engineering or related fields** (9.6% non-QMEA schools)
- Of those **students who were employed as apprentices, 12.6% of QMEA apprenticed students were employed in the mining sector** (3.2% non-QMEA schools)
- Of **students who were employed as trainees, 6.7% of QMEA traineeship students were employed in the mining sector** (1.4% non-QMEA schools)

QMEA Event Analysis

The collation of these results has identified:

- In 2014, more than **2,400 students** engaged directly in QMEA activities and participated in **77 events** across the state.
- Of these **47% were male, 48.7% were female** and **4.3%** were male and female **Indigenous** participants.
- More than **200 industry representatives** participated in activities to support student pathways into industry and increase their knowledge of the sector.
- **150 teachers and pre-service teachers** were involved in teacher professional development activities including workshops, seminars and online webinars.
- **190 QMEA/vocational education and training (VET) pathway students have successfully completed Certificate II in Resources Infrastructure and Workplace Preparation**, which is an entry level qualification favoured by industry.

Qualitative Data results

Event evaluations and one on one interviews with industry, principals, key teachers and students have identified that:

- Students consistently rated the opportunity to undertake team work and to meet new people as the most important or enjoyable aspects of attending a QMEA event.
- Industry participants generally advised that they found attending the QMEA event worthwhile, that the events ran quite smoothly and were conducted in a positive and efficient manner. Industry recommended the need for more guidance on activities through greater teacher involvement and lead in preparation and provision of a more informed overview to understand expectations.
- A selection of principal feedback indicated that:
  - QMEA influenced student pathways by broadening their perception of what is available especially outside their immediate environment.
  - Student engagement in QMEA activities and particularly exposure to industry influenced student choices and provided good articulation into engineering pathways.
  - QMEA assists in keeping students focused on why they are at school and in particular why they need to do maths and sciences.
  - Improvements could be made with increased teacher professional development, TRS funding and opportunities for students and teachers to attend industry conferences.

Communication

Forty-five articles in various media mentioned QMEA. In addition there were five incidents of television coverage. Further to this numerous articles have appeared in industry journals and within school newsletters.

BACKGROUND TO THE REPORT

The QMEA was formed in 2005 and currently works with 34 state, catholic and independent schools across Queensland.

QMEA aims to assist young people start highly rewarding and long term careers in the resources sector, and to aid its industry sponsors in developing their workforce for the future. In addition the activities increase the knowledge and understanding of the resources sector by students and teachers, thereby supporting the industry in achieving its social license to operate objectives.

QMEA events provide students with information about Queensland's resources sector, and support career development for those students who are interested in entering those industries. Opportunities are provided for students who are interested in either the professional and trade streams through curriculum-related activities such as engineering camps, symposiums and forums. In addition, the QMEA recognises achievements of students within Academy schools through the QMEA Student Ambassador program.
The QMEA supports teacher advancement through professional development and the opportunity to use contextualised educational resources that can be accessed through the www.oresomeresources.com website.

The QMEA Board directs the activities of the QMEA which are funded by the industry sponsors with assistance from the Queensland Government.

Purpose of the report

In 2014 the QMEA Board and industry sponsors requested an analysis of available evidence to demonstrate the level of success the program has had in meeting its objectives.

The quantitative and qualitative data presented within this report was derived from a number of sources including:

- The 'Next Step Destination' data provided by DETE;
- Detailed analysis of attendance at QMEA sponsored events in 2014;
- A summary of feedback given by principals and industry sponsors in 2014; and
- Results from individual schools provided on a case by case basis.

These elements are presented in the following sections of this paper.

ANALYSIS OF DETE DATA

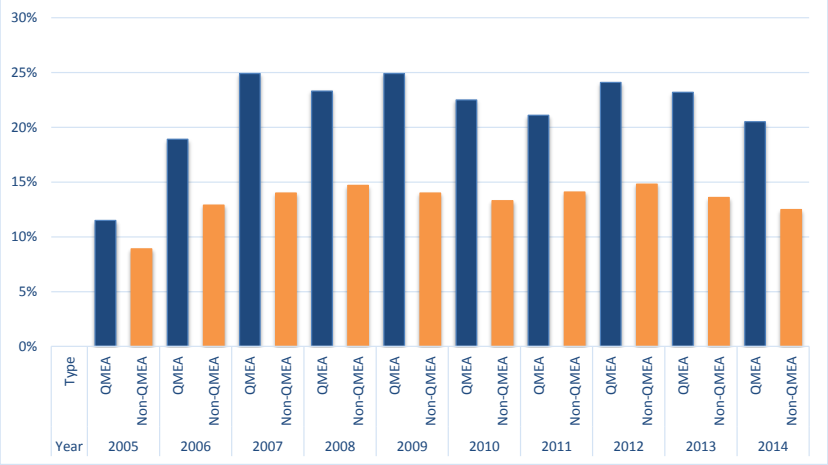
The 'Next Step Destination' survey conducted by the Department of Education, Training and Employment (DETE) is an annual survey of young people who completed year 12 in the previous year. The survey commenced in 2005 and provides information about student destinations six months after leaving school in terms of status of employment and further study, including type and level of course undertaken and type of industry of employment. DETE staff recently concluded the collation of results for 2014 (i.e. the 2013 graduating cohort) and have kindly provided a comparison of data for QMEA schools against non-QMEA schools.

The 'Next Step Destination' survey results provided by DETE have identified a consistent tendency for a higher proportion of QMEA students who found employment to favour apprenticeships, traineeships and other employment in the mining sector. The survey also found across all years that a higher proportion of QMEA students favoured study within engineering and related technologies, compared to students from non-QMEA schools.

Engineering and related technologies study pathway

The survey results demonstrate a consistent tendency for QMEA schools to produce a higher proportion of tertiary students who chose to undertake study in engineering and related technologies than non-QMEA schools. Figure 1 shows an overall comparison between QMEA schools and non-QMEA schools in regards to the proportion of students who entered any field of study for a bachelor degree or certificate I-IV, or an apprenticeship or traineeship in engineering or related technologies.

Figure 1 Percentage of students from QMEA and non-QMEA schools undertaking an engineering or related technology pathway from 2005 to 2014



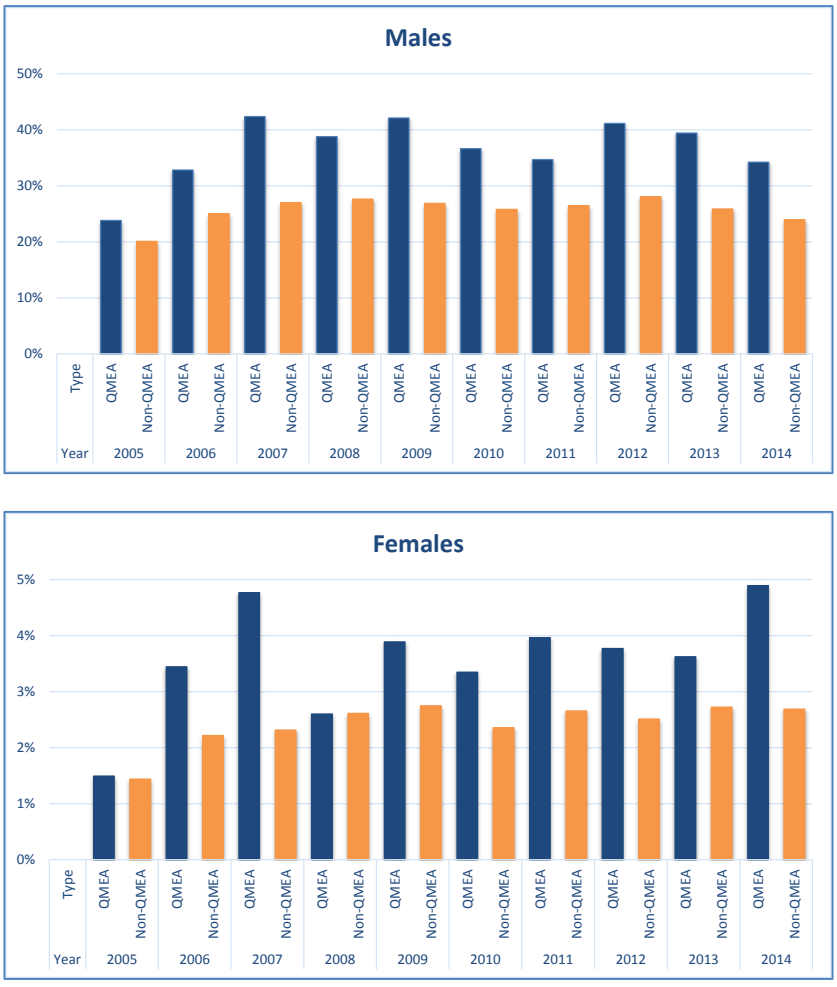
Between 2005 and 2014 an average 13.1% of QMEA students entered a bachelor degree in engineering and related technologies compared to 9.9% of students in non-QMEA schools while across all fields of study (bachelor, certificate I-IV, apprenticeship and traineeship) 21.9% of QMEA students entered engineering and related technologies compared to 13.2% of non-QMEA schools.

Of students entering all fields of study (bachelor, certificate I-IV, apprenticeship and traineeship) 20.5% of QMEA students entered engineering and related technologies compared to 12.5% of non-QMEA students.

Further data revealed, of students entering a bachelor degree in 2014, 13.8% of QMEA students entered engineering or a related field of study compared to 9.6% of students from non-QMEA schools.

Figure 2 shows the percentage of year 12 male and female students from both QMEA and non-QMEA schools who undertook engineering and related technologies study from 2005 to 2014.

Figure 2 Percentage of year 12 male and female students from both QMEA and non-QMEA schools undertaking engineering and related technologies study from 2005 to 2014



Looking at the data illustrated in Figure 2 in greater detail reveals that:

- Between 2005 and 2014 an average of 36.6% of males from QMEA schools chose to study Engineering, compared to 27.5% for non-QMEA schools;
- Between 2005 and 2014 an average of 3.6% of females from QMEA schools chose to study Engineering, compared to 2.4% for non-QMEA schools.

It is worth noting that the overall trend in annual entrance to engineering studies is broadly similar for males from both QMEA and non-QMEA schools. This trend is not as clear for females, which may be due to the effects of an overall smaller sample size; that is, the individual choice of a small number of females will have a greater influence on the overall pattern than the individual choice of a similar number of males.

In particular, the decline in the percentage of males from QMEA schools entering engineering studies over the last three years (from 41.2% in 2012 to 34.2% in 2014) is not reflected in the female sample, which increased from 3.8% to 4.9%. This small sample size effect may in fact be a good indicator of the capacity for the QMEA program to influence decisions at the individual level. This is particularly noteworthy if that influence is encouraging more young women to enter traditionally male dominated fields of study.

While it cannot be inferred that QMEA activities are the sole factor responsible for the reported results, it is certainly heartening for the program to see a consistent over-representation of mining-related employment and tertiary studies being recorded for QMEA students.

Apprenticeships, traineeships and other employment

Figures 3A and 3B show the percentage of employed year 12 students from both QMEA and non-QMEA schools that entered apprenticeships, traineeships, or other full time and part time employment in the mining industry. Between 2005 and 2014 an average of 4.4% of students from QMEA schools gained some form of employment in the mining industry, compared to 0.7% for non-QMEA schools.

Figure 3A Percentage of year 12 students from QMEA and non-QMEA schools that entered apprenticeships and traineeships between 2005 and 2014 that did so in the mining industry

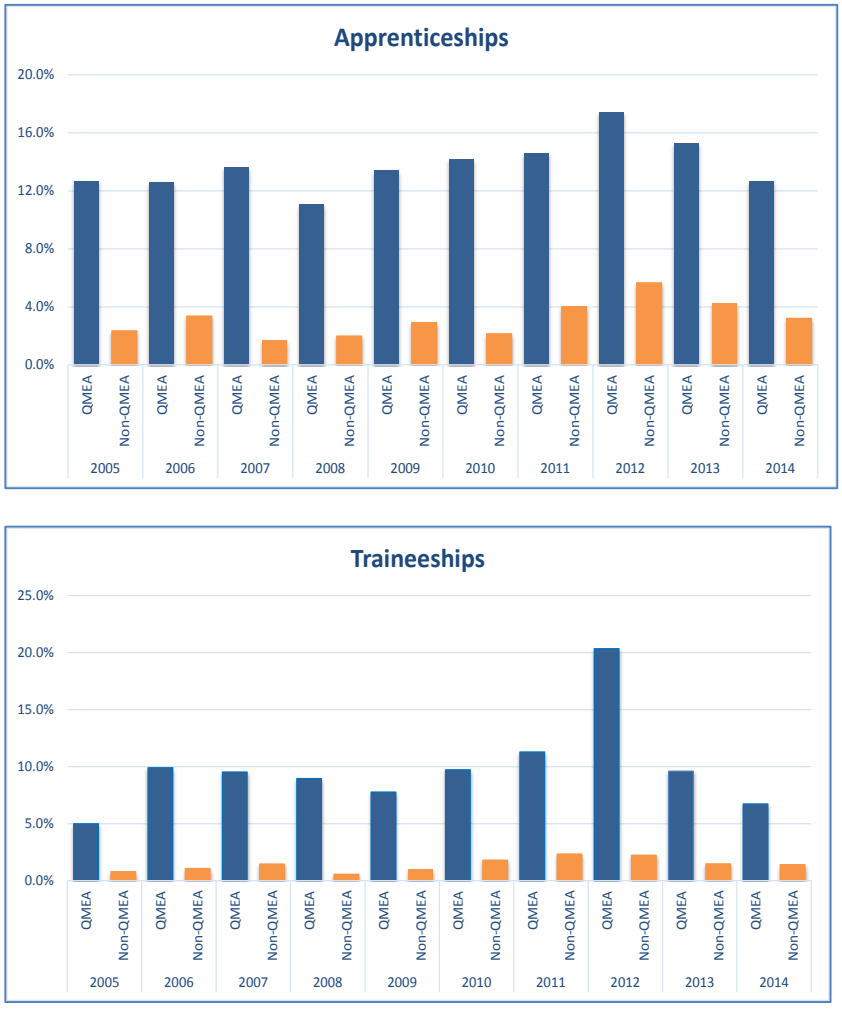
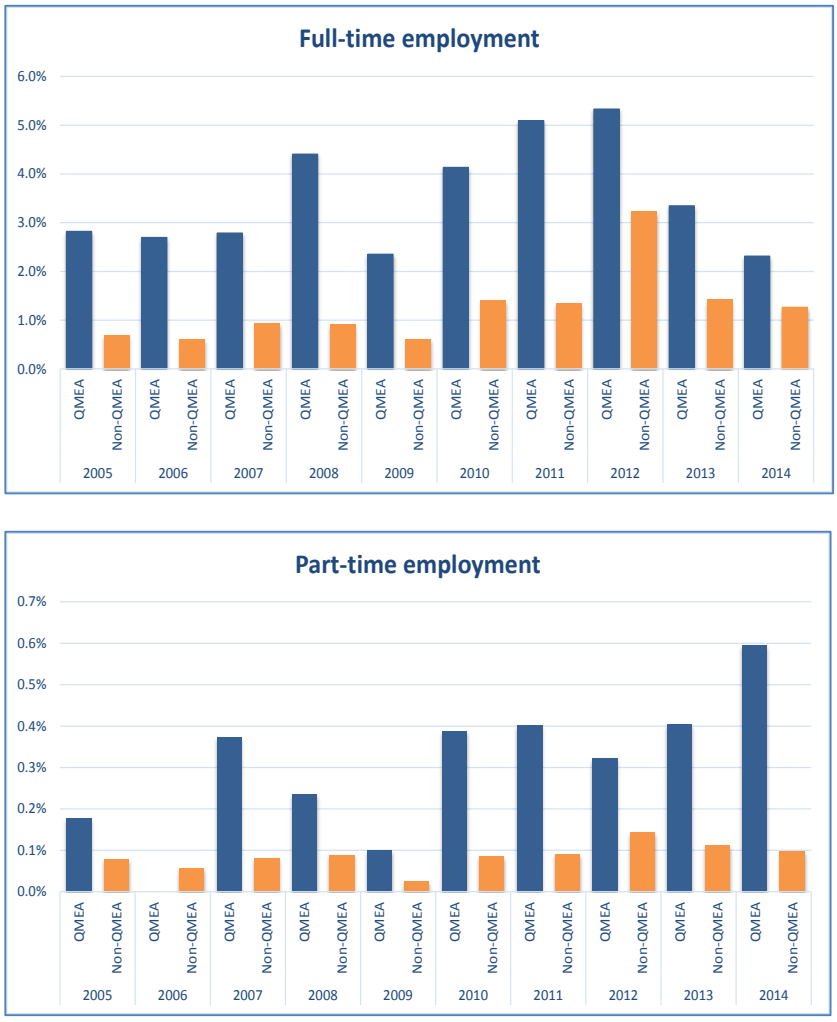


Figure 3B Percentage of year 12 students from QMEA and non-QMEA schools that entered other full time and part time employment between 2005 and 2014 that did so in the mining industry



Looking at the data shown in Figure 3A and 3B for each employment category in greater detail across all years reveals:

- On average 13.8% of students from QMEA schools who gained apprenticeships were employed in the mining industry, compared to 3.2% for non-QMEA schools.
- On average 9.9% of students from QMEA schools who gained traineeships were employed in the mining industry, compared to 1.4% for non-QMEA schools.
- On average 3.5% of students from QMEA schools who gained other full-time employment were employed in the mining industry, compared to 1.2% for non-QMEA schools.
- An average of 7.1% of Indigenous students from QMEA schools who found employment did so in mining, compared to 1.8% from non-QMEA schools.

For 2014 the survey revealed that:

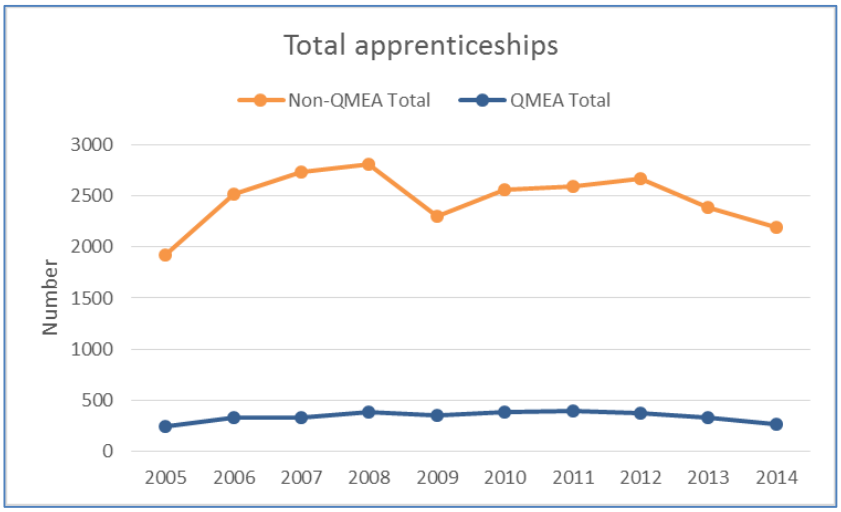
- Of those students who were employed as apprentices, 12.6% of QMEA apprenticed students were employed in the mining sector compared to 3.2% of apprentices from non-QMEA schools. This compares to the peak in 2012 where 17.4% of QMEA apprenticed students were employed in the mining sector and 5.7% were employed in the non-mining sector.

- Of students who were employed as trainees, 6.7% of QMEA traineeship students were employed in the mining sector compared to 1.4% of students from non-QMEA schools. Again the peak in traineeships occurred in 2012 where 20.3% of students who gained traineeships were employed in the mining sector compared to 2.2% in the non-mining sector.

As observed above, while the percentages of apprentices and trainees from QMEA schools entering employment in the mining sector continue to be higher compared to non-QMEA schools, there has been a decrease in those percentages over the last two years. It is worth noting however that apprenticeships and traineeship levels are down across the board (construction, retail, healthcare), with a total of approximately 500 less apprenticeships and traineeships offered to the graduating class of 2013 than to the graduating class of 2011.

Figure 4 shows the total number of apprenticeships that were taken up by students from QMEA and non-QMEA schools from 2005 to 2014. While there are similar trends in annual apprenticeship numbers for QMEA and non-QMEA schools, Figure 4 suggests there may be less fluctuation in the number of apprenticeships taken up by students from QMEA schools.

Figure 4 Total number of apprenticeships taken up by students from QMEA and non-QMEA schools from 2005 to 2014



Diversity comparison of employment results

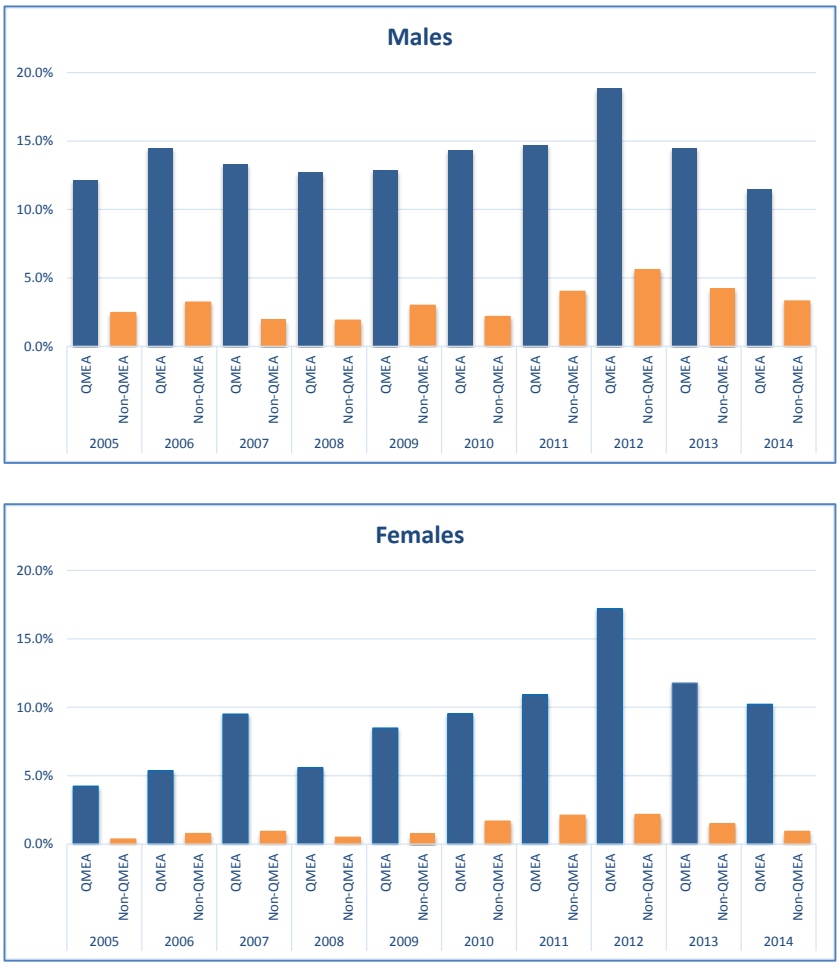
Comparison for male and female students

Figure 5 shows the proportion of those male and female graduates from QMEA and non-QMEA schools who entered an apprenticeship or traineeship that did so in mining. Figure 6 shows the proportion of those male and female graduates who took up other employment (i.e. other than as an apprentice or trainee) that did so in mining.

For QMEA schools across all years an average of 13.9% of male apprentices and trainees entered the mining industry, compared to an average of 3.2% from non-QMEA schools. For QMEA schools an annual average of 9.3% of female apprentices and trainees entered the mining industry, compared to an average of 1.2% from non-QMEA schools. Thus, not only were mining related apprenticeships and traineeships consistently much higher for QMEA schools, this pattern was also more pronounced for females than it was for males. QMEA schools tended to produce about four times the percentage of mining apprenticeships and traineeships as non-

QMEA schools for males; for females taking up mining related apprenticeships and traineeships the QMEA schools outperformed non-QMEA schools by almost eight times.

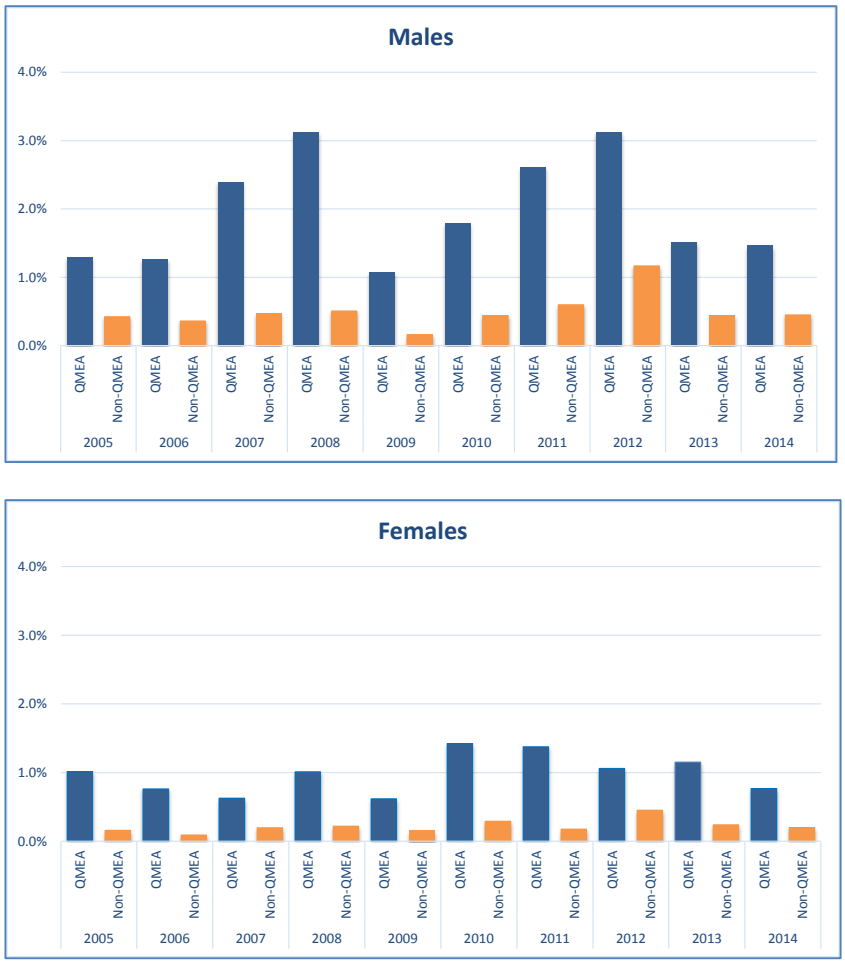
Figure 5 Percentage of males and females who entered an apprenticeship or traineeship that did so in mining



For QMEA schools across all years an average of 2% of males who entered employment other than as an apprentice or trainee did so in the mining industry, compared to an average of 0.5% from non-QMEA schools. For QMEA schools an average of 1% of females who entered other employment did so in the mining industry, compared to an average of 0.2% from non-QMEA schools. Not only are these figures much lower overall than for apprenticeships and traineeships, there is also far less gender-based difference in the proportion of QME and non-QMEA school leavers taking up employment in mining. These results are reflective of the fact that the most common way for a school leaver to enter the mining industry is as an apprentice or trainee compared to other forms of employment.

The consistent pattern for QMEA schools to have a higher proportion of those graduates entering employment doing so in the mining industry is an excellent result for the program. The fact that a far higher proportion of girls from QMEA schools enter the industry as apprentices and trainees than do girls from non-QMEA schools is an even better result as it demonstrates that the program is helping to break down some of the gender stereotyping of mining. In making this point it should however be acknowledged that the total number of female graduates entering the industry is still relatively low overall.

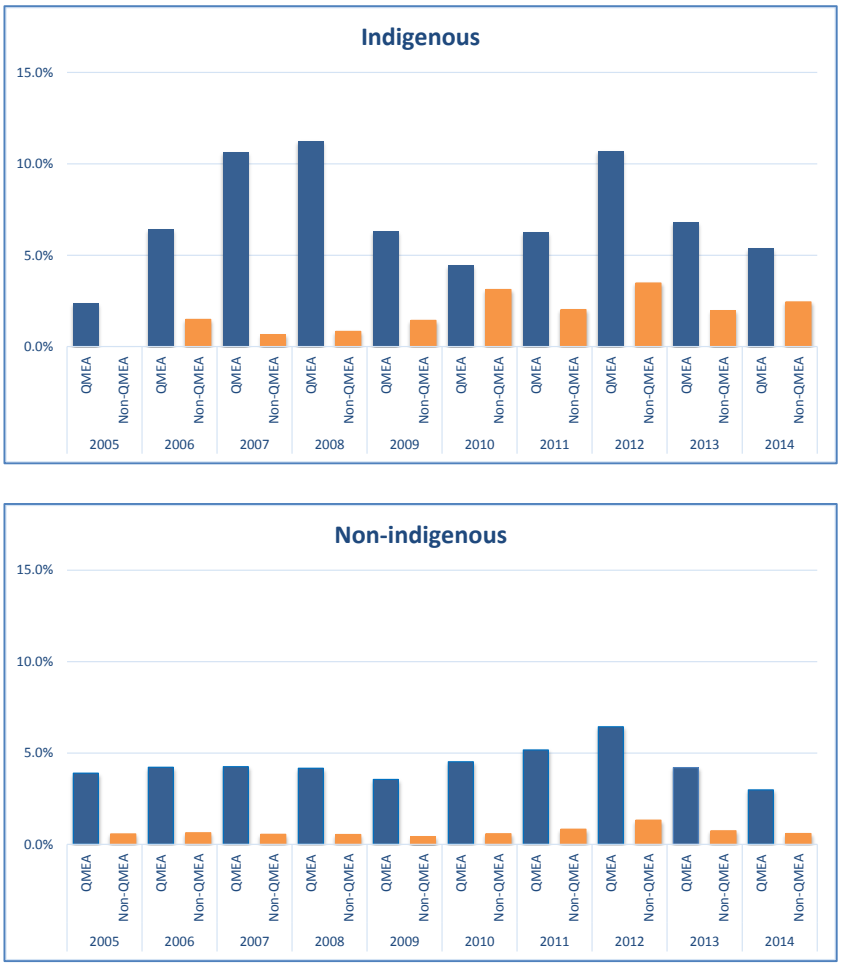
Figure 6 Percentage of male and female graduates from QMEA and non-QMEA schools who entered other employment (i.e. not in an apprenticeship or traineeship) that did so in mining



Comparison for Indigenous and non-Indigenous students

Figure 7 shows the percentage of Indigenous graduates from QMEA and non-QMEA schools entering employment that did so in the mining industry. An average of 7.1% of Indigenous students from QMEA schools that found employment did so in mining, compared to 1.8% from non-QMEA schools. This compared to an average of 4.3% of non-Indigenous students from QMEA schools and 0.7% from QMEA schools. It is an excellent result for more than three times the rate of Indigenous students from QMEA schools to find employment in the mining industry than for Indigenous students from non-QMEA schools. It is also an excellent result to note that Indigenous students from QMEA schools were almost twice as likely to find employment in mining as non-Indigenous students, when expressed as a percentage of the total number that had found employment.

Figure 7 Percentage of Indigenous and non-Indigenous graduates from QMEA and non-QMEA schools entering employment in mining



In summary, while it is difficult to prove definitively it is considered likely that engagement with QMEA activities and programs has been one of the factors that has influenced student destination decisions to favour mining. The principals and teachers with whom QMEA engages in the delivery of its activities are significant influencers of student choices, along with their parents.

While it is unknown whether QMEA activities have the potential to influence parental guidance, the positive nature of the influence of principals and teachers is revealed in the discussion of principal's feedback in section three of this report.

QMEA EVENT ANALYSIS

Participation

A total of 77 QMEA events were held throughout 2014. A series of tables detailing participation in QMEA events for this period can be found in Appendix A. An overall summary of the events is provided in Table A1, while Table A2 provides an analysis of student participant diversity, Table A3 shows teacher participation and Table A4 shows industry participation in these events.

Collated results have identified a slightly higher proportion of female participation than male participation, and a pleasing proportion of Indigenous representation. Both these results sit well within the context of industry diversity targets.

Overall the key findings from the analysis of student participation were:

- In 2014, more than 2,400 students engaged directly in QMEA activities and participated in 77 events across the state.
- Of these 47% were male, 48.7% were female and 4.3% were male and female Indigenous participants.
- More than 200 industry representatives participated in activities to support student pathways into industry and increase their knowledge of the sector.
- 150 teachers and pre-service teachers were involved in teacher professional development activities including workshops, seminars and online webinars.
- 190 QMEA/vocational education and training (VET) pathway students have successfully completed Certificate II in Resources Infrastructure and Workplace Preparation- an entry level qualification favoured by industry.

Feedback on 2014 events

Students' and teachers' feedback

Event appraisal forms are distributed to students and teachers participating in each QMEA event. Responses were elicited from students on the following questions/statements:

- This event was a great opportunity to learn more about the career options available to me within the mineral and energy sector (rating 1-5)
- This event met my expectations (rating 1-5)
- Did you learn something new? (Y/N)
- Has this activity influenced your career goals? (Y/N)

Responses were elicited from teachers on the following questions/statements:

- This event was worthwhile (rating 1-5)
- I would recommend this event to others (Y/N)
- Attending the activity will improve how I teach ME related topics (Y/N)

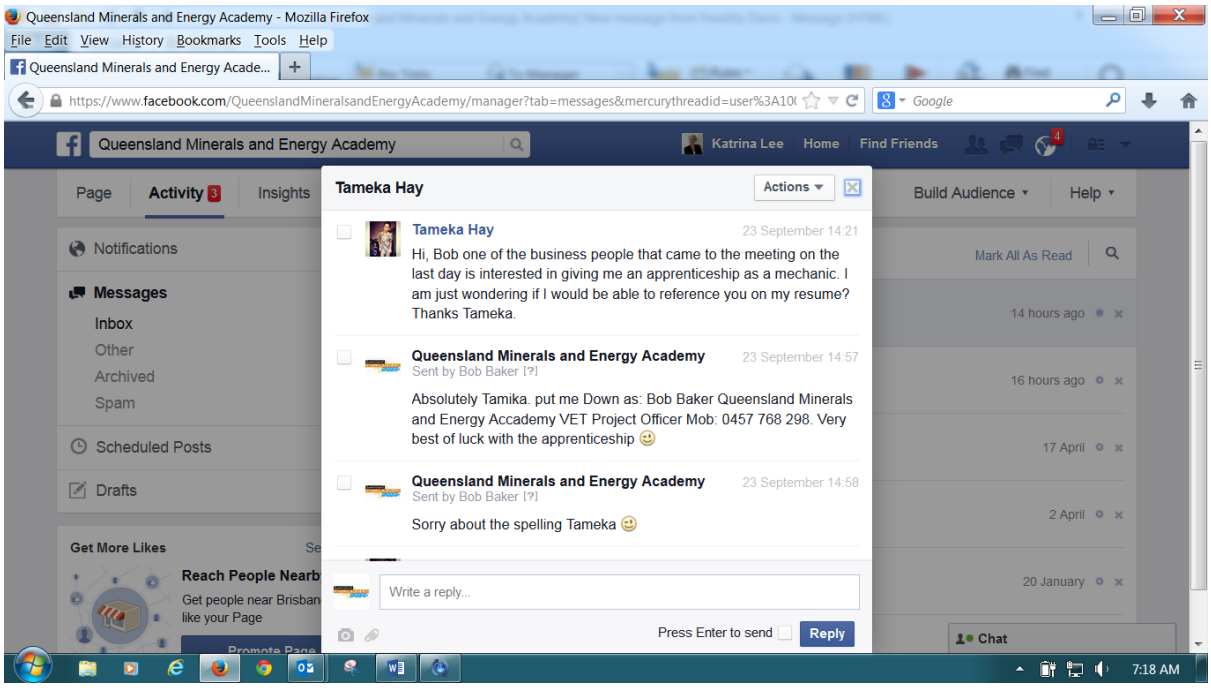
In addition to the positive reactions to these questions recorded in Figure 8, the students consistently rated the opportunity to undertake team work and to meet new people as the most important or enjoyable aspects of attending a QMEA event. The following are some specific comments that were made by students.

Loved the way (the industry representatives) shared their experiences with us. It was great to hear none of them were really set on what they wanted to do when they left school.

Definitely a worthwhile experience, seeing the equipment and meeting new people that share the same interests.

Very enjoyable activity. It helped us bond with others from different schools.

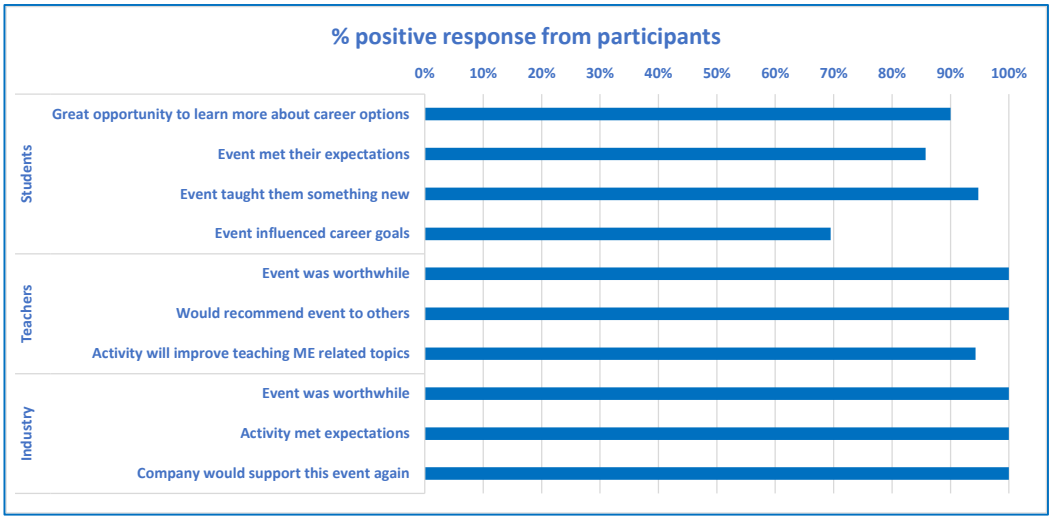
Seeing our final outcome of the bike was really cool. After putting in hard work throughout this week and to have a great outcome.



The following are some specific suggestions for improvement that have been made by students:

- Provide more hands-on work.
- Allow more time for the activities.
- Provide a roster/timetable of activities and locations.
- Locate closer to home town of students attending.

Figure 8 Responses to questionnaires from students, teachers and industry participants who attended QMEA events



Industry feedback

Industry participants generally advised that they found attending the QMEA event worthwhile, that the events ran quite smoothly and were conducted in a positive and efficient manner. Participants were asked to respond to the following questions:

- The event was worthwhile (rating 1-5)
- The event met my expectations (rating 1-5)
- My company would support this event again (Y/N)

Responses are summarised in Figure 8. In addition to these prompted responses, a number of industry participants provided specific comments, such as the following:

What a great initiative and so valuable for the kids; it is a great opportunity for school students to explore career options.

QMEA provides a fantastic opportunity for young students to learn about a future career in engineering. The tasks are exciting and challenging, if only this program was running when I was at high school!

A positive day introducing girls to a whole new world of opportunity in trades.

This event is a great exposure for the students to get some hands on experience and practical knowledge about the mining industry.

We see our engagement with QMEA as an opportunity for our people on the ground to become more involved in educational activities and for students to understand what we do. Veolia (new sponsor)

The following are some specific suggestions for improvement that have been made by industry participants:

- Have more hands on activities and fewer lectures.
- Provide more guidance on activities through greater teacher involvement and lead in preparation.
- Provide a better overview to industry reps so they have a better understanding of what is required of them.
- Offer more opportunities to represent smaller pockets of the community.

Principals' feedback

Discussions have been held with 26 principals and Heads of Department (HODs) over the course of 2014.

The following is a summary of some of the recurring themes raised by Principals and HODs in regard to the value of QMEA:

- QMEA influences student pathways by broadening their perception of what is available especially outside their immediate environment.
- QMEA provides 'Something for every kid at every level.'
- Student engagement in QMEA activities and particularly exposure to industry has influenced their choices and provided good articulation into engineering pathways.
- QMEA assists in keeping students focused on why they are at school and in particular why they need to do maths and sciences

- The camps are highlights and schools are keen for students to be given the opportunity to participate.
- QMEA activities assists with attraction of females into STEM, and it is great to see there are so many roles for women in industry.

The following are some specific comments that have been made by interviewees.

Robotics activities have been great for maths/science extension and Eng Tech kids; improved pathway into mechatronics and related careers; school now has a link with Griffith Uni and *Kids don't realise how lucky they are with what the partnership has provided*. Karen White, Science HOD Gladstone SHS.

The QMEA program provides our students with valuable insights into resources sector careers. It is through experiences such as the QMEA/Anglo American Career Cafe that our students have a greater understanding of subjects needed to undertake STEM related career pathways. As a result of previous engagement with QMEA events, our senior chemistry class this year has seen increased numbers particularly of girls enrol in this subject. Gail Armstrong, Principal Alexandra Hills SHS.

QMEA has grown capability of teachers over the years by providing PD and the supply of supporting teaching resources and how these fit into the curriculum. Cynthia O' Sullivan, Deputy Principal, North Rockhampton SHS.

QMEA without a doubt provides value for its students and teachers. Jeff Major, Principal Wavell SHS.

One of the very first and very able young men we sent to camp went to UQ and because of what he had learnt, he applied for scholarships and work experiences and is doing very well in the workforce. His brother who came to school with a robotics bent saw what had happened with his brother and went down the same path. Alison Pound Science HOD Wavell SHS.

It is very hard to put a value on what is done in schools as you are working with hearts and souls. With QMEA activities you do have concrete objectives but I believe the far more important things are intangible – you are building mental pictures. I believe that it extends way beyond the types of things that you are thinking about….students are also getting a picture of happy, committed people who love their job, who are going out of their way to ensure that people are safe (I love being able to use my time on mine sites when students argue with me about WPHS) and that the environment is looked after as well as possible. Much of this runs against popular images and we cannot discount the impact that this also has through life. Alison Pound Science HOD Wavell SHS.

The following are some areas where Principals and HODs have suggested areas for improvement in the delivery of QMEA activities:

- Undertake a MINT camp for Brisbane;
- Use pupil free days for professional development of teachers;
- Include students who also have career pathways into other disciplines e.g. health;
- Undertake more professional development;
- Have an increased focus on VET;
- Distribute more marketing materials;
- Make available more information on pathways;
- Maths contextualised professional development for teachers and maths activities for students;
- Obtain TRS funding;
- Offer opportunities to attend industry conferences;

- Improve timelines for events.

All of these comments will be considered in the development of future QMEA events.

UPTAKE OF STEM SUBJECTS IN QMEA SCHOOLS

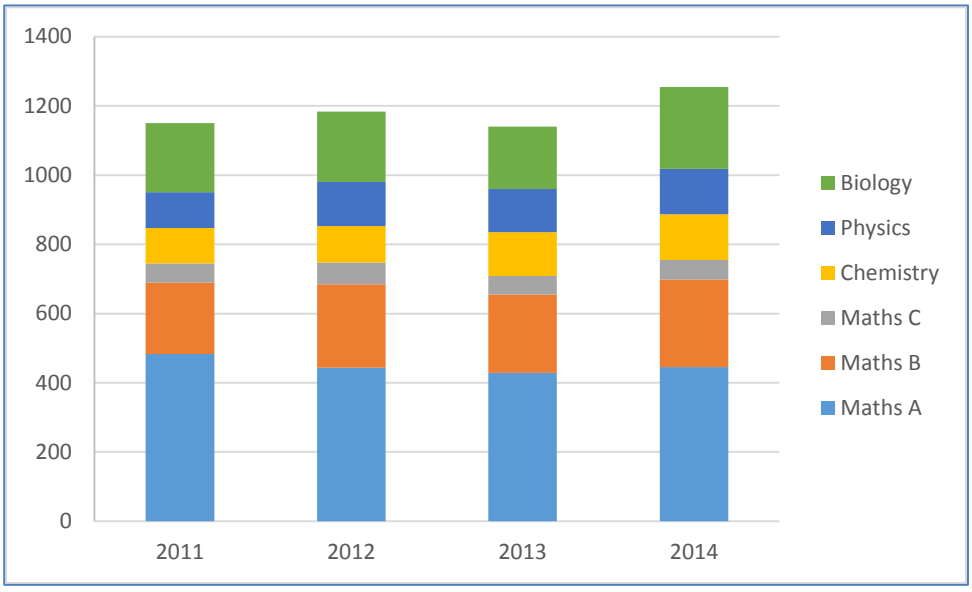
School enrolment data

In a 2013 paper prepared by the *Office of the Chief Scientist of Australia* it was noted that there is a decline in the interest and uptake of STEM subjects in senior secondary schooling across the nation. To investigate this trend, QMEA schools were invited to provide data on the numbers of students enrolling in senior mathematics and science subjects in the last five years. A total of six schools responded and the data was collated to produce Figure 9 below. To enable collation the data was restricted to the common elements provided by the six schools which included only Year 12 enrolments since 2011 for Physics, Chemistry, Biology and Mathematics A, B and C.

An analysis of these numbers shows that the total number of Year 12s enrolled in a STEM subject has increased between 2011 and 2014. Each of the science subjects have increased the numbers enrolled along with Mathematics B. Interestingly the only subject, in this data set, which has seen a decrease is Mathematics A which may suggest that more students are enrolling in the more difficult/challenging maths subject. It should also be noted that numbers for Mathematics C have remained steady but this is encouraging giving the broader state-wide trend of dropping enrolments.

In future reporting it is aimed that a higher number of QMEA schools will be able to provide this data to provide a broader indication on the uptake of senior STEM subjects in QMEA schools. This will also provide a larger sample size to be able to identify trends. It should also be noted that this data is represented as total number of enrolments and does not reflect the changing total student population of each of the respondents.

Figure 9 Numbers of students enrolled in mathematics and science subjects in year 12 in 6 QMEA schools from 2011 – 2014.



Anecdotal evidence

The following anecdotal quantitative evidence was provided by principals and teachers.

Our data indicates 6 students enrolled in Bachelor of Engineering this year and a further three in Natural and Physical science which combined represents the highest numbers in a STEM pathway since their engagement with QMEA in 2006. Andrew Peach, Principal, Bundamba State College.

We introduced Engineering Technology because of QMEA and partnership has seen the subject grow from 12 to 35 students in three years with QMEA activities providing exposure for these students. Karen White, Science HOD Gladstone SHS.

There are more trade bound students taking maths B particularly those interested in the electrotechnology pathway. Warwick Atkinson, QMEA key teacher North Rockhampton SHS.

For students who finished in 2013, we had an increase in the number of students 'offered' engineering. This was 15 compared to 7 from the class of 2012. Five of these 15 students attended the QMEA camps at Mt Isa and Dysart. Jeff major Principal Wavell SHS.

Communication

For each event a media release is generated and distributed throughout the regions. In 2014 45 articles on QMEA were featured in addition 5 incidents of television coverage occurred. Further to this numerous articles have appeared in industry journals and within school newsletters.

A full complement of these articles can be provided on request. Appendix B provides a selection of featured articles.

APPENDIX A DETAILS ON PARTICIPATION IN 2014 QMEA EVENTS

Table A1 Summary of QMEA events for 2014

Event title	Date
RIWP Presentation Townsville	4-5 February 2014
RIWP PD Mackay	24 February 2014
QSMART PD Mackay	25 February 2014
RPL RIWP Mackay	26 February 2014
Ambassador Program 2014	3 March 2014
Science TPD webinar (online)	4 March 2014
Opportunities webinar (online)	10 March 2014
RIWP PD Moranbah	11 March 2014
Insect Prospectors webinar (online)	17 March 2014
Science Olympiad Rockhampton	20 March 2014
TESEP PD 9 - all sessions Brisbane	21 March 2014
TESEP PD 1 Brisbane	22 March 2014
Science Olympiad Brisbane	31 March 2014
Career Café QGC Gladstone (Chanel College)	31 March 2014
Career Café (Toolooa)	1 April 2014
Wandoan VET PD	1-2 April 2014
Career Café Gladstone (Palisa Huoth)	3 April 2014
Career Café Gladstone (Tannum Sands)	3 April 2014
Career Café Gladstone QGC (Toolooa)	3 April 2014
BMA MINT Challenge	7-11 April 2014
Resume writing webinar (online)	28 April 2014
Toolkit for School Kids Wandoan	5 May 2014
Career Café Biloela	7 May 2014
Biology Field Day Gladstone	8 May 2014
It's All About ME Gladstone & CQU	15 May 2014
Toolkit for School Kids Brisbane	16 May 2014
Toolkit for School Kids Biloela	29 May 2014
Expand Your Mind Gladstone	29 May 2014
Applying for scholarships webinar (online)	2 June 2014
Toolkit for School Kids Mount Isa	3 June 2014
Science Olympiad Moranbah	10 June 2014
Toolkit for Girls Moranbah	10 June 2014
Applying for apprenticeships webinar (online)	10 June 2014
Science Olympiad Emerald	11 June 2014
Toolkit for School Kids Emerald	11 June 2014
Toolkit for Girls Mackay	16 June 2014
Anglo MINT Challenge Biloela	30 June to 3 July 2014

Event title	Date
QUT Challenge Mackay	7-11 July 2014
Career Café (Geology) Wavell	22 July 2014
Glencore Coal MINT Training Days/Challenge Wandoan	28-29 July 2014
Science Olympiad Taroom	29 July 2014
Biodiversity Day Wavell SHS	5 August 2014
Science Olympiad Mount Isa	5 August 2014
Toolkit for School Kids Townsville	6 August 2014
Pre Service Teacher Lecture QUT Brisbane	7 August 2014
Ambassador Student webinar - ResourcesQ initiative	12 August 2014
TPD Pre Service Teachers QUT Brisbane	13 August 2014
Science Olympiad Mackay	14 August 2014
Toolooa Biology Field Day	19 August 2014
Career Café Alexandra Hills	20 August 2014
Energy for the Future Gladstone	21 August 2014
STEM TPD Gladstone	23 August 2014
Biodiversity Day Gladstone	26 August 2014
Toolkit for School Kids Rockhampton	27 August 2014
Energy for the Future Brisbane	28 August 2014
Energy for the Future Blackwater	4 September 2014
Career Café Blackwater (with QUT)	5 September 2014
Dalrymple MINT Camp (Charters Towers)	15-19 September 2014
BMA Mine Challenge Moranbah	20-26 September 2014
Earth Sciences Week Mount Isa (Kids Rock)	14 October 2014
Earth Sciences Week Townsville (Kids Rock)	16 October 2014
Maths & Science Challenge Gladstone	18-19 October 2014
Brisbane MINT Camp	20-24 October 2014
Energy for the Future Nanango	3 November 2014
Career Café Biloela & Moura	5 November 2014
Expand Your Mind Brisbane	11 November 2014
Career Café QGC Gladstone	11 November 2014
Expand Your Mind Wandoan	13 November 2014
Expand Your Mind Blackwater	25 November 2014
Expand Your Mind Moura	27 November 2014
QMEA Ambassador Program Activities	1-2 December 2014
QMEA Breakfast	2 December 2014
Career Café BMA at Blackwater	3 December 2014
Blackwater Transition Day	4 December 2014
Career Café Nanango SHS	9 December 2014
Intro to Safety and Professional Communication Gladstone	8-10 December 2014

Table A2 Summary of attendance at 2014 QMEA events by students

Event Name	Date	Non-Indigenous		Indigenous	
		Male	Female	Male	Female
Science Olympiad Rockhampton	20 March	7	15	1	2
Science Olympiad Brisbane	31 March	9	18	0	0
Career Café QGC Gladstone (Chanel College)	31 March	131	99	0	0
Career Café (Toolooa)	1 April	31	22	2	2
Career Café Gladstone (Palisa Huoth)	3 April	24	12	1	1
Career Café Gladstone (Tannum Sands)	3 April	49	43	2	3
Career Café Gladstone QGC (Toolooa)	3 April	128	114	8	9
BMA MINT Challenge	7-11 April	15	1	0	0
Toolkit for School Kids Wandoan	5 May	13	1	0	0
Career Café Biloela	7 May	141	115	7	10
It's All About ME Gladstone & CQU	15 May	0	80	0	2
Toolkit for School Kids Brisbane	16 May	17	2	0	0
Toolkit for School Kids Biloela	29 May	11	8	0	1
Expand Your Mind Gladstone	29 May	24	20	1	0
Toolkit for School Kids Mount Isa	3 June	20	2	1	0
Science Olympiad Moranbah	10 June	5	12	0	0
Toolkit for Girls Moranbah	10 June	0	15	0	5
Science Olympiad Emerald	11 June	9	15	0	0
Toolkit for School Kids Emerald	11 June	12	0	1	0
Toolkit for Girls Mackay	16 June	1	20	0	0
Anglo MINT Challenge Biloela	30 June to 3 July	9	2	0	0
QUT Challenge Mackay	7-11 July	5	7	0	0
Career Café (Geology) Wavell	22 July	4	6	0	0
Glencore Coal MINT Training Days/Challenge Wandoan	28-29 July	8	1	2	0
Science Olympiad Taroom	29 July	4	7	0	0
Science Olympiad Mount Isa	5 August	2	10	3	1
Toolkit for School Kids Townsville	6 August	14	2	3	0
Science Olympiad Mackay	14 August	4	14	1	0
Toolooa Biology Field Day	19 August	5	15	0	0
Career Café Alexandra Hills	20 August	18	34	0	1
Energy for the Future Gladstone	21 August	36	22	0	3
Biodiversity Day Gladstone	26 August	10	17	0	0
Toolkit for School Kids Rockhampton	27 August	16	4	0	0
Energy for the Future Brisbane	28 August	21	41	0	0
Energy for the Future Blackwater	4 September	25	23	0	3
Career Café Blackwater (with QUT)	5 September	28	44	1	1
Dalrymple MINT Camp (Charters Towers)	15-19 2014	8	4	1	1
BMA Mine Challenge Moranbah	20-26 2014	8	10	0	0
Earth Sciences Week Mount Isa (Kids Rock)	14 October	11	11	1	2

Event Name	Date	Non-Indigenous		Indigenous	
		Male	Female	Male	Female
Earth Sciences Week Townsville (Kids Rock)	16 October	5	14	0	0
Maths & Science Challenge Gladstone	18-19 October	1	3	0	0
Brisbane MINT Camp	20-24 October	13	3	1	0
Energy for the Future Nanango	3 November	14	32	0	1
Career Café Biloela & Moura	5 November	17	25	0	1
Expand Your Mind Brisbane	11 November	19	19	0	0
Career Café QGC Gladstone (Chanel College)	11 November	12	17	0	0
Expand Your Mind Wandoan	13 November	7	6	2	0
Expand Your Mind Blackwater	25 November	25	20	1	1
Expand Your Mind Moura	27 November	17	12	0	3
Blackwater Transition Day	4 December	16	18	0	2
Career Café Nanango SHS	9 December	110	121	4	5
	Totals	1139	1178	44	60
	Total students	**2421**			

Table A3 Total number of teachers and pre-service teachers at 2014 QMEA events

Event Name	Date	Male	Female
Science Olympiad Rockhampton	20 March	3	4
Science Olympiad Brisbane	31 March	0	4
Career Café QGC Gladstone (Chanel College)	31 March	1	
Career Café (Toolooa)	1 April		1
Career Café Gladstone (Palisa Huoth)	3 April		2
Career Café Gladstone (Tannum Sands)	3 April		1
Career Café Gladstone QGC (Toolooa)	3 April	1	1
BMA MINT Challenge	7-11 April	2	1
Toolkit for School Kids Wandoan	5 May	1	1
Career Café Biloela	7 May	1	0
It's All About ME Gladstone & CQU	15 May		8
Toolkit for School Kids Brisbane	16 May	3	1
Toolkit for School Kids Biloela	29 May	3	1
Expand Your Mind Gladstone	29 May	2	3
Toolkit for School Kids Mount Isa	3 June	2	2
Science Olympiad Moranbah	10 June		1
Toolkit for Girls Moranbah	10 June	1	4
Science Olympiad Emerald	11 June	2	2
Toolkit for School Kids Emerald	11 June	1	1
Toolkit for Girls Mackay	16 June	1	3
Anglo MINT Challenge Biloela	30 June to 3 July	1	1
QUT Challenge Mackay	7-11 July	1	2

Event Name	Date	Male	Female
Career Café (Geology) Wavell	22 July		1
Glencore Coal MINT Training Days/Challenge Wandoan	28-29 July	1	
Science Olympiad Taroom	29 July	1	1
Science Olympiad Mount Isa	5 August	1	
Toolkit for School Kids Townsville	6 August	2	
Science Olympiad Mackay	14 August	2	1
QUT Pre Service Teachers	19 August	17	9
Toolooa Biology Field Day	19 August	1	1
Career Café Alexandra Hills	20 August		1
Energy for the Future Gladstone	21 August		4
Biodiversity Day Gladstone	26 August	2	2
Toolkit for School Kids Rockhampton	27 August	2	2
Energy for the Future Brisbane	28 August	1	2
Energy for the Future Blackwater	4 September	2	3
Career Café Blackwater (with QUT)	5 September		3
Dalrymple MINT Camp (Charters Towers)	15-19 September	4	
BMA Mine Challenge Moranbah	20-26 September	1	2
Earth Sciences Week Mount Isa (Kids Rock)	14 October	1	1
Earth Sciences Week Townsville (Kids Rock)	16 October	1	
Maths & Science Challenge Gladstone	18-19 October		
Brisbane MINT Camp	20-24 October		
Energy for the Future Nanango	3 November	3	3
Career Café Biloela & Moura	5 November		
Expand Your Mind Brisbane	11 November		
Expand Your Mind Wandoan	13 November	2	
Expand Your Mind Blackwater	25 November		
Expand Your Mind Moura	27 November		
	Totals	**70**	**80**
	Total teachers	**150**	

Table A4 Number of people from sponsor companies who attended QMEA events in 2014

Company Name	Number of Participants	Company Name	Number of Participants
Anglo American	19	Glencore Wandoan Coal	7
APLNG & ConocoPhillips (APLNG)	9	JCU	3
Autocorner	2	Jellinbah	1
Bechtel	5	Leighton Contractors	2
BMA	31	Lennon Training	3
Boyne Smelters	3	NRG Power Station	1
CQIT	2	O'Connor's Body Fab	1
CQU	12	OHS72	1
Civil Train	2	QGC	15
Conservation Australia	5	QUT	10
CSIRO	2	RAW Consultants	1
Dowdens	2	Rio Tinto	11
Down to Earth Results	1	Roadtek	3
Downer EDI Mining	3	Santos GLNG	5
Downing Teal	1	Sibelco	5
Ecologica Consulting	3	Skills Tech Australia	1
Ergon	1	Stanwell	3
Evolution Mining	1	TECNQ	1
Gagal	4	Thiess	2
Geological Survey of Qld	1	TNT Training	1
GHD	2	TOTALFAB	1
Geological Survey of Qld	1	Vale Coal	1
Gladstone Ports Corporation	1	Wesfarmers Curragh	9
TOTAL			201

APPENDIX B SELECTED MEDIA COVERAGE FOR 2014

news
Kids rock at minerals day

122 words
28 October 2014
North West Star
FNWEST
English

YEAR 10 students were excited to be part of the **Queensland Minerals and Energy Academy** Kids Rock program delivered at Spinifex State College for students from the North West.

The school's science head of department Dan Horskins said students participated in hands-on activities to learn more about geology and earth science.

"We appreciate that representatives from the QMEA, CSIRO, JCU and Glencore attended to run the programs and also talk about career opportunities for students," he said.

The timing of this program is particularly relevant for these students as they are finalising their subject selections for their senior course of study to begin in 2015.

Gem of an experience for students

Banjo Kimber (Emerald State High School) Mines Minister Andrew Cripps, Peter Dowling (BMA) Dan Rea and Bob Baker (QMEA).

Emerald played host last month to a QMEA Toolkit 4 School Kids workshop for students from Moranbah, Dysart, Middlemount, Clermont, Capella and Blackwater who were given the tools to explore career options as electricians, diesel fitters, fabricators or operators in the minerals and energy sector.

The program included a tour of Lennon's Underground Training Centre in Emerald.

They engaged with professionals and tradespeople, supported by mentors from BMA, Anglo American, Leighton's, Downer Glencore as they completed hands-on tasks.

QMEA Director Katrina Lee Jones said programs like these are essential to ensure students make informed decisions and encouraging them to consider trades where there are skills shortages.

Students gain hands-on experience as they learn what it's like at work

318 words
11 July 2014
Central Telegraph
APNCET
Main
3
English

ELEVEN students from Biloela and Moura successfully built three working motorised bikes during a special week-long training camp last week.

Through the Make it Now in Trades program, hosted by Anglo American and the **Queensland Minerals and Energy Academy** (QMEA), local students aspiring to be tradespeople, such as diesel fitters or electricians, were given the opportunity to experience life in a simulated mining workshop.

The students worked alongside Anglo American apprentices, tradespeople and other field experts on a range of activities that demonstrated their technical capabilities, ability to work in teams and problem solving skills to achieve their objective to create a powered bike.

Anglo American talent manager Debbie Butler commended the students for giving up their school holidays to be involved in the workshop and said Anglo American was happy to partner with the QMEA to bring projects to local communities that delivered fresh opportunities for young people.

"We are delighted to help fund the QMEA which directly benefits young people in our areas of operation by providing practical experience and exposure to people who can provide advice on future career pathways," Debbie said. "When you are still in school, deciding on the right career path can be a daunting process, especially when you have no experience to help you make an informed choice.

"Through initiatives like the MINT program, and by completing real projects like the motorised bike build, students obtain real-work experience by living through what it is actually like to work in a trade and in a team, rather than just imagining what it might be like.

"Most importantly, Anglo American's partnership with QMEA helps students start thinking about their futures.

"It also promotes the exciting opportunities that await them in the resources sector."

The Observer

Teachers given an insight into LNG needs

MARA PATTISON-SOWDEN Science
255 words
26 August 2014
The Observer (Gladstone)
APNOBG
Main
21
English

THIRTY teachers from the Gladstone region participated in a professional development workshop to encourage real life learning to students.

To correspond with National Science Week, the teachers were given unprecedented access to the **LNG** industry's human resources managers in a professional development day at CQ University conducted by the **Queensland** Minerals and Energy Academy.

The intensive workshop will began with teachers working with QGC midstream HR superintendent operations Joseph De Jonckheere. The science, maths and senior schooling teachers learnt directly about what skills the **LNG** industry was looking for as well as forecasted roles for the future. Chanel College science teacher Jodie Cameron believed this insight into the world of work provides teachers with information they normally do not have access to.

"Learning intrinsic chemical, physics, environmental, biology considerations will allow teachers to incorporate these facets into their lessons. In short, it makes it far more relevant," she said. QMEA STEM outreach officer Dan Rea said the professional development day brought together industry and education, which was vital in creating tomorrow's highly skilled workforce. "The QMEA creates a talent pipeline into the minerals and energy sector and guides teachers in these best practices," he said. "The sessions taught teachers how to set junior science students on a path to success in senior years, as well as getting the most from their senior students."