



2016 SSEP WAIKATO PILOT

Report and outcomes





Smart Waikato Trust thanks SSEP supporters for their investment in Waikato's future



EXECUTIVE SUMMARY

Smart Waikato's Secondary School-Employer Partnerships (SSEP) are formal relationships where employer groups from priority sectors link into school faculties at Year 9/10, supporting contextualised learning at subject level and introduce students to a wide range of careers.

The goal of SSEP, supported by Waikato Means Business, Ministry of Education and WEL Energy Trust, is to improve student retention, achievement and education-to-employment transitions, beginning with younger secondary school students and progressing to senior students. This will ultimately contribute to addressing future workforce gaps and skills issues in Waikato.

Key industries identified as being important to the local economy are business, ICT, trades, infrastructure, engineering, health and primary industries. For the 2016 Waikato SSEP Pilot 48 different employers across these industries partnered with 26 teachers at five Waikato secondary schools; Fairfield College – Maths, Thames High School – Business, Hamilton Boys' High School – Technology (Metal and IT), Morrinsville College – Science, Hauraki Plains College – English. 731 students participated (338 from Year 9 and 393 from Year 10).

Quantitative and qualitative data were collected throughout the year from students, teachers and employer partners to measure the impact of SSEP on the three key stakeholders. Impact was notably greater on Year 10 students. 79% of students said SSEP helped them understand why they are studying the subject at school. 69% said that SSEP helped them when thinking about their future career. 67% said that it made them more interested in the subject at school and 64% said it changed the way they felt about what they could achieve. The true impact of SSEP is unlikely to be realised for 3 to 4 years given the pilot cohort are between 13 and 15 years old.

One of the key benefits for 96% of teachers was that the real-life context offered by the employers supported their professional development.

Prior to SSEP teachers had only limited engagement with industry. 77% of teacher respondents said SSEP had changed the way they plan their curriculum.

Several teachers have leveraged relationships with their employer partners to involve them in various ways outside of SSEP with senior student activities.

The process of onboarding appropriate SSEP employer partners for a three year period for each school was time-intensive for Smart Waikato who onboarded all of the employers. More than two-thirds of the 48 employers who engaged in SSEP were from Smart Waikato Trust's network.

A post-pilot employer survey shows around 65% had had no previous contact with the school they had partnered with. Benefits to employers were varied from greater community connection, being able to help young people, personal and professional development of staff to having an opportunity to "show what really goes on in industry." 80% of employers said they would consider doing SSEP in an additional school.

An intermediary organisation is vital to the success of SSEP through engaging and introducing employers to the school, facilitating introductions, providing framework and resources for SSEP, supporting developing relationships, resolving issues and objectively researching and evaluating the programmes from all participants points of view.

The SSEP model that had most impact was where: employers received clear guidance from the teachers about the curriculum and level, students had multiple points of contact with employers both in the classroom and in the workplace, all students had the opportunity to go on workplace visits, genuine (rather than transactional) relationships were developed between teachers and employers. In schools where teacher engagement in the SSEP programme was higher, the greater the positive impact was noted on student attitude to the school subject.

Key recommendations include: Generate further funding so that more Secondary Schools can participate in the SSEP programme, participating schools and employers follow best practice guidelines as developed through this pilot study, develop a central resource of activity examples, access funding for longitudinal measurement of pilot cohort via pilot student NSN numbers in 3 to 4 years time to assess the full benefit of SSEP.

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Jean Patterson, Ministry of Education and John Cook, Waikato Means Business at the 2015 Smart Waikato Leadership Summit launch of SSEP

“We all agree that educators and employers need to collaborate more closely in order to produce successful outcomes for all parties.”

John Cook, Waikato Means Business Steering Group chair, October 2015

“We look forward to supporting Waikato students, schools and wharekura, tertiary providers and employers through SSEPs.”

Paula Rawiri Ministry of Education, Director of Education Waikato, October 2015





INTRODUCTION

What is SSEP?

Smart Waikato's Secondary School-Employer Partnerships (SSEP) are formal relationships where employer groups from priority sectors link into school faculties at Year 9/10, supporting contextualised learning at subject level and introduce students to a wide range of careers.

Why SSEP is needed?

The goal of SSEP, supported by Waikato Means Business, Ministry of Education and WEL Energy Trust, is to improve student retention, achievement and education-to-employment transitions, beginning with younger secondary school students and progressing to senior students. This will ultimately contribute to addressing future workforce gaps and skills issues in Waikato.

Who is involved?

Key industries identified as being important to the local economy that are experiencing current or anticipating future skills shortages include business, ICT, trades, infrastructure, engineering, health and primary industries. **48 different employers** across these industries partnered with teachers at **five secondary schools** across the Waikato region for the 2016 SSEP pilot. **Five key school subject areas** were identified as being important 'minimum requirement' knowledge areas for successful

employment in some, or all, of these industries. **26 Year 9 and 10 secondary school teachers** across faculties of **English, maths, science, technology and business studies** worked with business representatives of the employer partners to create contextualised learning opportunities for their students.

Smart Waikato is a charitable trust formed in 2009 aiming to empower Waikato youth through education to employment pathways. Smart Waikato has extensive networks across both education and industry groups and has led the SSEP project since its inception. During the development of SSEP Smart Waikato Trust worked closely with the Ministry of Education to ensure SSEP supports Ministry objectives and complements national initiatives.

SSEP Pilot Stakeholder objectives

Waikato Means Business (and WEL Energy Trust)

Waikato Means Business Waikato Regional Labour Market Strategy's aim is to build, attract and retain skills and talent for the Waikato region.

In the short-term (1-2 years) Waikato Means Business hopes to see SSEP

1. Strengthen links between industry and secondary education (sustained engagement between industry and educators)
2. Begin to address current and future workforce gaps and skills issues in the Waikato region

As a longer term result of SSEP Waikato Means Business hopes to see

1. Enhanced student engagement through contextualised learning opportunities
2. Improved scholastic achievement
3. Better informed subject choices
4. Increased numbers of students interested in pursuing careers in local industries with current and/or predicted skills shortages
5. Closer links between educators and business
6. Increased expectation/intention of young people to stay and work in the Waikato region

Ministry of Education

Ministry of Education hopes SSEP will facilitate

1. Closer links between industry and educators

2. Changes in teacher planning and practice of curriculum delivery
3. Increased student understanding of why they are learning key subjects and how they could be used in the future
4. Improved student achievement, retention and transitions to tertiary study or employment.

- delivering contextualised learning programmes
- to strengthen connections between education and business
- to create a resource base to share with other schools

The core aims of SSEP are to

- help students understand the importance of key school subjects for their future
- keep students engaged in core subjects by making classroom learning relevant to the 'real' world; and
- expose students to a wide range of local businesses and viable career options that they may never have previously considered, or known existed.

How SSEPs are formed

Smart Waikato takes a five-step process to developing each SSEP

1. Schools apply to participate in SSEP
2. School selection process
3. Work with the school to identify curriculum areas to focus on and a 'wish list' of employers they would like to partner with
4. Identify, engage and sign-up appropriate employers to participate
5. Introduce employer and school partners and provide a framework, structure, resources and support to the groups

Once SSEP activities are underway Smart Waikato acts as an intermediary when required, and evaluates and measures the impact of the programme.

The purpose of the SSEP pilot was

- to trial SSEP across a range of schools and different curriculum areas to identify best practice
- to evaluate the impact of SSEP on student attitudes toward and understanding of key subject areas and local career opportunities
- to evaluate the impact on teacher practice in

Implementation of the 2016 SSEP Pilot



Launched at the 2015 Smart Waikato Leadership Summit the SSEP pilot was targeted at junior high school students. This is because at Years 9 and 10, core subjects are still compulsory, the curriculum is more flexible and it is before students make critical senior school subject choices that can impact on their tertiary education and career options .

During the 2016 school year Smart Waikato Trust piloted SSEP in five Waikato secondary schools representing a range of size, deciles and locations. Each school piloted SSEP in a single faculty area.

Quantitative and qualitative data were collected throughout the year from students, teachers and employer partners to measure the impact of SSEP on the three key stakeholders.

This report contains a summary of key findings and immediate outcomes of the 2016 SSEP pilot programme and recommendations for the continued improvement of SSEP.

“Engagement and retention will improve if students and whanau are able to see a clearer line of sight between what they are learning at school and how it relates to their post-secondary school destinations.”

- Richard Crawford, Principal Fairfield College

SSEP Pilot Implementation

Selection

Schools



Following the 2015 Smart Waikato Leadership Summit all Waikato Secondary School Principals were invited by email and post to complete an online application to participate in the pilot SSEP programme the following year. Principals were asked to nominate their first and second preferred faculty in which to pilot SSEP according to their perceived enthusiasm of faculty staff for the programme.

26 Waikato secondary schools applied to participate in the 2016 SSEP pilot. All applicants were interviewed by telephone and applications reviewed by representatives of Smart Waikato Trust, Ministry of Education and the Waikato Means Business Labour Market Strategy working group.

Students



Each school selected the Year level (9 or 10 or a combination) and classes it wanted to participate in the SSEP pilot.

Successful SSEP Pilot Schools were:

- Fairfield College, Hamilton (Year 9 Maths)
- Hamilton Boys' High School, Hamilton (Year 10 Metal and Information Technology)
- Hauraki Plains College, Ngatea (Year 9 English)
- Morrinsville College, Morrinsville (Years 9 and 10 Science)
- Thames High School, Thames (Year 10 Business Studies)

Employers



The process of identifying and onboarding appropriate SSEP employer partners for a three year period for each school was time-intensive. Smart Waikato met with school staff to identify focal curriculum areas on which to base SSEP activities and existing relationships with local employers that they may wish to invite to participate.

The final selection of local employers represented the full range of critical industries as identified by Waikato Means Business including Primary Industries, Health, Trades, Engineering, ICT and Business (see Table 1 for an overview of industry partners). Employer selection criteria included:

1. Each pilot school had a broad range of 7-11 local employers from critical industries to partner with.
2. There were clear curriculum links between what is taught in the classroom and employer business activities.
3. Employers were willing to commit up to 30 hours of voluntary time over the pilot year for planning, SSEP activities and evaluation and a three- year involvement.

Table 1. SSEP pilot employer partners by industry and school

School	Primary Industries	Health	Trades	Engineering	ICT	Business
Fairfield College (Focus on statistics, measurement & geometry)		<ul style="list-style-type: none"> Anglesea Hospital 	<ul style="list-style-type: none"> Foster Construction Montana Catering 	<ul style="list-style-type: none"> CTC Aviation Gallagher 		<ul style="list-style-type: none"> Deloitte Ecolab Hamilton City Council Westpac Timpack
Hamilton Boys' High School (IT and Metal Tech)				<ul style="list-style-type: none"> Hendl & Murray Stafford Engineering Thorburn Engineering JP Marshall Mainline Sheetmetals 	<ul style="list-style-type: none"> Company-X E9 Enlighten Designs Rocketspark Printing.com 	<ul style="list-style-type: none"> ANZ KPMG
Hauraki Plains College (Research & Presentation)	<ul style="list-style-type: none"> Ravensdown 	<ul style="list-style-type: none"> Waikato District Health Board 	<ul style="list-style-type: none"> Hauraki Plains Motors 	<ul style="list-style-type: none"> Quinn Engineering 		<ul style="list-style-type: none"> Hoogveen & Associates Hauraki District Council Westpac
Morrinsville College (Focus on Agriculture)	<ul style="list-style-type: none"> Ballance Agri-Nutrients Dairy NZ Fonterra Greenlea Meats Keith Holmes (Farmer) Wallace Corporation 		<ul style="list-style-type: none"> Electricity Supply Apprenticeship Programme Morrinsville Plumbers & Gasfitters 	<ul style="list-style-type: none"> BLM Engineering 		<ul style="list-style-type: none"> Matamata-Piako District Council
Thames High School (Experiential business unit)		<ul style="list-style-type: none"> Thames Community Centre Heather Moore Unichem Pharmacy 	<ul style="list-style-type: none"> SRE Electrical Toyota 	<ul style="list-style-type: none"> A&G Price 	<ul style="list-style-type: none"> Guru Digital Media 	<ul style="list-style-type: none"> BNZ Pak n Save Smart Environmental Thames-Coromandel District Council

N.b. The business activities of several participating employers cross more than one industry but have been classified here according to the most relevant area of their businesses in context of SSEP involvement.

Across the five schools 102 employer companies were approached by Smart Waikato Trust to be involved. Of the initial 51 employers who agreed to sign up to SSEPs, 66 percent were from Smart Waikato’s networks, 19 percent were school contacts and 15 percent were common to both Smart Waikato and the schools.

Smart Waikato facilitated early meetings between school and employer partners and developed an SSEP Memorandum of Understanding in consultation with the pilot groups to establish shared expectations around roles and responsibilities during the programme. Smart Waikato also developed an SSEP planning sheet to support teachers and employers’ as they started working together for the first time to plan activities.

Smart Waikato briefed each school’s Board of Trustees about SSEP to ensure the Principal and teachers received the support and resources required to participate in the programme.

During the pilot Smart Waikato monitored SSEP progress to maintain momentum and motivate some of the teachers to organise activities with their employer partners. At times Smart Waikato was

called on to mediate issues between partners, attributed largely to a lack of confidence in working together and communication breakdowns between partners.



At the Board level of our school, we want all our students to be thinking about where they might be heading and their future careers starting at Year 9 and not waiting until just before they’re leaving school. At Year 9 we’re not expecting hard-core decision making, just an awareness around where they might be heading and how they can best prepare for that, and SSEP fits well with this philosophy.”

- Ngaire Harris, Principal Hauraki Plains College

Participants

Schools

The five schools selected for the SSEP pilot were chosen to reflect a range of Waikato secondary schools in terms of location, decile and size. Each school was selected to pilot SSEP in one of the five key faculty areas (either English, Mathematics, Science, Business or Technology) according to their nominated preferences. 26 subject teachers across the five schools participated in the planning and delivery of SSEP with employer partners.

Fairfield College is a decile 3, co-educational public school located in Hamilton City. 48% of the 772 student roll is Maori. Fairfield College piloted SSEP in its Mathematics faculty at Year 9 level.

Hamilton Boys' High School (HBHS) is a decile 7, single-sex public boys school located in Hamilton City. 18% of its 2263 student roll is Maori. HBHS piloted SSEP in its Technology faculty (Information Technology and Metal Technology) at Year 10 level.

Hauraki Plains College is a decile 5, co-educational public school located in the rural town of Ngatea. 21% of its 687 student roll is Maori. Hauraki Plains College piloted SSEP in its English faculty at Year 9 level.

Morrinsville College is a decile 6, co-educational public school located in the rural town of Morrinsville. 20% of its 680 student roll is Maori. Morrinsville College piloted SSEP in its Science faculty at Year 9 and at Year 10 levels.

Thames High School is a decile 5, co-educational public school located in the coastal town of Thames on the Coromandel Peninsula. 32% of its 581 student roll is Maori. Thames High School piloted SSEP in Business Studies which is a part of the Year 10 Social Studies curriculum.

Students

731 Year 9 (n = 338) and Year 10 (n = 393) students of mixed academic ability participated in the SSEP pilot across the five Waikato schools (see Table 2 and Figures 1 and 2 for Year and demographic distribution of students across the schools).

Table 2. SSEP pilot student cohort

School	Cohort	Y 9	Y 10
Fairfield College (Maths)	All Year 9 students, compulsory subject	138	
HBHS (Information Technology)	All Year 10 IT students, elective subject		117
HBHS (Metal Technology)	All Year 10 Metal Tech students, elective subject		65
Hauraki Plains College (English)	All Year 9 students except Learning Assisted class, compulsory subject	123	
Morrinsville College (Science)	Top 75% of students at each Year level, compulsory subject	77	77
Thames High School (Business)	All Year 10 students, compulsory subject		134
Total		338	393
Total number of students		731	

Figure 1. SSEP pilot student cohort distribution by gender

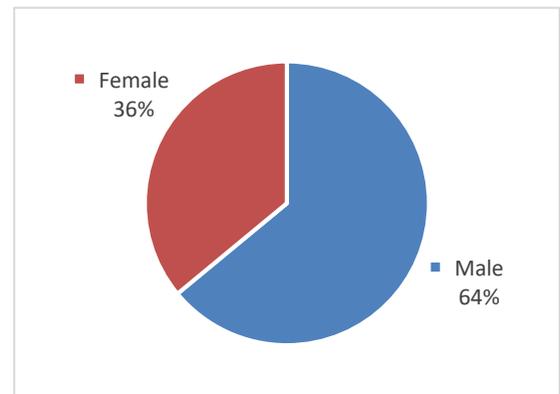
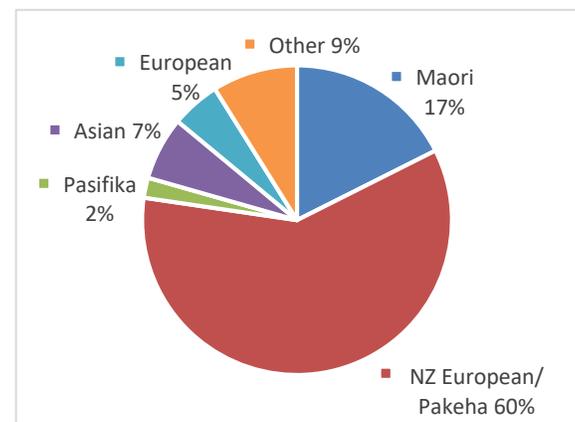


Figure 2. SSEP pilot student cohort distribution by ethnicity



Employers

Across the five schools 48 employers participated in the SSEP pilot.

SSEP Employers at Fairfield College (Maths)



SSEP Employers at Hamilton Boys' High School (IT & Metal Tech)



SSEP Employers Hauraki Plains College (English):



SSEP Employers Morrinsville College (Science):



SSEP Employers Thames High School (Business):



Employers nominated representatives from their business to work with teachers to plan and deliver SSEP activities. Employers were encouraged to nominate business representatives that were young (early in their career) and a diverse range of ethnicity and gender where possible.

Each employer partner committed to connecting face-to-face with the same group of students on three separate occasions during the year - either in the classroom, in the workplace or in the field. See Appendices A-F for case studies of each SSEP.



"Enlighten is delighted to be part of the SSEP pilot. It presents a wonderful opportunity for Enlighten's talent to use their experience, expertise and passion for learning to grow our future talent. Career options are continuing to evolve at a rapid rate and means we must explore new ways to connect with the communities we operate in and support them to equip the next generation with relevant knowledge and skills that allow them to flourish. The pilot provides a well-structured and facilitated foundation for helping to achieve this and proactively works to bring employers and educators closer together."

- Kristy Toroa, Enlighten Designs

Measurement and Evaluation

ALL SURVEYS
TITLE
HBHS IT SSEP Activity Student Survey Created 9/20/2016
Hauraki Plains College SSEP Activity Evaluation TEACHER Created 11/8/2016
Morrinsville College SSEP Activity Teacher Survey Created 9/2/2016
HBHS Metal Tech SSEP Activity Business Representative Survey Created 11/1/2016
Hauraki Plains SSEP Activity Evaluation BUSINESS Created 11/8/2016
Fairfield College SSEP Activity Teacher Survey Created 5/22/2016

Data Collection

Data were collected throughout the year using quantitative and qualitative methods.

Students were surveyed online via SurveyMonkey at the beginning and at the end of the year to assess the impact of SSEP. Students were asked to rank the following aspects relating to the programme:

- Attitude toward the focus subject
- Intentions to stay in school
- Expectations around qualification achievement and
- Intentions to stay in the Waikato region post-education.

Ranked scores were then used to develop a composite index to measure the attitudes towards the programme. In addition, ranks for separate aspects of the programme were used to assess its impact.

Demographic information was collected and assessed for its impact on students.

Students' National Student Numbers (NSN) were recorded to enable longitudinal tracking of the pilot group. The survey was identical for pre- and post-pilot data collection, with an additional question in

the post-pilot survey to capture the immediate impact of SSEP on students.

18. Finally, has the experience of having business people in your classroom and going out to workplaces:

	Yes	No
Made you more interested in business studies?	<input type="radio"/>	<input type="radio"/>
Influenced your school subject choices for next year?	<input type="radio"/>	<input type="radio"/>
Helped you understand why you're studying business at school?	<input type="radio"/>	<input type="radio"/>
Changed the way you feel about what you could achieve?	<input type="radio"/>	<input type="radio"/>
Helped you when thinking about your future career?	<input type="radio"/>	<input type="radio"/>

SSEP activities were also evaluated throughout the year by students, teachers and business representatives via SurveyMonkey.

Post-pilot focus group interviews were conducted with teachers and employers to review the SSEP pilot. Focus groups discussed challenges, areas for improvement and personal highlights. SSEP standard operating procedures, best practice guidelines and sample activity templates will be created based on these interviews to be used in future programmes.

Video interviews with school Principals, teachers, students and employer partners were filmed by a professional videographer at each school.

Data Analysis

Student survey

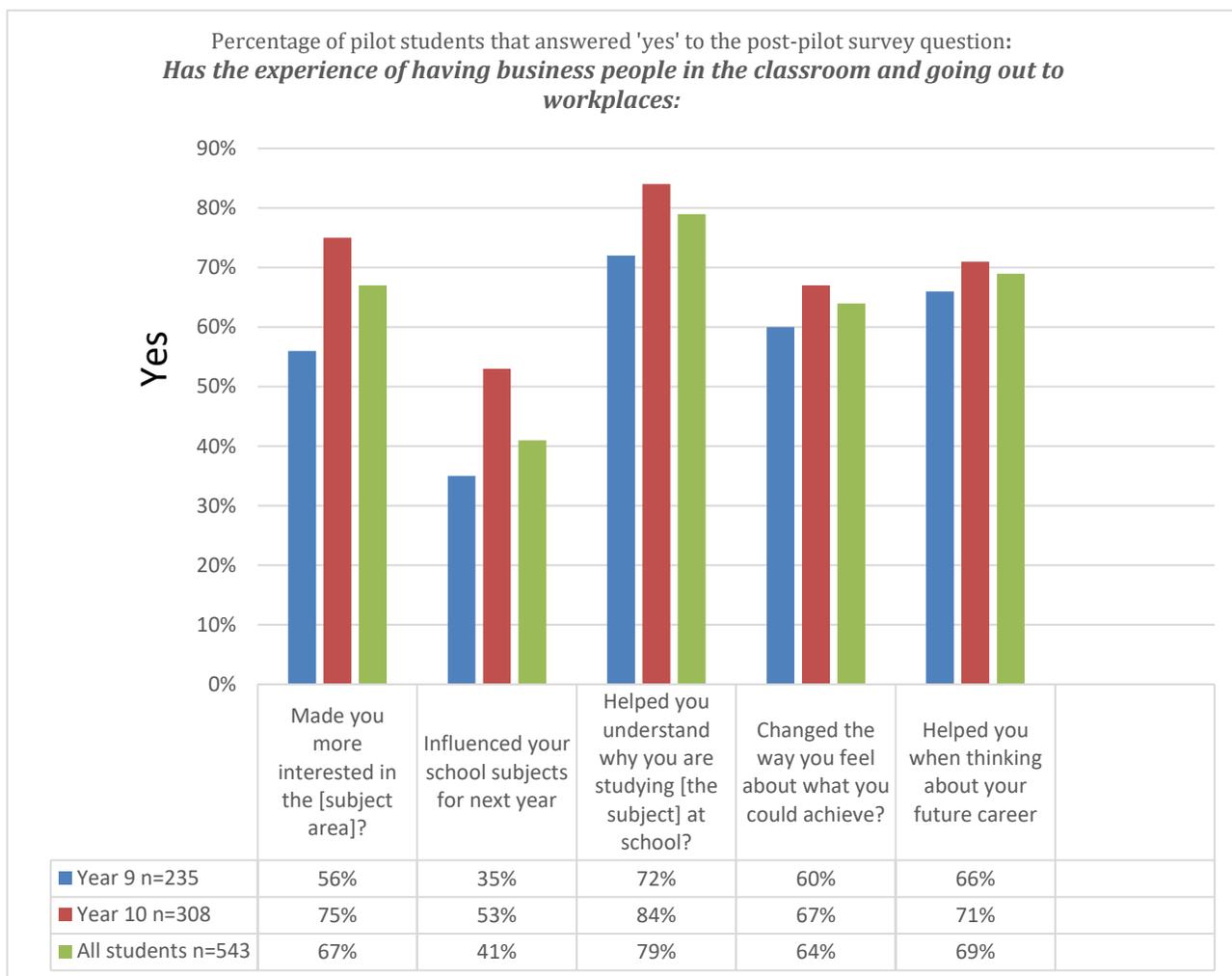
Standard statistical procedures were used to assess the data. The mean differences between the pre and post-pilot attitude measures was assessed by the Wilcoxon signed rank method. The impact of various demographic variables on students' overall attitude towards education and future employment factors were assessed by ordered logit regression.

Student, teacher and business representative evaluations

Quantitative data was aggregated for simple interpretation using SurveyMonkey analytic tools. Qualitative data was collected to capture a more complete and richer assessment of the pilot programme from student, teacher and business participants.

Impact of SSEP pilot

Figure 3. Students post-pilot survey responses to the impact of SSEP



Notes to Figure 3:

1. The above graph illustrates the significant impact of SSEP on students. On average 79% of students indicated positive impact on at least one factor.
2. The impact is lower across the board for Year 9s. This can be partially explained by the fact that students at this level are further from making subject choice/career decisions than Year 10s.
3. The lower impact with respect to school subject choice is probably due to the fact that many did SSEP in compulsory core subjects (e.g. English, Science, Maths) and so may not have any influence over school subjects in the next year – particularly Year 9s.

Students

Short-term impact

Quantitatively the most significant results with respect to the positive impact of the SSEP pilot programme on students came from a direct

question at the conclusion of the post-pilot student survey (see aggregate results in Figure 3 above; for a break down of results for each SSEP see Case Studies in Appendices A-F).

While several teachers and employer partners involved commented that the true impact of SSEP is yet to be realised, qualitative data collected via student evaluations strongly supported the positive results

"I think this will encourage me to do better in school"
Fairfield College student

"I was surprised how much I learnt through this experience, how much it has shown me that English has a large effect on how things run in the world."
Hauraki Plains student

"It prepared us for what real business would be like."
Thames High student

"They [the business representatives] were very knowledgeable and helped me understand more about some techniques and processes." HBHS Metal Tech student

"The trips taken have definitely encouraged me to start thinking about other careers that have to do with science." Morrinsville College student

"[SSEP] was a good program that helped me find what I want to do as a job in my future." HBHS IT student

"Math can be used everywhere!" Fairfield College student

"It was fun and I think that our class was more engaged in our learning because we got out of school and actually went to the businesses" Hauraki Plains student

"The science experiences were all an amazing opportunity for us students to learn how science is applied in companies on a daily basis. I really enjoyed the experience." Morrinsville College student

"I liked seeing how the maths is actually used in the work place." Fairfield College student

"It gave me a bit more information on what I would like to do when I leave school and what I need to study." Hauraki Plains College student

"Going out to these businesses was a good opportunity to see how IT is used in the real world outside of the school environment." HBHS IT student

"I like this because it's very difficult to meet some business people at school, it is a very good opportunity to work with those business people." HBHS Metal Tech student

The results suggest that the SSEP pilot had a significant immediate impact on both Year 9 and 10 students, but the impact was notably greater on Year 10 students.

Long-term impact

While funding is not currently allocated to tracking pilot students long-term, National Student Numbers (NSN) were collected on student surveys to allow for potential longitudinal measurement of the long-term impact of the SSEP pilot.

When collecting pre- and post-survey data to compare a shift in attitude over the year, only NSN numbers of participants were collected to identify individual responses. Of the 731 students participating in the pilot there were 346 matching NSN numbers between survey one and two (representing 47.3% of the cohort). Absenteeism at time one or two of data collection, transient students or incorrect NSN number input during either survey one or two account for the missing data. Only data with pairs were analysed.

While the difference in student scores between the beginning and end of year was found to be statistically significant on only a few of the dimensions studied, several interesting data trends and significant findings were established. The data collected will serve as a good benchmark upon which to track students *actual*, rather than anticipated, achievement, retention and subject/career decision making. Due to the relatively short period of time between the two points of data collection and the young age of the cohort it is likely we will not see a true impact of the pilot for 3-4 years.

Main findings from the pre- and post-pilot student survey data

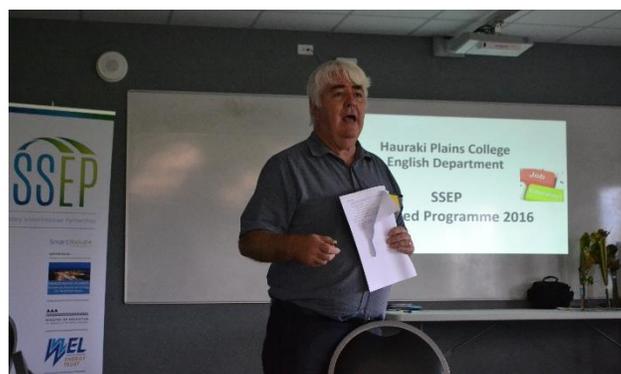
- **HBHS IT students' attraction to local opportunities** showed significant improvement in the post-pilot survey suggesting exposure to the local ICT industry had a positive impact on student perceptions of career possibilities within the Waikato region.
- **Hauraki Plains College students' intention to stay local post-secondary school** also showed significant improvement in the post-pilot survey. This suggests a shift in awareness of local opportunities when students in small communities are exposed to local industry.
- **Fairfield College students' attitude toward the subject** (maths) scores were significantly higher than for Hauraki Plains College (English) and Morrinsville College (science). Of the five schools teacher enthusiasm for, and commitment to the success, of SSEP was observed as being highest at Fairfield College and Thames High School. These results suggest that the impact of the teachers attitudes, and therefore quality of the SSEP programme at each of these schools elevated students attitudes toward the compulsory subjects of maths and business studies to the equivalent of elective subjects of pilot students at HBHS.
- **Fairfield College students' intention to continue studying the subject** were significantly higher than for Hauraki Plains College, Morrinsville College and Thames High School. There was no significant difference between Fairfield College student intentions and HBHS. Again this suggests the Fairfield College SSEP model had the greatest impact on student intentions to continue studying core subjects beyond the compulsory junior years.
- **Impact of gender:** Female students showed lower overall career knowledge, awareness of local opportunities and lower overall level of attraction to key Waikato industries than male students. Female students also indicated lower levels of intention to stay locally post-secondary education than male students.

- **Impact of ethnicity:** Maori student's level of measured attitude indicators were generally significantly lower than NZ European/Pakeha, European, and Asian students across the overall index, including lower intention to continue studying the subject.
- **Impact of location:** In general, the smaller town/rural schools (Hauraki Plains College, Morrinsville College and Thames High School) showed lower overall scores (i.e. less positive attitudes) in relation to the curriculum area and local career possibilities than the city schools.

The impact of gender, ethnicity and location of students on attitudes toward education, local career opportunities and intentions to stay in the region following secondary school education is of interest to educators, economists and employers. Anecdotal evidence from the SSEP pilot suggest that the programme may help facilitate a shift in some of these trends.

In one instance a teacher reported that one of her female Maori students was inspired by a young, Maori female employee of Deloitte and has subsequently decided she wants to become an accountant. Another teacher described the impact of visiting Timpack (a wooden pallet manufacturer) on a Maori boy in her learning assisted class who comes from a family of multi-generational unemployment. After visiting the workplace and speaking to people 'just like him' the boy went back to school and said, "Miss, I could do that!"

Teachers



13 teachers from across the five schools completed a post-pilot survey at the end of the year reflecting on the impact of SSEP on their teaching. Of the 13 only three had prior contact with their SSEP employer partners through extra-curricular activities, employers' children as students or field trips. Prior to SSEP teachers had worked to contextualise curriculum using youtube, websites and examples based on current events, the New Zealand environment or teens lives. Only one teacher specifically mentioned they had previously used examples from local industry.

Following the SSEP pilot 10 of the 13 respondents said that SSEP has changed the way they plan their curriculum.

"The input and ideas presented by the employers will be used to help guide future programmes." HBHS IT teacher

"Being able to integrate the knowledge and experiences of the employers has added to the curriculum" Thames High School teacher

"Reinforces the value of real and relevant contexts for the learning." Hauraki Plains College teacher

"It is essential to get the community involved to give students a real-life perspective. They also appreciate being taken seriously by people outside the classroom and their home situations." Thames High School teacher

"When we review our Junior curriculum I see the need to place greater emphasis on some aspects of the topics where we can use examples from the industries we have visited e.g. minerals in soils related to plant uptake and fertiliser use." Morrinsville College teacher

As illustrated in Figure 4 the opportunity for professional development was also widely appreciated by teachers, with 92% indicating SSEP had an impact on their professional development.

Figure 4. Teacher post-pilot survey response to the impact of SSEP



"It helps me keep up to date with what is going on in industry" HBHS Metal Tech teacher

"[SSEP] helped to create a more complete picture of our subject." HBHS IT teacher

"Even as an English teacher I didn't fully appreciate the importance of communication in business and all the different sorts of communication platforms businesses use". Hauraki Plains College teacher

"[SSEP] helped me to learn how to integrate employers' knowledge into my own planning and being able to learn from and relate to the employers" Thames High School teacher



Secondary-Tertiary-Employer Partnership (STEP)



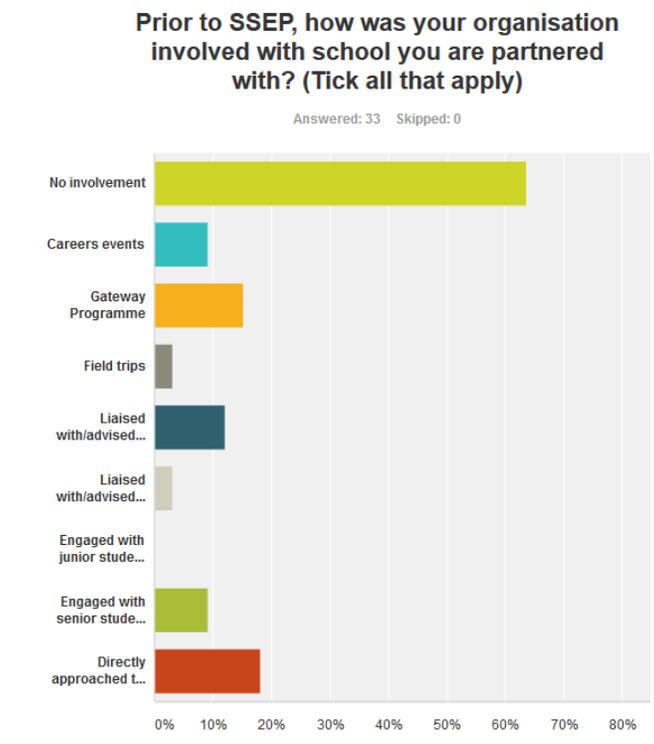
The opportunity for SSEP to support teacher professional development became apparent in early discussions with schools but was particularly needed in the metal technology area. HBHS metal technology teachers indicated there is a shortage of suitably qualified metal technology teachers nationally (e.g. one of the HBHS metal tech teachers is a chemistry teacher), and those who do have a trade/metal qualified background are often nearing retirement. Furthermore, student demand for metal technology at HBHS annually exceeds the workshop space the school has available so student numbers are restricted. While outside the scope of SSEP the potential for these issues to have a wider impact on the skills pipeline for the Engineering sector, which is already experiencing skills shortages in the Waikato region, led to the formation of a Secondary-Tertiary-Employer Partnership (STEP) advisory group. Members included the HBHS SSEP partners plus representatives from the University of Waikato, Wintec and engineering industry training organisation Competenz. A survey of Waikato Secondary School Metal Tech departments was conducted. A report of findings has been submitted to the Waikato Engineering Careers Association for consideration at its 2017 strategic planning meeting.



Employers

Thirty-three employers from across the five schools completed a post-pilot survey at the end of the year reflecting on the value of SSEP for their organisation. Prior to the SSEP pilot 65% of respondents had no contact with the school they were partnered with (see Figure 5). None of the employers had engaged with secondary school students at the junior level. 80% of employers said they would consider partnering with an additional school for SSEP (Figure 6).

Figure 5. Employer response to post-pilot SSEP survey - prior involvement with partner school



Employers estimated spending on average approximately 15 to 20 hours of company time on the SSEP initiative in 2016 including planning, meetings and class contact time. In addition to their involvement with SSEP several teachers reported having leveraged their new relationships with employer partners to extend connections to other areas of the school e.g. as guest speakers in-class with senior students, as mentors for extra-curricula projects and to participate in school careers events. Some employers also took advantage of the new

relationships by approaching the school to offer summer holiday jobs to students and permanent roles to school leavers. Employer respondents also reported an increased understanding of the school curriculum.

The main benefits of being involved in SSEP for organisations included:

“Greater connection to what is being taught in schools and how this could impact students coming through into our industry. Building a stronger partnership with the school and its staff leading to other activities to help support the students.”

“We got to participate in our community and help with the development of young people. Plus we enhanced relationships with more staff at the school.”

“Personal & Professional development for staff involved.”

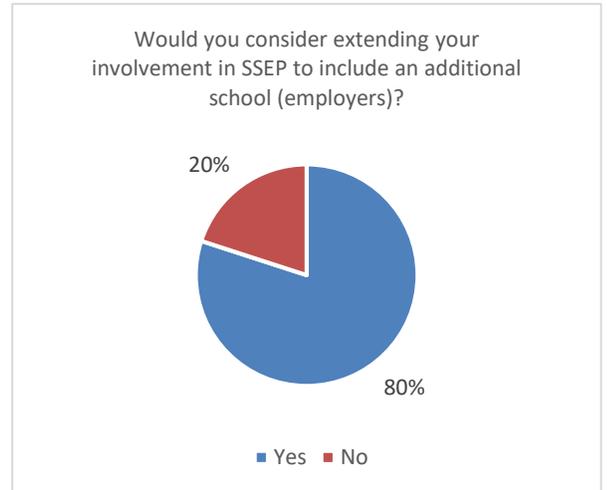
“Knowledge of curriculum and also ability to talk about what we need with teachers. Great to be able to support local communities by being involved with our young adults. Interesting to be able to discuss how students think about our organisation and what we do.”

“Personal development, exposure to a different level of student than we are used to dealing with, which was good and made us strip back what we do to its basics. This was a useful exercise for us.”

“Having an opportunity to show what really goes on in the industry and in this field.”



Figure 6. Employer response to post-pilot SSEP survey - working with additional schools



Outcomes

Immediate outcomes from SSEP as reported by schools

Morrinsville College (science) reported a “significant” increase in demand for Year 11 Engineering subjects for the 2017 school year from students whom had contact with BLM Engineering during the SSEP pilot.

Thames High School (business studies) experienced increase in student demand for Year 11 business studies options in 2017 from the pilot cohort and **has had to introduce a second Year 11 economics class for 2017 as the number of students electing to take the subject has doubled.** Teachers noted that traditionally the subject has been viewed by students as only being for top academic achievers but after the SSEP **business experience is seen by a wider variety of students as interesting and accessible.** Approximately **20 students also achieved 6 Level 1 NCEA business studies credits** (usually not achieved until Year 11) based on the quality of their business reports. In 2017 for the first time in many years **Thames High School is entering the Waikato Lion Foundation Young Enterprise Scheme (YES) at the senior level.** One of the SSEP employer partners has agreed to **mentor senior students throughout the year.** Several students were **offered summer holiday jobs** by one SSEP employer partner and **two cadetships** to school leavers following SSEP involvement

Fairfield College (maths) teachers reported that **regularly truant students were turning up to school on SSEP days** as they had heard ‘how cool’ the activities were from their peers. Teachers also noticed **students were more engaged** in their bookwork following contact with employers.

Teachers reported **increased confidence in reaching out to the wider community** as a result of SSEPs and **greater collaboration** not only with industry, but within their faculty and school.



“I loved the collaboration between staff who had already taught the Business Enterprise unit ahead of me. [In future I want to] liaise early with people in the community who can share skills and coal face experience. Also to network more with the careers department who have already made many community links that teachers are unaware of.”

- Thames High School teacher

Discussion



Impact of gender, ethnicity and location of students

The impact of gender, ethnicity and location of students on their attitudes toward key subject areas, industries and intentions to stay within the Waikato have potentially significant negative implications for the skills pipeline of the region.

Results showed a trend for female and Maori students to be less interested in STEM (science, technology, engineering and maths) subjects and lower female interest in the identified industries critical to the Waikato economy (the majority of which are historically male-dominated).

SSEP employer partners were encouraged to nominate young, female and Maori employees as business representatives to engage with students where possible however several employers were simply unable to do this, with the majority of business representatives involved in the programme being pakeha male. The SSEP workplace visits did however provide students with the opportunity to engage with a wider range of employees and where employers were able to offer female and Maori business representatives teachers reported a positive impact on female and Maori students.

Wider exposure to positive female and Maori role models in critical industries may go some way to help shift these trends.

The increased intention of rural Hauraki Plains College students to stay locally post-secondary

school education also suggests exposure to industry through the SSEP programme has heightened students' awareness of local opportunities they may otherwise have been unaware of. For smaller/rural communities the ability to retain young people in the area will be critical to the economic sustainability of these districts.

Impact of Year level

The data indicated a clear positive immediate impact on students at Year 9 and Year 10 levels, however the impact was markedly higher at Year 10 level. This is likely due to Year 10 students being slightly older and therefore closer to having to make senior school subject and career choices. The curriculum is also more constricted in terms of options for Year 9 students moving into Year 10 where it opens up much more for Year 11 students.

Impact of SSEP model and teachers

SSEP is a flexible programme that is adaptable to the school, employer group and faculty. The SSEP pilot followed five schools across six different subject areas – (see Appendices for case studies outlining each SSEP).

The strongest positive impact on the core (compulsory subjects) was seen at Fairfield College (maths) to the extent that students' attitude toward the subject and intention to continue studying maths was at the equivalent level of students taking the elective subjects of IT and metal technology at HBHS. The positive impact at Fairfield College was significantly higher than the other compulsory school subjects of science, English and business studies piloted in other schools.



Comparing the five schools, Fairfield College teachers were most committed to following the recommended model. At Fairfield College teachers ensured that

- Employers received clear guidance from the teachers about the curriculum being taught so direct curriculum links were able to be incorporated into SSEP activities.
- Students had multiple points of contact with employers both in the classroom and in the workplace (i.e. was not a one-off).
- All students had the opportunity to go on workplace visits.
- Genuine (rather than transactional) relationships were developed between teachers and employer partners. One Fairfield College teacher described this when talking about her email contact with Montana Catering over the year. At the beginning of the pilot she addressed the lead business representative as 'Dear Mr Stark', which over time became 'Peter', then 'Hi Pete' by the end of the year.



Key learnings from the SSEP Pilot Programme

- **Workplace visits:** The biggest impact on students came from the workplace visits and the opportunity to see their learning *applied* in the 'real world'. Logistically for teachers the cost and paperwork associated with workplace

visits were the biggest challenge, however as Fairfield College's head of Mathematics put it, "was totally worth it". These issues are being addressed in year two by schools budgeting and planning visits in advance around timetables and involving staff from other faculties, both to extend the value of employer input across the school and to lessen the reliance (and associated costs) on relief staff. Smart Waikato Trust has also developed an SSEP Education Outside of Classroom student permission form template to support and lessen the administrative load for teachers.

- **3x3:1 ratio:** The ideal ratio of employer contact to classes is three employers with three points of contact each per class. The exception is the Thames High School business enterprise model where both students and business mentors felt three points of face-to-face contact was not enough. As the Thames High School model progressed through the year mentors and student groups were meeting as often as each felt was needed – sometimes 5-6 points of face-to-face contact, with quality relationships formed between several groups of students and mentors.
- **Communication:** Good communication between teachers and employer partners was key to the strength of the relationship between teachers and business representatives and subsequent impact of SSEP on the students. 'Good' communication included:
 1. **Regular contact:** Teachers that developed genuine relationships with employers reportedly enjoyed the experience more, were more likely to invite employers into other areas of the school (e.g. as a guest speaker in senior student classes or as a mentor to students involved in extra-curricular activities), reported the greatest value to their students and had the biggest impact on their teaching practices. Teachers who were reluctant to meet with and/or made minimal efforts to contact employer partners during the pilot limited the value of the programme for themselves,

the employer partners and students. Upon reflection at the end of the pilot some of these teachers shifted their earlier view on the value of SSEP and going into year two are taking a much more positive and proactive approach.

2. **Shared language between educators and employers:** A language barrier between employers and educators created challenges for many of the employer partners as they worked to understand 'education speak', particularly around time (weeks and periods versus dates and times) and levels of knowledge or ability of students (e.g. students working at Level 3 versus an explanation of the complexity of concepts). Employers that were able to get through the language barrier by further questioning teachers were better able to tailor SSEP activities to support teachers' lessons and pitch activities at the right level.
3. **Preparing employers for young students:** Any previous involvement employer partners had at schools tended to be at the senior level – none reported that they had been involved with junior secondary school students. One of the biggest challenges for employer partners was understanding at what level to pitch their language and activities when interacting with students. The Smart Waikato led 'student meet and greet' session was an informal opportunity for business representatives to meet and chat to students in advance of SSEP activities to help facilitate this understanding. Some business representatives ran activity sheets they had designed past teenage relatives to see if they had it right. The multiple points of employer contact meant that business representatives had the opportunity to adjust their language to best support student learning as the pilot progressed.
4. **Student management:** Good communication around student management and behaviour (particularly on

workplace visits) was also necessary for successful interactions between business representatives and students. Advance teacher guidance around how to attract and maintain the attention of groups of students was well-received by business representatives who are not necessarily used to interacting with 13 and 14-year-old teenagers, nor the classroom environment. Employers who were briefed in advance and took on teacher advice to keep activities varied, interactive and practical as possible reported positive experiences with "even the ratbag students". An incident during a workplace visit early on in the pilot highlighted the necessity for teachers to brief employer partners in advance about any students with behavioural issues and how these are managed so there are no negative surprises during interactions. It is critical that teachers maintain management of students during workplace visits rather than leaving this to business representatives.

- **Importance of the intermediary organisation:**



Throughout the 2016 pilot the importance of an intermediary to **engage and introduce employers** into the school environment, **facilitate introductions** between employer and school partners, **provide a framework and resources for SSEP, support developing relationships** and **ensure the sustainability** of SSEP became increasingly apparent. Particularly in schools where teacher communication was not strong, several partnerships would have dissolved if not for the involvement of Smart Waikato. There were also incidences throughout the year where either a

school or an employer partner contacted Smart Waikato to help **resolve issues** with a partner (most often due to communication challenges between the two groups). In some instances teachers resisted organising workplace visits due to the logistics of managing the experiences. Had Smart Waikato not **encouraged the schools** it would have been easy for these not to happen. It was after the fact that these teachers realised the value and impact of the workplace visits on their students and are going into year two with a much more positive and solutions-orientated attitude. Morrinsville College has had almost an entire staff turnover in the faculty that was involved in the SSEP pilot. Without the involvement of Smart Waikato the fledging relationships would have dissipated heading into year two. The **ability to share learnings** from the pilot with new SSEP schools and employer partners in 2017 has already significantly improved the programme and facilitated better relationship development between educators and business people who operate in very different environments. Smart Waikato was also able to **objectively research and evaluate the programmes** and facilitate focus group meetings at year end to allow debriefing of the year and begin planning for the subsequent year.

“It was a great experience to work with the different professionals. We work with teachers all the time so the new relationships with employers allowed us to adopt new ideas we can use in the classroom”

Daya Nand, Fairfield College teacher



“From our perspective the SSEP programme has an important part to play in bridging the gap between secondary schools and employers. This is not something that’s going to happen overnight but with a sustained effort we can collectively ensure that today’s education programmes and the students coming through these have the initial skills and attributes that businesses can use to add value to our country in the future.”

Kaleb James, Stafford Engineering



“I very much enjoyed visiting the building in which the business was located. Physically seeing many of the activities that they did rather than them coming into our school was a greater experience and I was able to learn heaps from looking.”

HBHS IT student



Summary

Results from the SSEP pilot show a significant positive impact on students, teachers and employer partners. These provide substantive evidence to support the introduction of the programme to all Waikato and New Zealand secondary schools.

However, this is not something schools can be expected to do on their own. The process of onboarding appropriate employers to partner with faculty staff is time-intensive. Most schools have neither the resources nor the right contacts to do this. Despite the overall success of the pilot there were challenges throughout the year – primarily communication issues. The intermediary organisation is vital to engage and introduce employers to the school, facilitate introductions, provide framework and resources for SSEP, support developing relationships, resolve issues and objectively research and evaluate the programmes from all participants' points of view.

After its first year SSEP is already showing evidence of supporting Waikato Means Business and Ministry of Education short-term objectives. Namely to:

- strengthen links between education and industry
- improve student understanding of why they are learning key subjects and how they could be used in the future, and
- facilitate changes to teacher planning and curriculum delivery.

The full impact of SSEP is unlikely to be realised for three to four years as the pilot cohort were between 13 and 15 years old. National Student Numbers were collected on student surveys to allow for potential longitudinal measurement of the long-term impact of the SSEP pilot.

Footnote: SSEP year two

As the five pilot schools enter their second year of SSEP with increased confidence the intervention of Smart Waikato is considerably less. Several pilot schools are looking at ways to include other faculties in SSEP activities to maximise the benefits of employer input. Smart Waikato has needed to onboard a handful of new employer partners to compensate for minor attrition due to unforeseen circumstances. Smart Waikato is also working to develop a suite of resources and templates for teacher and employer partners to access and facilitate successful SSEPs in the future. In 2017 an additional seven Waikato secondary schools are introducing the programme.

Recommendations

- Generate further funding so that more Waikato Secondary Schools can participate in the Smart Waikato SSEP programme
- Participating schools and employers follow best practice guidelines as developed by Smart Waikato through this pilot study
- Develop central resource of activity guidelines and examples
- Access funding for longitudinal measurement of pilot cohort via pilot student NSN numbers in 3 to 4 years time to realise full benefit of SSEP.
- For ongoing measurement and evaluation of SSEP introduce a control group where practicable and implement a single end-of-year survey for each school.
- Although impact is markedly larger at Year 10, the opportunity for schools to introduce SSEP at Year 9 with the intention to expand into Year 10 will ensure sustainability, maximise impact and feed into schools' senior pathways programmes.
- Exposure to more female and Maori employee/employer role models in industries critical to the Waikato economy is crucial to support engagement among these groups in important school subjects necessary for post-education employability.

“Overall I have found the whole experience of working with the teachers and especially the students very rewarding. Bring on 2017!”

- Gary Brown, JP Marshall

Acknowledgements



wishes to thank SSEP sponsors:



and SSEP pilot participants:

Fairfield College: Principal Richard Crawford, Head of Faculty Malgosia Cholewa, teachers – Madhima Anderson, Maxine Te Rongomau, Daya Nand, Andrea McKenzie, Susana McKernan, Ed Kryzman and Jenny Rae-Middleton. **Angsea Hospital:** Nicky van Praagh, Kaye Lamb, Maree Smith and staff. **CTC Aviation:** Peter Stockwell, Jonathan Stanwix, Rex Stentiford, Cade Tariau, Hannah Cameron and staff. **Deloitte:** Hilton Joll, Ariana Mariu and staff. **Ecolab:** Stuart Baker, Andrew Langman, Keegan Lewis, Ian Morgan and staff. **Foster Construction:** Graeme Boswell and staff. **Gallagher Group:** Keith Gallagher, Brian Rose and staff. **Hamilton City Council:** Nick Chester and Hamilton Zoo staff. **Montana Catering:** Peter Stark, Fraser Kerr and staff. **Timpack:** Alan Walters, Lyndon Carpenter, Jason Togia and staff. **Westpac:** Lynn Walker, Karen Nickson, Matthew Hansen and staff. **2016 Year 9 Fairfield College students.**

Hamilton Boys' High School: Headmaster Susan Hassall, Head of Faculty Simon Devitt, teachers – Ryan Trass, Mike Erceg, James Hepburn, John Davidson, Don Roughton and Lynette Ross. **KPMG:** Erin Thomson, Dylan Shell, Hayden Megchelse and staff. **Rocketspark:** Jeremy Johnson, Jordan Foster, Matt Elen and staff. **Company-X:** David Hallett and staff. **E9:** Merv Behroozi and staff. **Enlighten Designs:** Kristy Toroa, Sam Leander and staff. **ANZ:** Mathew Haworth, Steven Law and staff. **Printing.com:** Michael Emett, Georgia Clarke and Rose Rogers. **Stafford Engineering:** Kaleb James.

JP Marshall: Gary Brown and Duncan Bennett. **Thorburn Engineering:** Len Guilford, Alex Hardy and Henry Dekker. **Hendl & Murray:** Noel Hendl and Leighton Cosgrove. **Mainline Sheetmetals:** Trisha King, Patrick May and Cam Beasley. **STEP advisory board:** Allen Bryce, Competenz; Hin Lim, University of Waikato; Johnny Gordon, Matt Foulkes and Nathan Lewis, Wintec. **2016 Year 10 HBHS IT and Metal Tech students**

Hauraki Plains College: Principal Ngaire Harris, Head of Faculty Rob Hurley, teachers- Millie Matheson, Brian Woolcock, Tracey Dwyer and Peter Keith. **Hauraki District Council:** Charan Mischewski, Linda Norris and staff. **Hauraki Plains Motors:** Miles Shelley, Dianne Shelley and staff. **Hoogeveen & Associates:** Nick Hoogeveen, Tessa Fisher and staff; **Ravensdown:** Sam Aislabie and staff. **Quinn Engineering:** Alex Quinn, Tracey Spence and staff. **Waikato District Health Board:** Jacquie Mitchell, Maria Prendergast, Marrisa Walton and staff. **Westpac:** Derek Aislabie. **2016 Year 9 Hauraki Plains College students.**

Morrinsville College: Principal John Inger, Head of Faculty Jason Morgan, teachers – Vance Symon, Alison Dawson, Kobie Joubert and Jane Thomas. **Dairy NZ:** Susan Stokes, Andrew Fraser, Kylie Power, Emma Bettle and staff, **Greenlea Meats:** Julie McDade, Aaron Craig, Ken Windelborn and staff. **Ballance Agri-Nutrients:** Paul Alsemgeest, Grant Gillard, Anna-Lena Wright and staff. **Wallace:** Richard Stapel, Lou Lamigo, Sarah Avery, Gordon Henderson, Steven Robb and staff. **Fonterra:** Peter Murphy, Tony Chalmers and staff. **Morrinsville Plumbers and Gasfitters:** Dave Strong. **Electricity Apprenticeship Supply Programme:** Lou Ewington, Nathan Tesselaar and staff. **BLM Engineering:** Nigel Cuff, Kevin Ludwig and staff. **Matamata-Piako District Council:** Fiona Vessey and staff. **Tuit Farm:** Keith Holmes and staff. **2016 Year 9 and 10 Morrinsville College students**

Thames High School: Principal Dave Sim, Teacher in Charge Malcolm Belton, teachers - Jen Fletcher, Rawinia McLean, Kieran Taylor, Leanne Donovan, Paula Willacy and Debbie Driver. **A&G Price:** Chris

Harison, Jacob-Tyrell Baxter, Greg Long and staff.
BNZ: John Lloyd and staff. **SRE Electrical:** Mike Veal and staff. **Pak'nSave Thames:** Matt Heap and staff.
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Appendix A: Case Study - Fairfield College SSEP, Year 9 Mathematics

Overview Fairfield College

2016 Roll: 710 students

Decile: 3

Student body: Co-educational, Years 9-15

Location: Hamilton City

Pilot student group: Full Year 9 cohort of 138 students. 67% Maori

Pilot teacher group: 6 maths teachers

Pilot employer group: 10 local businesses representing a range of key industries in the Waikato district.



Before the SSEP Pilot

SCHOOL

Fairfield College Principal Richard Crawford saw SSEP as a way to help the school achieve its strategic goal to “strengthen career pathways that will inspire students to create their own future and raise levels of retention and achievement.” Richard said, “Engagement and retention will improve if students and whanau are able to see a clearer line of sight between what they are learning at school and how it relates to their post-secondary school destinations. A stronger connection with businesses and employment will enable us to step out of the secondary high school silos that traditionally has restricted the effectiveness of the outcomes that we are seeking to achieve”.

As a school with a high proportion of Maori and Pasifika students Richard noted that “the variance in student achievement of ethnic cohorts in New Zealand presents a significant challenge to the future strength of our economy. [SSEP] provides another purposeful stepping stone to help us manage this very real challenge. Doing what we have done in the past has got us to the situation that we are presently in and new strategies are required if we are going to change our present and future situation.”

TEACHERS

Prior to the SSEP pilot Fairfield College maths teachers had no contact with the employer partners and “tried to make curriculum content relevant to daily life so that students could use maths to solve their daily problems” using YouTube, power points and hands on equipment. Fairfield teachers saw SSEP as an opportunity to “enhance skills, knowledge and build motivation and interest in maths”, “make maths fun and practical” and from teachers working with learning supported students “to help employers engage with LS students, seeing their strengths and abilities, and foster a better awareness of how capable they can be”.

Fairfield teachers also saw the potential for their own professional development wanting to “gain a better understanding of which industries use the maths we are teaching and how”.

EMPLOYERS

Employer partners were carefully selected to ensure a good range of industries that use the key curriculum areas of statistics, measurement and geometry in their everyday work. In order to enhance relatability with students, employers were partnered with teachers according to the academic ability of the class. It was recommended that, where possible, business representatives to work with students were selected to reflect the student body – preferably young employees with a range of ethnicities and gender.

Employer motivations for getting involved in SSEP included a desire to ‘give back’ to the community, to “stimulate young minds and engage with them on a practical basis”, to “show young people how important/relevant maths at school is in their career” and to “inspire young people to enjoy the subject matter and create awareness of potential career choices”.

The Fairfield College SSEP Maths Programme

Working on a ‘three points of contact’ per employer model, throughout the year business representatives came into the classroom to do relevant mathematical exercises with students and hosted students in their workplace so they could see maths in action.

Activities included:

- Measuring distance, time speed, use of maps and geography, creating a flight plan from Hamilton to Matamata.
- Measurement to create wooden pallets of various sizes.
- Measuring and plotting Body Mass Index (BMI)
- Weighing rhinos, plotting panda pregnancies, measuring, creating and modelling a red panda enclosure
- Calculating and measuring food, drink and associate volumes for event catering
- Measuring a security fence - height, distance, materials, calculating cost and labour requirements
- Conversion from volume to capacity in context of building construction
- Budgeting for flatting
- Calculating and approving bank loans

"The amount of maths the students are doing and the way they are on task is fantastic. Some students are just turning up to school on the days when we have the visits as they are hearing from others how great it all is. Our students are excited to be able to visit places of employment that they would never have been able to visit if not for SSEP. As a teacher it is such a valuable experience for the students to see maths in action in so many different ways." Malgosia Cholewa, HoF Maths, Fairfield

After the SSEP Pilot

SCHOOL

Principal Richard Crawford said, "I saw SSEP as an opportunity for our students to be exposed to learning and opportunities that are at the leading edge of industry. I thought it was also important that we get our teachers involved with people in industry so they can develop how they teach, and even what they teach, so they can be more receptive to what industry is requiring of young people. I'd like to say to the business people that what they did through SSEP has had an influence on young people and their thinking." Richard is already looking at ways to expand relationships with the SSEP employers into other areas of the school.

TEACHERS

"The businesses were phenomenal. They took SSEP on board, they moved to cater for our kids and they created environments and experiences that would hook them in" says learning support maths teacher Andrea McKenzie.

Teacher Daya Nand says, "It was a great experience to work with the different professionals. We work with teachers all the time so the new relationships with employers allowed us to adopt new ideas we can use in the classroom."

Teachers noted that "students were totally engaged" and that they "worked well on the activities. I do not believe they would have been so focused doing the same activities if I had just set them as a class activity." "I loved it and want to work like this a lot more."

EMPLOYERS

Fairfield College SSEP employer partners described SSEP as a great opportunity to give back to the community and the experience as being rewarding, humbling and eye-opening. "It was a very good reality and grounding experience for me, and highlighted the plight of many children brought up in lower socio-economic families," said one employer.

"Teachers were great to deal with and it was cool to see them get to come out of the class environment for a bit. They definitely have a passion for helping the students which was great to see."

Several employer partners commented that given the age of the cohort it was unlikely the full benefits of SSEP would be seen for a few years however the opportunity to "plant seeds" and expose students early to their industry is what "the industry needs". A common theme for employers describing the benefits to their business of being involved in SSEP were "good staff development, community involvement and industry promotion".



The student experience

"I really liked the interaction with other workers. and the attitude they had with us."

"I loved touring the business and finding out how they use math"

"I enjoyed the fact that we were doing exactly what they do in their jobs."

"SSEP has given me a lot of opportunities in finding out what I really want to do. I've actually added some jobs to the list of things I would like to explore and have a look at."

"Maths for me was never something that I really enjoyed but now I've realised how much it's going to affect my career. SSEP definitely opened my eyes to how important it is."

Throughout the year several anecdotes were relayed about the impact of positive adult role models through SSEP on the students. One example followed a visit to Timpack, makers of wooden pallets for the horticulture industry. A student shared with his teacher that neither of his parents worked and came from a family of generational unemployment. Due to the experience of going into the workplace and positive interactions with staff he said to his teacher, "I could do that".



Has the experience of having business people in your classroom and going out to workplaces:

	Yes	No
Made you more interested in maths?	74.32% 55	25.68% 19
Influenced your school subject choices for next year?	70.27% 52	29.73% 22
Helped you understand why you're studying maths at school?	87.84% 65	12.16% 9
Changed the way you feel about what you could achieve?	79.73% 59	20.27% 15
Helped you when thinking about your future career?	83.78% 62	16.22% 12

Appendix B: Case Study – Hamilton Boys’ High School SSEP, Year 10 IT

Overview Hamilton Boys’ High School (HBHS)

2016 Roll: 2244 students

Decile: 7

Student body: Boys school, Years 9-15

Location: Hamilton City

Pilot student group: Full Year 10 cohort of 117 students (elective subject). 8% Maori

Pilot teacher group: 4 information technology teachers

Pilot employer group: 7 local employers including IT specialists and heavy software users.



Before the SSEP Pilot

SCHOOL

Headmaster of Hamilton Boys’ High School (HBHS) Susan Hassall primarily saw SSEP as an opportunity to “enable students to make more informed choices for career planning which in turn supports achievement and retention.”

Susan was interested to “add value to what we are already doing by providing clarity of potential pathways and to change the norm of what students feel is possible.”

HBHS Careers Advisor and Gateway coordinator Lynnette Ross said that while she has excellent employer relationships with businesses in other sectors she has found it difficult to make contacts within the IT industry. Prior to SSEP the only IT employer partner HBHS had an existing relationship with was web design company Rocketspark. One of the Director’s is an old boy of the school.

TEACHERS

Prior to the SSEP pilot teachers had no contact with the employer partners. The HBHS Year 10 IT programme offers students a varied taster of IT skills development. Teachers hook students in at the beginning of the year with game development and contextualise the rest of the year’s curriculum back to the games students have created. Teachers have also historically worked to make learning relevant, “Based on my experience in industry, my research into current best practice and preparation for requirements of tertiary education.”

Given the fast-moving nature of the IT industry teachers were looking forward to the opportunity to connect with employers to see first-hand latest trends and developments. Head teacher Simon Devitt said, “Our students and teachers are excited about the opportunities the programme provides. Ongoing mentoring and support from IT professionals is something that will allow some of our most able students to see relevant workplace environments, workflow and real-world application of the skills and concepts they learn in class. “

EMPLOYERS

Kristy Toroa from Enlighten Designs summed up the employer’s perspective for wanting to be involved in SSEP. “Enlighten is delighted to be part of the Hamilton Secondary School Employer Partnership (SSEP) pilot. It presents a wonderful opportunity for Enlighten’s talent to use their experience, expertise and passion for learning to grow our future talent. Career options are continuing to evolve at a rapid rate and means we must explore new ways to connect with the communities we operate in and support them to equip the next generation with relevant knowledge and skills that allow them to flourish. The pilot provides a well-structured and facilitated foundation for helping to achieve this and proactively works to bring employers and education closer together.”

Employers were encouraged to involve their younger staff members as business representatives to connect with students. Several of the business representatives selected were HBHS alumni and were looking forward to the opportunity to ‘give back’ to their old school.

The Hamilton Boys’ High School SSEP IT Programme

Employers worked within the existing structure of the IT programme where different elements of IT (programming, game development, desktop publishing, coding, web design and spreadsheets) were covered in 6-week units.

While the majority of employer partners were IT specialists, ANZ bank and KPMG accounting firm partnered with teachers for the ‘spreadsheets’ unit of the curriculum.

Employer partners came into the classroom at times where the curriculum was relevant to their business or areas of expertise to talk about their organisation, lead class activities relevant to what the students were learning, and give tips and advice on the boys’ project work.

During workplace visits students had the opportunity to engage with a range of IT specialists including software developers, designers, technicians, project managers and cyber-security experts.

Workplace visits were conducted at the end of the year when the timetable was less restrictive.

"I was a bit hesitant at the start about whether the students at this level would have the maturity to step up and do a good job but they've been fantastic. After our workplace visits the students came back buzzing. They all shared their different experiences which ranged from going into a gaming development firm and seeing some cool toys there to a banking environment which gave more of a corporate feeling to the group. It's been a good mixture of activities and a really positive experience for the students." Simon Devitt, HoF Technology, HBHS

After the SSEP Pilot

SCHOOL

Headmaster Susan Hassall says, "Both the staff and students at Hamilton Boys' High School are enjoying the different perspectives provided by employers and businesses involved in IT. The SSEP initiative has enabled staff to connect with IT businesses in a meaningful and productive way, opening student perspectives to a whole new range of possibilities for their futures."

"It's also changed the way the boys interact with each other, the types of conversations that they're having amongst themselves and the way they interact with their teachers who are learning alongside them," Susan says.

Careers Advisor Lynette Ross took advantage of the new connections made through SSEP inviting SSEP IT partners to participate in the school's annual careers day. Teachers also saw "There is potential to use the same SSEP employer groups in the senior school to bring in expert help in the Technology curriculum."

TEACHERS

One of the challenges faced by teachers of information technology is the pace at which technology changes and continues to advance. One teacher said SSEP "has given me a good insight to current industry practices [especially] in website development and game making" and is "helping to create a more complete picture of our subject."

Another said, "[It was] very useful to hear from industry experts in this area of design and print media. It helped teachers connect the topic with actual career pathways and opportunities."

In looking ahead to future curriculum planning, the faculty head said "Some of the input and ideas presented by the employers will be used to help guide future programmes. Also it was good reinforcement that what we are teaching is still relevant to industry."

Teachers are looking forward to "bringing in more outside expert groups for when we cover units when practicable."

EMPLOYERS

Acknowledging the ever-changing landscape of IT, Rocketspark's Jeremy Johnson said, "The web industry is fast moving and it's difficult for the school curriculum to keep up with this rapid rate of change. We like that our input can help teachers to bring their curriculum up to date with the latest tech that the industry is using, so we can see more students considering a future in the web industry. It's also an opportunity for our bright young team members to hone their skills in public speaking, training and communication with those outside of our own company."

E9's Mehrdad Behroozi said, "Working with Smart Waikato Trust on the SSEP has been an eye opener. Having learnt about the challenges that schools and teachers face when it comes to getting students interested in Information Technology, it is clear to us that both schools and businesses such as ours will benefit from this program. Making learning relevant is beneficial to students and employers."



The student experience

"I learnt much more about how our IT lessons apply to occupations in the adult world."

"The activities we did with Enlighten Designs made a connection between our school and their business. We were able to see their enthusiasm, determination and commitment in shaping their business into a successful one."

"They were fun. They gave us professional and experienced advice on how to improve our coding."

"The working day experience was a great opportunity, I went to ANZ, where we learnt how technology is incorporated in the workplace. I am very grateful for this experience."

"Going out to these businesses was a good opportunity to see how IT is used in the real world outside of the school environment."

"I very much enjoyed visiting the business. Physically seeing many of the activities that they did rather than them coming into our school was a greater experience and I was able to learn heaps from looking."

"It was a good program that helped me find what I want to do as a job in my future."



Has the experience of having business people in your classroom and going out to workplaces:

	Yes	No
Made you more interested in IT?	94.85% 92	5.15% 5
Influenced your school subject choices for next year?	62.89% 61	37.11% 36
Helped you understand why you're studying IT at school?	94.85% 92	5.15% 5
Changed the way you feel about what you could achieve?	75.26% 73	24.74% 24
Helped you when thinking about your future career?	87.63% 85	12.37% 12

Appendix C: Case Study – Hamilton Boys’ High School SSEP, Year 10 Metal Technology

Overview Hamilton Boys’ High School (HBHS)

2016 Roll: 2244 students

Decile: 7

Student body: Boys school, Years 9-15

Location: Hamilton City

Pilot student group: Full Year 10 cohort of 65 students (elective subject). 12% Maori

Pilot teacher group: 2 metal technology teachers

Pilot employer group: 5 local engineering firms.



Before the SSEP Pilot

SCHOOL

Headmaster of Hamilton Boys’ High School (HBHS) Susan Hassall primarily saw SSEP as an opportunity to “enable students to make more informed choices for career planning which in turn supports achievement and retention.”

As a large school with limited workshop facilities HBHS traditionally has an oversubscription of students wanting to study metal technology subjects. Susan was interested to “add value to what we are already doing by providing clarity of potential pathways and to change the norm of what students feel is possible.”

HBHS has a strong Gateway programme with good employer relationships in the careers department, however metal technology teachers had no prior connection with the employer partners.

TEACHERS

In addition to physical classroom resourcing issues, HBHS metal technology teachers raised another issue potentially impacting the skills pipeline into engineering - that there is a shortage of qualified Metal Tech teachers (i.e. qualified tradespeople/engineers that are also qualified teachers). While being uncertain as to how widespread the issue was, HBHS said teachers from other disciplines are often filling metal tech teaching roles with limited hands-on skills and experience. One of the two metal tech teachers involved in the pilot had a trades background (coachbuilding) while the other was an Industrial Chemist. HBHS metal tech teachers were excited about the opportunity to have industry experts working alongside them in the classroom not only for the benefit of their students, but also to support their own professional and skills development.

EMPLOYERS

The Waikato region enjoys unusually strong industry-education engagement from the Engineering sector, largely due to the work of the Waikato Engineering Careers Association (WECA). However student engagement is typically at senior secondary or tertiary level.

As employer partners had already committed considerable volunteer time to industry-education activities it was agreed that partners would ‘share the load’ of SSEP with each employer offering one or two of its apprentices to be rostered on to classroom activities over the year.

Employer willingness to extend their commitment to SSEP was due to a long-term benefit view. Stafford Engineering’s Kaleb James said, “From our perspective the SSEP programme has an important part to play in bridging the gap between secondary schools and employers. This is not something that’s going to happen overnight but with a sustained effort we can collectively ensure that today’s education programmes and the students coming through these have the initial skills and attributes that businesses can use to add value to our country in the future.”

The Hamilton Boys’ High School SSEP Metal Technology Programme

At HBHS Year 10 students are introduced to hard metals through a project where students make a scooter from pre-formed materials. Under SSEP industry representatives came into the classroom during this time to talk to students about engineering, their jobs, and supported students as they learnt tool handling skills including welding, filing and cutting.

The HBHS SSEP also started an after-school ‘Tech Club’ for up to 20 students interested in developing metal tech skills making either a brazier, golf club or tool box. Initially the intention of the Club was to open the school workshop to boys who had missed out on getting into a metal tech class. However, the Club ended up more as an optional extension class for boys already involved in the SSEP as teachers anticipated that the variation of workshop skills unknown Club members came in with would be too wide to be manageable.

“Being involved with industry has meant that the boys and myself have come to realise there’s a whole lot of different niches within engineering – it’s so much more than just lathes and welding. At school we are restricted to being able to teach only what we have experience with. For instance, the welding we have here is limited to easy MIG and a bit of arch welding but no TIG welding which is far more prevalent in industry – the businesses are able to have input into what we’re teaching and are offering to expose the boys and myself to equipment and skills we don’t have.” John Davidson, HoF Metal Technology, HBHS

After the SSEP Pilot

SCHOOL

Headmaster Susan Hassall said, “the most obvious advantage for our boys is that they’re learning about something that could be their future” and that it’s not just the students who have benefited from SSEP.

“For my staff the benefits have been unexpected. I think the staff went into it for the sake of the boys but have come out feeling as though they’ve gained from it themselves. The conversations that I’ve heard between the teachers and employers just show that it is a really vital learning journey that they’re on.”

TEACHERS

By the end of the SSEP pilot teachers had developed a warm relationship with employer partners describing local engineers as “a hugely supportive industry”.

Head teacher John Davidson said, “Students were very engaged and the industry guys worked alongside them assisting and explaining. They were ‘real’ people. they were wearing work clothes and sometimes had dirt and grime from their place of work. The students related to this well.”

The opportunity for continued professional development was also much appreciated by the teachers “It helps me keep up to date with what is going on in industry”. Employer partners have invited HBHS metal tech teachers into their workshops “any time” for skills development.

EMPLOYERS

The SSEP experience was equally rewarding for the employer partners. “The teachers were both very welcoming and just as keen to learn as the much as the students were. I had a good time talking and planning with them.”

“Personally I have thoroughly enjoyed the entire process. Especially seeing the light come on in the boys faces when they get something right or begin to understand the concepts fully.”

“Overall I have found the whole experience of working with the teachers and especially the students very rewarding. Bring on 2017!”

Employers saw the immediate benefits of SSEP in the “[professional] development of our staff member involved with the school. The long-term benefit is the focus, by exposing students to us and the industry as a whole. Early exposure is what the industry needs.” “We are hoping to get more students interested and exposed to trades and apprenticeships as a career path.”

Footnote: During the SSEP pilot a Secondary-Tertiary Employer Partnership (STEP) advisory group was formed to investigate the potential wider impact to the skills pipeline for the Engineering sector due to the limitations of secondary school resourcing and teacher skills as suggested by HBHS teachers. Members included the HBHS SSEP partners plus representatives from the University of Waikato, Wintec and engineering industry training organisation Competenz. A survey of Waikato Secondary School Metal Tech departments was conducted. A report of findings has been submitted to the Waikato Engineering Careers Association for consideration at its 2017 strategic planning meeting.

The student experience

“I like this because it’s very difficult to meet business people at school, it is a very good opportunity to work with them.”

“[The business representatives] were very knowledgeable and helped me understand more about some techniques and processes.”

“It was good to hear some of their experiences and hear how they got where they are now. “

“They told me lots about subjects that are needed for work in the industry”

“[I learnt] these industries can improve your skills. Practice makes perfect. Henry’s been in the industry for a while and his welding skills are really good.”

“[I] learnt about what Leighton did at work on the daily, he had photos to show us and just helped out heaps.”

Several boys commented on the positive experience of interacting with industry role models “Duncan was helpful and good to be around” and “I would like have more time with [the business representatives]”.



Has the experience of having business people in your classroom:

	Yes	No
Made you more interested in metal tech?	69.23% 45	30.77% 20
Influenced your school subject choices for next year?	60.00% 39	40.00% 26
Helped you understand why you’re studying metal tech at school?	76.92% 50	23.08% 15
Changed the way you feel about what you could achieve?	66.15% 43	33.85% 22
Helped you when thinking about your future career?	72.31% 47	27.69% 18

Appendix D: Case Study – Hauraki Plains College SSEP, Year 9 English

Overview Hauraki Plains College

2016 Roll: 698 students

Decile: 5

Student body: Co-educational, Years 9-15

Location: Small rural town of Ngatea on the Hauraki Plains.

Pilot student group: 123 Year 9 students of mixed ability. 15% Maori.

Pilot teacher group: 4 English teachers

Pilot employer group: 7 local businesses representing a range of key industries in the Waikato district.



Before the SSEP Pilot

SCHOOL

Hauraki Plains College Principal Ngaire Harris saw SSEP as a “natural development of the pathways approach that we already have in place.” Ngaire said “we hope to increase engagement, enhance learning, raise achievement and prepare our young people for the world beyond the school gates. This requires developing partnerships with local employers; SSEP would enable this to happen.”

The school was particularly interested in developing the existing relationships it already enjoyed with local employers through the Gateway programme.

TEACHERS

While the Principal and Gateway coordinator had strong existing relationships with the local employer community, three of the four teachers involved in the pilot do not live locally and commute to work. Employer partners were therefore largely unknown to the teachers prior to the SSEP pilot.

In terms of making curriculum relevant to students, teachers had previously taken the approach of “catering to student’s individual interests and by linking to real world situations (e.g. letter writing)”. So long as key curriculum/assessment areas of research and presentation were met the teachers were eager to take a blank slate approach to developing SSEP activities with employers to incorporate the world of work into their classes.

Hauraki Plains teachers were looking forward to developing “relevant contexts, local contacts and further knowledge of the local area”, “increased awareness of how local businesses operate” and to “see how learning is enhanced by its having a real-life context”.

EMPLOYERS

Due to the school’s interest in strengthening its existing relationships, potential employer partners were initially identified and invited by the school to participate in the SSEP pilot. The anticipated time commitment of being involved in the pilot was a barrier to some (particularly smaller) businesses. The final suite of employer partners included five Gateway contacts. The remaining two were targeted to round out the range of industries involved. As a small community, all employer partners had some form of connection with the school, either through Gateway, as former students of the school or as parents and members of the school Board of Trustees.

Employer motivations for getting involved in SSEP for this school varied depending on existing relationships. For those strongly connected with the school motivations were often very personal “satisfaction of helping and giving back to the College I attended, and my children” and “to hopefully turn around one student at least to get re-invigorated about learning that can apply to their post-school life”. For others industry awareness was a common theme, “[I want to] promote dental therapy as a profession and promote healthy lifestyles”, “I would like to see the students gain a better understanding of the role of the Council and the importance of democracy”.

The Hauraki Plains College SSEP English Programme

Working on a ‘three points of contact’ per employer model, over the course of two terms students worked on individual reports and group presentations researching and creating a presentation on a business.

Activities included:

- Interviewing business people - linking to curriculum areas of research, listening, speaking, writing.
- Workplace visit – linking to curriculum areas of listening and speaking
- Visual oral presentation from each student on the findings of their research report – linking to curriculum areas of speaking and visual language
- Evaluation and critical thinking skills were also applied with students offering ideas and suggestions for business improvement.

“In addition to helping bring the curriculum to life there were some unexpected benefits that I think will serve students well down-track. Several students commented that even if they weren’t particularly interested in the industry they studied they now have the confidence and know-how to go about properly researching ones that do.” Brian Woolcock, English teacher, Hauraki Plains College

After the SSEP Pilot

SCHOOL

Principal Ngaire Harris said, “The SSEP programme within our English department has enabled the introduction of real and relevant learning into the students’ programme. The experience of hearing about the world of work from so many different people has sparked considerable interest from students and teachers alike. There is no doubt it is connecting the school with our wider community.”

“At the Board level of our school, we want all our students to be thinking about where they might be heading and their future careers starting at Year 9 and not waiting until just before they’re leaving school. At Year 9 we’re not expecting hard-core decision making, just an awareness around where they might be heading and how they can best prepare for that, and SSEP fits well with this philosophy.”

TEACHERS

Three of the four teachers involved in the pilot do not live in Ngatea, so the opportunity to meet and make connections with people from the local business community was, as one teacher put it, “as good for me as it was for the students”.

The teacher who had lived locally for 20 years also ended up on a journey of unexpected discovery. “It was really interesting to learn about how many small businesses there are on the Hauraki Plains and how much goes on that I hadn’t been aware of”.

“Even as an English teacher I didn’t fully appreciate the importance of communication in business and all the different sorts of communication platforms businesses use”.

Teachers are looking forward to building on the pilot by extending SSEP in 2017 to include Year 9 and Year 10 students.

EMPLOYERS

One of the key themes that came back from employers was a sense of enjoyment, “I thoroughly enjoyed the question sessions with the students, they were well prepared”, “[I enjoyed the] contact with the students, planting seeds and discussing options with those who had a concrete plan in place with regards to their career choice”, “The interactive activities were great. Lots of intelligent questions”.

When reflecting on the value of SSEP from an employer’s perspective, a commenter from the health sector said, “I had not appreciated their interest in a health career. Their engagement will be vital in the future to recruit to the declining health workforce”.

Another employer said, “The intent of what the program is trying to do is first class and it will evolve. Win-win for all, Employers been engaged to have input of our needs, followed by clarification to teachers about what needs to be caught and finally relevance to students about their pathways into the real-world post school.”



The student experience

“I was surprised how much I learnt through this experience, how much it has shown me that English has a large effect on how things run in the world.”

“I think going to the workplace was the best part of it it’s where you learnt the most and it was interesting.”

“I liked how they could explain and show in depth how important English is to them and how they need it to do simple day to day jobs in the workplace. Astonishing how much it is used in working life.”

“I think the next year of kids need to know how important English actually is once you leave school and that you should use your time wisely in English.”

“It was fun and I think that our class was more engaged in our learning because we got out of school and actually went to the businesses”

Many students took the opportunity to research businesses they may otherwise not be exposed to or to find out more about industries they were. One group of girls specifically chose to research Hauraki Plains Motors – a vehicle and farm machinery sales and servicing business – as they wanted to take the opportunity “to explore a typically male industry”. Another student already considering a medical career now has refined her interest to teeth and bones after researching and visiting the Waikato District Health Board’s mobile dental unit.



Has the experience of having business people in your classroom and going out to workplaces:

	Yes	No
Made you more interested in English?	44.04% 48	55.96% 61
Influenced your school subject choices for next year?	42.20% 46	57.80% 63
Helped you understand why you’re studying English at school?	64.22% 70	35.78% 39
Changed the way you feel about what you could achieve?	53.21% 58	46.79% 51
Helped you when thinking about your future career?	60.55% 66	39.45% 43

Appendix E: Case Study – Morrinsville College SSEP, Year 9 & 10 Science

Overview Morrinsville College

2016 Roll: 656 students

Decile: 6

Student body: Co-educational, Years 9-15

Location: Small rural town of Morrinsville.

Pilot student group: 154 Year 9 and 10 students (the top three science classes from each year level). 11% Maori.

Pilot teacher group: 6 Science teachers

Pilot employer group: 10 local businesses linked to agriculture in the Matamata-Piako District.



Before the SSEP Pilot

SCHOOL

Situated in the heart of Waikato's dairy industry Morrinsville College aims to establish itself as an educational leader in agricultural science. Principal John Inger said, "There is huge potential for employment in the primary industries in our Morrinsville community and SSEP partnerships will lead to students setting firm career goals and aiming to develop the skills that would see our Morrinsville youngsters gaining opportunities to remain in our rural town, or in the nearby Waikato region, in well-paid rewarding jobs. We believe that through contextualised learning programmes and a strong focus on a careers pathway, students will be able to set clear career goals and better understand the sorts of skills-sets that employers require and that they need to possess in order to operate in a 21st century workforce."

As the school develops its Science Academy (largely targeted at senior students) it has also been working to develop relationships with local businesses in the primary industries. Along with wanting to strengthen relationships with some existing connections the school identified several companies it had been having difficulty connecting with and saw SSEP as a good vehicle to introduce these companies to the school.

TEACHERS

Through the agri-science projects at the senior level of the school two of the teachers knew some of the employer partners and had previously taken students on field trips to three of the businesses. The other teachers involved had no previous contact with the employers.

In terms of making curriculum relevant to students, "In the topics we teach I have always included NZ contexts/examples where relevant, more particularly around the Dairy Industry and environment". Teachers also took some groups of students on occasional field trips.

EMPLOYERS

Employer partners were carefully selected to ensure a good range of industries whose work includes key curriculum areas of heat exchange, metals, fair testing, fertiliser and/or dairy.

Local farmer Keith Holmes said, "As an employer, a member of Morrinsville College BOT and a community person, the SSEP Initiative is a 'ground breaking' programme with enormous potential. Those that know me well know that I have long been an advocate of "merging" the classroom with real life to increase the "connectivity" with students and the world they live in and will work in. This will strengthen both course structure and conceptual development of both the employers and students."

Morrinsville Plumbers and Gasfitter's Dave Strong said, "It is important to show that subjects like science and maths etc., are required for most types of careers and that it is important to maintain good study habits right from the start as it will stand them in good stead with whatever career path is chosen."

The opportunity to 'give back' to the community and showcase local industry to students were common motivating factors for employer involvement.

The Morrinsville College SSEP Science Programme

During the course of the year a high turnover of staff in the school's science department impacted on the programme resulting in only four of the classes (54 Year 9 students and 56 Year 10 students), three of the teachers and five of the employer partners being involved. Teachers took a 'field trip' approach to the programme with employers hosting students at the workplace on half day visits. While some workplace visits directly referred to curriculum being taught (e.g. product testing in the Fonterra laboratories related to curriculum areas of Acids/Bases and water treatment linking to ecology curriculum) others were focused on areas of science taught at other year levels.

Despite challenges from the school's side the employer partners involved provided an exciting range of science-related activities on farm, tannery and composting sites, in laboratories and workshops, and at a geothermal energy generator site. In the words of one student, "You got to see and feel how the science happened".

“Understanding what goes on in a place like Wallace helps me to understand more about the nearby world. Regardless of whether I invest myself in a job like this or not, I feel like I have gotten to know the world around me better, which is what science is about, really.” Morrinsville College SSEP Student

After the SSEP Pilot

SCHOOL

Principal John Inger said, “There is no doubt SSEP has opened our students’ eyes to all sorts of opportunities in the science world. They can see that what they are learning does have a place outside of school.” John said, “We are very grateful to the businesses, there is no doubt their presence in our school and our presence in their workplace makes a significant difference to our students and helps them on their learning pathway.”

Morrinsville College Careers Advisor Jane Thomas noted a significant spike in interest from students wanting to enrol in mechanical engineering courses. The extra students came from a class who visited BLM Engineering as part of SSEP.

TEACHERS

Upon reflection of their experience during the pilot teachers noted that part of the value of the student activities would be realised in later years. “The best thing is for the kids to have a few lights switched on in terms of what they might want to do in the future.”

Looking ahead to 2017 the impact of SSEP on teachers is shaping thinking around curriculum planning. “When we review our Junior curriculum I see the need to place greater emphasis on some aspects of the topics where we can use examples from the industries we have visited e.g. minerals in soils related to plant uptake and fertiliser use.”

Although not directly involved in the SSEP pilot, the head of technology went along as teacher support to the BLM Engineering visit and while there asked the company if his Year 11 engineering students could do something similar. They have organised a visit for next year.

The science teacher in charge of that visit said, “SSEP is a good connection with staff at the college and people working in industries. Usually teachers and schools are seen as a separate entity to the community so this is breaking down some of those barriers”.

With almost an entirely new science teaching team next year there is opportunity to refine the school’s SSEP to maximise the potential benefits of the programme.

EMPLOYERS

Employer partners are also looking forward to improving the Morrinsville programme through “more co-ordination between in class learning and the field trips.”

Employers enjoyed increasing their “knowledge of curriculum and also the ability to talk about what we need with teachers. [It is] great to be able to support local communities by being involved with our young adults. Interesting to be able to discuss how students think about our organisation and what we do.”

“I enjoyed seeing the students engaged in the conversation and witnessing something a bit different.” “It was a good day for all and my Staff enjoyed it as well.”

“I found it quite fun and rewarding showing students how the process works and the science behind it.”

“Always enjoy the opportunity to trigger the passion in kids.”

“[My] team enjoyed interacting with the local community and giving something back.”

“[I enjoyed] having an opportunity to show what really goes on in the industry and in this field.”

The student experience

“I liked learning how each of the jobs work and how science is applied to this.”

“We got to see the work they did to process the animals close-up, which gave me greater understanding. Being able to see, and sometimes touch, the things they work with was very interesting.”

“It was very good to understand what is behind the big business name of Fonterra we see often without understanding what happens within. It was also good to know that there is a depth to the science involved”

“It was an amazing experience that we as students could learn how science is used in companies such as Ballance on a day to day basis. I believe that everyone enjoyed it!”

“[SSEP gave me] insight to jobs involving science that I hadn’t had before.”

“I have a bit more knowledge about how fertilising works and what the farmers use to provide food. I have learned that our generation is the one who has to solve the problems of resources of the world.”



Has the experience of having business people in your classroom and going out to workplaces:

	Yes	No
Made you more interested in science?	58.62% 68	41.38% 48
Influenced your school subject choices for next year?	39.66% 46	60.34% 70
Helped you understand why you're studying science at school?	67.24% 78	32.76% 38
Changed the way you feel about what you could achieve?	49.14% 57	50.86% 59
Helped you when thinking about your future career?	51.72% 60	48.28% 56

Appendix F: Case Study – Thames High School SSEP, Year 10 Business Studies

Overview Thames High School

2016 Roll: 580 students

Decile: 5

Student body: Co-educational, Years 9-15

Location: Small seaside town of Thames on the Coromandel Peninsula.

Pilot student group: Full Year 10 cohort of 134 students. 30% Maori.

Pilot teacher group: 6 social studies teachers (1 economics teacher, 5 specialists in other areas of social studies – including history, geography and Classics).

Pilot employer group: 14 business mentors from 9 local businesses.



Before the SSEP Pilot

SCHOOL

The main reasons Principal of Thames High School Dave Sim wanted to participate in SSEP were because he saw the programme “as an opportunity to engage students more effectively through making explicit the connections between their learning at school and what people are doing in the ‘real’ world.” Dave was hoping to see “stronger student motivation, much better careers/subject links and clarity around pathways, a great deal more curriculum relevance and the opportunity to grow partnerships with employers.”

Prior to SSEP most of Thames High’s employer partners had little or no connection with the school. A few had connected with the school’s careers staff, otherwise any teacher/employer engagement was infrequent, tended to be at the senior school level and in the form of an occasional fieldtrip, gateway placement or employers directly contacting the school when seeking potential employees on an ad hoc basis. For the past few years the only business studies subject taught at the senior level of the school has been economics “due to low student interest in business subjects”. Accounting and other business studies options are available to students by correspondence.

TEACHERS

In previous years, as largely non-subject matter experts, Thames High social studies teachers have traditionally taken more of a textbook approach to teaching the economics unit of the Year 10 social studies curriculum, working to create relevance by referring to example businesses, using online videos, websites and current events.

With the odd exception, teachers had little or no previous connection with the business mentors they were partnered with. For those who did know each other the relationship was often casual through extra-curricular activities or as parents of students. One teacher commented that she was ‘nervous’ prior to meeting the mentors she would be working with as she ‘doesn’t ordinarily mix with the business community’.

EMPLOYERS

Employer partners were carefully selected to ensure a good range of male and female mentors across various industries critical to the Waikato economy including engineering, manufacturing, trades, health care, primary industries, community services and general business.

Employer motivations for getting involved in SSEP included a desire to ‘give back’ to the community, to help students understand what is required of them when they enter the workforce, to help youth find a direction, and the personal “satisfaction that my children (year 7 and 9) may have the programme available to them”.

The Thames High School SSEP Business Programme

Under SSEP Year 10 social studies teachers were encouraged to take an experiential business enterprise approach to their 10-week business unit. With the support of business mentors from local companies the teachers delivered the business unit to meet curriculum requirements to ‘Understand how people see and have sought economic growth through business, enterprise and innovation’¹. Economics and social studies teacher Malcolm Belton had taught the small business unit 10 years earlier and was excited to reintroduce it to the school with the added twist of using local business people as subject matter experts in the class and as mentors for student groups.

The programme also provided students with the opportunity to gain six Level 1 Business Studies achievement credits through their business unit report assessment.

¹ Level 5 NZ social studies business curriculum topic

"This business model is group based where the students take ownership - both in terms of who they work with and what they decide to produce. The profit motive is also a great incentive! Apart from the business skills learned, the social skills (confidence building, time and self-management, leadership, communication etc.) and key competencies are equally important. Having a real world context and opportunity to work with members of the business community is invaluable. The unit also gets students thinking about their future pathways and subject choices and will hopefully motivate them to goal set and achieve well during the remainder of their schooling and beyond. The model is flexible and can be adapted to meet different situations and class ability levels." Malcolm Belton, Thames High School Economics and Social Studies teacher.

After the SSEP Pilot

SCHOOL

"I think the magic ingredient with this programme has been the business mentors and the connection with the real world. The connection with the employers and their daily jobs and businesses has been fantastic for our students" said Dave Sim.

Student enrolments for Year 11 Economics in 2017 have doubled as a result of the SSEP pilot. Teacher Rawinia McLean said, "I've noticed students participating in SSEP are more outgoing, more willing to talk to other people and have more of an 'I can do this' attitude." Rawinia noted that student perception of business subjects being only for high academic performers has shifted with several of her students electing to take economics next year. The school is also planning to reintroduce the Lion Foundation's Young Enterprise Scheme in 2017.

Approximately three quarters of Malcolm Belton's 'advanced' class gained six Level 1 Business Studies credits, based largely on the contents and quality of their individual reports.

Internal and external relationships at Thames High School have strengthened considerably as a result of SSEP. In addition to the benefits of working alongside people in the community "who can share skills and coal face experience" one teacher commented that they "loved the collaboration between staff who had already taught the Business Enterprise unit" and realised the need "also to network more with the careers department who have already made many community links that teachers are unaware of".

TEACHERS

Teacher confidence in partnering with employers to deliver contextualised curriculum has increased significantly. One teacher said, "being able to integrate the knowledge and experiences of the employers has added to the curriculum. [SSEP has] helped me learn how to integrate employers' knowledge into my own planning and being able to learn from and relate to the employers which has encouraged me to add greater context to learning about business concepts."

The benefits of the SSEP business pilot are organically spreading through the school beyond the pilot programme with some teachers maximising employer relationships by inviting business partners into other classes to help provide 'real world' context to curriculum at the senior level of the school. Cross-curricula spin offs are also occurring with teachers incorporating aspects of the business unit (e.g. statistics and report writing) to help contextualise maths and English concepts in the cohort's other classes.

EMPLOYERS

Thames High SSEP employer partners described the SSEP experience as being hugely rewarding and a great opportunity to 'give back' to the community.

Local Pak 'n Save owner-operator Matt Heap said "Employers have a lot to benefit from this type of programme. We work in a very people-focused business. SSEP is a way for us to find the great young people in Thames and develop them for the leadership positions in our business." The opportunity to forge a stronger relationship with the school has resulted in Matt offering 10 students summer jobs at Pak 'n Save and a cadetship opportunity to a school leaver.

The student experience

"I liked how we were free to make choices and all the decisions were made by us. The teachers didn't set us a task to complete that was fully planned so we actually had to take things into our own hands. We learnt heaps of stuff we will use later on in life."

"We were involved with what we were learning, we were able to experience everything instead of just learn about it."

"Overall it was a great learning experience and I loved working with my mentor and going on the awesome guided tour of the Toyota factory"

"Our mentor gave us different examples of business concepts from his workplace which was very helpful."

"I never knew what [our business mentor] did as a job and to see what he did was really interesting and what it was like in a working place and all the different roles and jobs they have as individuals was a really great experience I definitely enjoyed it!"



Has the experience of having business people in your classroom and going out to workplaces:

	Yes	No
Made you more interested in business studies?	67.07% 55	32.93% 27
Influenced your school subject choices for next year?	50.00% 41	50.00% 41
Helped you understand why you're studying business at school?	87.80% 72	12.20% 10
Changed the way you feel about what you could achieve?	71.95% 59	28.05% 23
Helped you when thinking about your future career?	67.07% 55	32.93% 27