

Using motivational interviewing to assist engineering students in finding a more inclusive way forward

Prof. Philippa Anne Martin, University of Canterbury

Philippa A. Martin received the B.E. (Hons. 1) and Ph.D. degrees in electrical and electronic engineering from the University of Canterbury, Christchurch, New Zealand, in 1997 and 2001, respectively. She completed a Postgraduate Certificate in Tertiary Teaching in 2015 and a Postgraduate Certificate in Strategic Leadership in 2018. She was a postdoctoral fellow in the Department of Electrical and Computer Engineering at the University of Canterbury in 2001-2004. In 2002, she spent 5 months as a visiting researcher in the Department of Electrical Engineering at the University of Hawaii at Manoa, Honolulu, Hawaii, USA. Since 2004, she has been an academic at the University of Canterbury, where she is now a Professor and the Dean of first year engineering. Her current education research interests include video tutorials to augment in person teaching, team work skills development, inclusive cohort formation, and diversity, equity and inclusion initiatives for tertiary engineering education. Her current technical engineering research interests are around physical layer wireless communications systems and algorithms for a broad range of applications.

Dr. Eileen Frances Britt,

Eileen Britt is a Clinical Psychologist and member of the Motivational Interviewing (MI) Network of Trainers, an international collective of MI trainers and researchers who promote excellence in the practice and training of MI. Eileen teaches MI at the University of Canterbury on the Postgraduate Diploma in Clinical Psychology programme, as well two postgraduate papers on MI within Health Sciences, and has experience in providing MI training to a range of health practitioners. She has been involved in a recent project training MI to staff from the College of Engineering at the University of Canterbury.

Training University Staff and Faculty in Motivational Interviewing: Advancing Diversity, Equity and Inclusion

Abstract

Many minority and under-represented minority University engineering students are experiencing a chilly climate, which is partially a result of experiencing higher levels of micro-aggressions, harassment, discrimination and unkind acts. It can be challenging to address these issues effectively through formal University discipline procedures. This paper discusses an informal approach to addressing such acts as an early intervention and education approach. Specifically, 17 University staff and faculty in engineering were trained to use Motivational Interviewing for change conversations around disrespectful and disruptive behavior. This paper describes the training program and early results. There are promising signs of the applicability of MI conversations to address not only problem behavior and engineering culture, but also dishonest practice, stereotype threat, academic progress, academic study skills, team dynamics and study habits. Given these promising early results discussion is underway with the University about expanding the program further.

1 Introduction

Every year universities admit hundreds to thousands of new engineering students to their engineering programs. All come in with different views of the world and pre-conceptions of how to behave as an engineering student. Problematic and unwanted attitudes and behavior on campus include sexism, racism, harassment, bullying, hazing and unwanted touching. These behaviors can lead to many minority and under-represented minority students in engineering experiencing a chilly climate [1].

The impact of a chilly climate and disruptive behavior (such as micro-aggressions, harassment and unkind acts) mounts up and can leave students feeling unwelcome or even unsafe on campus [2]. This can have a negative impact on their health, self-esteem, education and quality of life [2] [3].

On the other side, if the students engaging in this inappropriate behavior are not made aware that their behavior is unacceptable, this may lead to more serious misconduct while at University. In addition, if this behavior continues in the workforce, they are at risk of potentially serious penalties for such behavior and viewpoints. A very public graphic example of this is the Google echo chamber case, where an employee was dismissed due to expressing viewpoints that did not align with company values [5]. Professional engineering bodies are increasing the obligations on members to report breaches to their code of ethical conduct and making it more difficult for members to avoid disciplinary processes, for example Engineering New Zealand changed their

code so that “engineers must take action if they observe something of concern” and they must report if they “suspect another engineer has significantly breached the code” [6]. Therefore, it is in the best interests of all parties to address disruptive and disrespectful behavior early on to avoid escalation.

Around the globe engineering schools have been looking at how to combat these chilly climates, but the problem has stubbornly remained despite decades of interventions. The University response when concerns are raised is not always helpful and can even further harm the student [4]. In an attempt to improve this, Ferris [4] recommends training organizational representatives.

Universities have formal policies and formal behavior management processes. This paper describes adding less formal processes to handle the early warning signs and smaller behavior problems and incidents before they reach formal levels. This acknowledges that students come from different backgrounds with different perspectives and that Universities are places for learning and self-discovery. The key goal here is ensuring a healthy culture and environment for all engineering students. Grenny [7] found that crucial conversations confronting disruptive behavior were an important part of working to eliminate this disruptive behavior. In particular, “real change will occur when we substantially increase skills in conversation – especially the emotionally and politically risky conversations we so consistently avoid” [7].

As a result, a small group of 17 staff and faculty in the College of Engineering at the University of Canterbury were trained in Motivational Interviewing (MI) as a method to engage in difficult change conversations in relation to disruptive and disrespectful behavior. This requires quite a different skill set than engineering training provides. Engineering thinking identifies and solves problems. A directive “fix-it” communication approach is not always what is needed when the conversation is about behavior change. Such an approach can lead to students defending their behavior (righting reflex) and/or telling us what they think we want to hear in order to end the meeting. This is unlikely to lead to any real behavioral change.

Motivational Interviewing was chosen as the method for these difficult conversations as it aims to build and strengthen motivation and commitment to change from within a person [8]. It does this through exploring motivations the person may have to change. At its core are the principles of inspiring change, respecting people, acceptance, compassion and acknowledging that every individual is the expert on themselves. It is a form of person centered counselling, but does not require any previous counselling experience to learn. It was felt that the empowering nature of this approach would fit well with the engineering staff and faculty involved, who all had the best interests of their students in mind.

A key program design choice was to involve both staff and faculty from across the engineering college who have a wide range of roles. The program was designed to include academics, Deans, administrators, tutors, technicians and library staff. All staff who are student facing were invited to volunteer for training. It is difficult to predict who a student will feel comfortable talking to and so a wide range of people is an asset. Professional staff, such as technicians, administrators and tutors, can see quite a different side to students than the faculty (Professors and Deans). The perceived or real power of a title/ position/ role can create a barrier.

Although the primary focus was on behavior change conversations to address the chilly climate, MI conversations also have the potential for helping students with motivation around study habits, or other behaviors which may be impacting on their academic success. The group found this helpful as they could practice and develop their skills on these more frequent conversations in preparation for the challenging, but less frequent disruptive or disrespectful behavior conversations.

2 Staff training program for Pou Kaiāwhā MI coaches

A comprehensive staff training program was designed using existing and new training courses. Specifically, existing cultural training programs were used to which a MI course and a bespoke workshop using internal experts were added. The training can broadly be split into developing cultural understanding (in our local context), developing psychological first aid expertise, learning how to engage in difficult change conversations (MI) and a workshop on local expertise and resources. There were four compulsory components and a raft of additional recommended training courses available.

The group of staff trained were called the College of Engineering Pou Kaiāwhā MI coaches. As explained by the Office of the Assistant Vice Chancellor Māori: “A pou kaiāwhā is the carved pou [post] on the outside of a whare nui [meeting house], right in the center facing the elements. As the name suggests it stands strong as a pillar and withstands the storms and adversities. Often we call leaders in a community a pou, pou tokomanawa and pou kaiāwhā.” This acknowledges that participants in this program are leaders working in an early intervention support role.

2.1 Culture and identity training

Bicultural competency course – Tangata Tū Tangata Ora: The University of Canterbury is committed to graduating bi-culturally competent and confident students. In order for staff to contribute to the “Te Rautaki Whakawhanake Kaupapa Māori: Strategy for Māori Development” and to further develop their bicultural competence, it was important for participants to develop a greater understanding of their own culture and Māori culture and language. The Tangata Tū Tangata Ora course also covers the Treaty of Waitangi, which provided a basis for Pākehā (non-Māori) and Māori to build the nation of Aotearoa New Zealand, as well as the difficult history and ongoing impact of colonization. This was a compulsory course for participants.

Pasifika Talanoa development day: New Zealand is located in the Pacific Ocean and has a significant Pacific island (Pasifika) population. As a result, having some understanding of the challenges and cultures of our Pasifika students is important. For example, Pacific island cultures are collective societies (time is not your own), in contrast to the very independent New Zealand European Pākehā culture. This was a recommended course.

Cross-cultural interaction course: This course covers how to build positive relationships and interactions with people from different cultures. It considers contexts, perceptions, language differences, hierarchy, gender and other areas where culture differences can lead to misunderstandings or create barriers. This was a recommended course.

Rainbow (safe zone) training: In New Zealand the term “rainbow” is preferred over LGBTQIA+. Hence our training is called rainbow training rather than safe zone training. In the training, staff were encouraged to look at their own identity and understand the rich breadth of identities in our community. During the two half days of training, participants considered issues for the rainbow community in their local context and then brain stormed things they could personally do to improve inclusivity, tolerance, training and processes on campus to benefit rainbow staff and students. This was a recommended course.

2.2 Psychological first aid training

Some of the difficult conversations required will involve students in distress. In addition, MI conversations can lead students to revealing broader issues and concerns, which are impacting their behavior, well-being, ability to study and campus experience. As a result, an important component of this training program was a psychological first aid course. We used an existing workshop called “Students in crisis workshop module 1: Psychological First Aid and Applying the Te Whare Tapa Whā Model”. It contextualizes psychological first aid under the Māori holistic health and wellness model named Te Whare Tapa Whā. This was a compulsory part of the training.

Participants were also encouraged to attend the existing “Students in crisis workshop module 2-3: "Working with Students Experiencing Grief and Trauma, and Maintaining Self-care" and the "Keeping Communication Lines Open" workshop. External workshops that are recommended, but not easily accessible include workshops on “understanding dynamics around sexual violence and handling disclosures” and suicide support.

2.3 Motivational Interviewing training

The course was run by Assoc. Prof. Eileen Britt who has extensive experience training MI and is a member of the MI Network of Trainers, an international collective of MI trainers which promotes best practice in MI training and practice. Due to the challenges in getting 17 people from six different departments or service units in one place, the course was run as two weekly 1-hour sessions for a total 15 sessions. This allowed the participants who had little to no counselling background to gain confidence and skills. They were able to practice reflective listening and MI skills between sessions and share experiences with the group. This also built a learning community, which will be important for debriefing after difficult conversations. As one participant said, “The way the course was delivered in small doses over a long period made it more possible to practice the skills and to reflect, as well as to get to know others.”

By the end of the training participants were exhibiting MI skills and were starting to report differences in how they approached conversations in their everyday lives as well as with students and colleagues. Participants found the MI skills were making a positive difference to interactions with students even though these skills were still in development, which helped build confidence in using the skills.

Four coaching sessions were held after the end of the course to help staff refine and further develop their skills. These were not as well attended, but were during a very busy part of the academic year. As a result, further sessions are now planned near the end of the summer break.

2.4 Pou Kaiāwhā MI coaches training workshop

To end the training program a 3-hour bespoke workshop was run using key experts and service providers from across the campus. It was designed to ensure participants would know who to refer students to for follow up support and also how to better understand the perspectives and lenses of different student groups. In addition, there was a crucial panel session on how to handle the stories we hear from students who are often distressed and handling multiple complex issues.

The workshop program was as follows:

1. *Introduction*: The intent of the Pou Kaiāwhā MI coaches program and their roles as MI coaches.
2. *Cultural context*: Information on cultural perspectives and the different lenses through which we see the world.
 - a. Māori students.
 - b. Pasifika students.
 - c. International students.
3. *Equity and disability services*: What they do, what is on offer, perspectives and how to support students.
4. *Student care and health center services on campus*: Services that are available at UC for students in distress. Also when and where to refer students. Information resources were given, including a guide for STEM staff/ faculty on what to/ not to say.
5. *Disciplinary processes*: An overview of formal disciplinary processes by a University proctor.
6. *“How to handle what you hear” panel session*: Top tips on how to look after yourself. Top tips on leaving stories at work. Confidentiality tips. Debriefing options for staff including a funded external counseling service (EAP).
7. Shared food and discussion time was planned, but not achieved in the first workshop run.

3 Motivational Interviewing

We now describe key concepts and skills in MI, how it fits in the New Zealand cultural context, how it can be used to advance diversity, equity and inclusion (DEI) and the effectiveness of the training program.

3.1 Core MI concepts and skills

This subsection provides an overview of key concepts of MI and how they fit in a DEI context. Interested readers are referred to [8] for more information on MI.

It was important that all involved in the MI training understood and were committed to the spirit of MI. The spirit of MI consists of [8]

- *Partnership*: Respecting a student’s expertise on themselves and their lives.
- *Acceptance*: Accepting the student as they are. This can be broken down into
 - *Absolute worth*: Believing the student can change.

- *Autonomy*: Respecting that students must make their own decisions. We exert influence not control.
- *Accurate empathy*: Understanding the world from the student's perspective.
- *Affirmation*: Helping students see change is possible by identifying the strengths and resources they possess.
- *Compassion*: Committing to the best interests and welfare of the student.
- *Evocation*: Evoking reasons and potential ways to change from within the student.

It was considered that the spirit of MI fitted with pastoral care of students and DEI goals (in particular with difficult conversation around behavior change) and it captured the goals of empowering, respecting and accepting our students.

The spirit of MI captures the intent with which the core MI skills are used with students. These core MI skills are summarized by the OARS+I acronym, which stands for

- **O**pen ended questions to allow the student to share their views of their behavior, to encourage consideration of different perspectives and consideration of behavior change.
- **A**ffirmations to build confidence through acknowledging progress and strengths, and to communicate empathy and respect.
- **R**eflections used to demonstrate understanding, empathy and facilitate engagement, and to evoke and strengthen change talk.
- **S**ummaries to communicate non-judgmentally what has been heard.
- **I**nformation exchange, where the student is an active participant in the process. Share information only with their permission.

Information exchange can be summarized with the acronym PAPA which stands for

- **P**ermission to discuss.
- **A**sk what the student knows.
- **P**rovide advice or information in a neutral way.
- **A**sk how this advice/ information sits with them.

This way of being with students, leaves power and control with the students. University faculty and staff are often directive in their approach with students, giving advice, telling the student our solution or how to make them or the situation “right”. This is called the compassionate righting reflex. It can be difficult to resist and was an adjustment for many participants. The MI approach is summarized by the acronym RULE as follows

- **R**esist the compassionate righting reflex.
- **U**nderstand the student's motivations.
- **L**isten to the student. The student should do more of the talking.
- **E**mpower the student by making them the active person in the conversation.

At its core MI is about having change conversations, where the Pou Kaiāwhā MI coach gently guides the conversation to evoke the motivation, commitment and means to change from within the student. Therefore, a key component of MI is being able to recognize and elicit change talk,

i.e., statements that indicate the student is moving towards considering positive behavior change [8]. Open ended evocative questions are useful to elicit change talk towards a specific goal. Examples of evocative questions are: “Why is it important for you to become an engineer?”; “Why do you need to pass this course?”; “What do you think the consequences could be if you continue this behavior when working as an engineer?” Once change talk is elicited, then it is reflected so that not only does the student hear themselves speaking their own arguments for change, they also hear again that they said this.

3.2 Respecting culture through MI

The University of Canterbury is committed to graduating bi-culturally competent and confident students, where confidence is based in their own culture and the Māori culture. As a result, it is essential that the approach to these difficult conversations be rooted in tikanga Māori (the Māori way of doing things). Māori, like many indigenous cultures worldwide, have and continue to experience cultural and socio-economic deprivation and trauma [9]. Motivational Interviewing has been found to be more effective with marginalized groups and those who have experienced societal pressure [9].

An example of how MI sits well with Māori culture is the Pōwhiri (welcoming) process, which involves creating a safe place (moving from tapu (sacred, prohibited or restricted) to noa (free from tapu, making it ordinary and unrestricted)), building a relationship of trust and creating a collaborative alliance [9]. Just as when visiting a marae (communal and sacred meeting ground) there is an invitation to participate (a reason for gathering, a place and a host). Then there is a ritual of engagement, where you explore if they come freely, with reservations or are simply going through the motions. Finally, there is the ritual of relationship where you exchange korero (conversation) such as whakapapa (genealogy) and shared history, explore what we need to know about each other and what might get in the way of agreeing. Interested readers are referred to [9] for more detailed information on the interplay between indigenous culture and MI.

3.3 Motivational Interviewing to advance diversity, equity and inclusion (DEI)

There are several different ways that MI can be used to advance DEI in a University context. The following are a few that are already showing promise, namely addressing stereotype threat, imposter syndrome, academic study habits, team conflicts and behavioral change conversations (for example, addressing student club culture and micro-aggressions).

Stereotype threat and imposter syndrome: MI is designed to address ambivalence, build confidence and empower people. This combination is useful when under-represented, minority or first generation students are suffering from stereotype threat or imposter syndrome. For example, one participant used MI skills to support a student feeling ill-prepared to progress despite passing classes. Reflective listening can help cultivate talk on strengths, while guiding the conversation to soften negative self-talk.

Academic study skills: Research has shown that first generation and lower socio-economic students face challenges in regards to preparation for University, family knowledge/experience of University processes, quality of school education and financial status [10]. Access to tertiary

education and achievement rates for ethnic minority students is lower [11]. Māori students are 17% less likely to complete a degree qualification or higher within 6 years compared to European Pākehā [11]. NCES has found African-American students are the most likely ethnic group to leave STEM majors by dropping out (29%) or switching out of a STEM major (36%) [12]. As a result, academic study support is a key part of DEI advancement. Participants in the training have been finding MI useful for conversations addressing academic performance issues and evoking motivation and commitment to exploring new academic study skills and accessing support services. This can help a wide range of students.

Team conflicts: We've seen discrimination and harassment flair up in team work on many occasions and so having tools to address it is important for DEI advancement. It is much more challenging to use MI with groups, however, a participant found that MI conversations were useful in helping teams explore different ways of interacting and understanding the root cause of the problem. In particular, having conversations around changes they can make to improve team outcomes rather than blaming others. As stated by the participant, "Mainly, I have used it [MI] to understand what's truly happening with students (through reflective listening) and then to help them to better comprehend and cope with the frustration and challenges of working in a team, focusing on the action they can do to improve their team outcomes rather than blaming others."

Behavioral change: MI provides a different way of having conversations related to behavior change. University discipline procedures are directive. MI provides a different approach, which tries to build motivation and commitment to change behavior from within the student. The desire is to be proactive and address behavior issues at an early stage before they require formal disciplinary processes. For example, addressing micro-aggressions or talking to student clubs around their inclusivity and social norms before incidents occur. Not only does this send a clear message to students on expectations, but it also honors Universities being a place of education. Early experience in this area is showing that multiple touch points are required. Once again it is more challenging when dealing with groups of students at the same time. It is better if students can be seen separately and given a chance to explore their own world views and motivation for change.

3.4 Effectiveness of MI training

Staff who completed the MI training were invited to complete a simple survey to assess their experience of the training and their confidence in using the skills learnt during the course. 10 of the 17 staff responded to the survey and were happy for us to share their responses. As previously mentioned the two 1-hour sessions each week worked well for participants as it allowed them to practice skills as they learnt them, embedding new habits and ways of being with students and others in their lives. As participants stated, it helped "having ample time to practice MI in a low stakes environment; I thought a lot of people asked really good questions that led to some good discussions; having a collection of questions/ reflections/ conversation boosters to fall back on." "Exercises done as a full group. A great way to hear different perspectives and approaches and how they fit are MI consistent, as well as practicing our own skill expression." It also allowed a community to be created, as stated by one participant, it was helpful "developing a supportive community of people to practice with and debrief with later on. I appreciated the supportive atmosphere, where it was safe to mess up."

The course facilitator is an Associate Professor of Psychology and so was well aware of the unique student – staff/ faculty relationships and student issues that could arise within the university context. She customized the course to the participants and the university context. As one participant said, “Building and tweaking the course as we went to better handle the requirements of the specific group we had made every lesson helpful.”

All 10 respondents reported that they felt able to start using MI skills with students. In addition, most of the MI key skills, concepts or ways of being were mentioned by at least one respondent. In particular, the following were explicitly mentioned: reflective listening, PAPA (defined in Section 3.1), recognizing and eliciting change talk, affirmations, open ended questions, evocative questions, resisting the righting reflex, and being open and non-judgmental.

Reflective listening which is a core skill in MI is broadly applicable across conversations with students. It allows people to feel heard and allows the other person to be active participants in the conversation. Reflective listening allows space for the wider context of the issue to be revealed. As a participant noted, it is “worth to note that sometimes, students don’t have a clear vision of the root cause of the problems they have faced and MI technique is quite good in bring clarity not only for me, but also for themselves.” Therefore, it is unsurprising that it was the MI skill participants felt they were most likely to use with 8 of the 10 respondents explicitly mentioning it.

The second most mentioned MI concept in the survey (4 of the 10 respondents) was the PAPA technique. Participants were used to being directive and giving advice and so it was quite a change to ask permission, check what the student knew first before giving advice and seeing how it fitted with the student. This new way of being with students conveyed respect for what the student brought to the conversation and left power and control with the student.

The third most mentioned concept in the survey was recognizing and eliciting change talk (3 of the 10 respondents). This allows the Pou Kaiāwhā MI coach to build and strengthen change talk in the student, helping them find their own motivations and commitment to change. Open ended or evocative questions were seen as useful MI skills to elicit change talk.

Finally, affirmations were seen as a way to build confidence in the student’s ability to change. Affirmations can build confidence in being able to achieve change by verbalizing strengths that the student possesses that will help them achieve their goal or that acknowledge they care about their studies/ health/ reputation/ career. Affirmations can also help break down barriers between the student and staff/ faculty when students hear that their worth is valued and recognized.

In the participants own words, they have learned new ways of being and conversing with students:

“This course was life changing. It has changed how I relate with other people. I feel much more comfortable having difficult conversations with students and am learning to identify change talk. I have heaps still to learn and practice, but I feel confident that I will keep improving my skills over time.” “It completely changed the way I think about and approach conversations with students.” “Discovering a better method to have awkward conversations.” “I still need to practice my skills, but it has been exciting, conversations develop in such a different way... I gained insights and got to [sic] place I never expected to get to.”

4 Conclusions and next steps

During 2019, 17 College of Engineering staff and faculty were trained in a new method (MI) for engaging in difficult conversations with students around behavioral change. This was part of creating informal behavior processes for early intervention and to complement existing formal processes. An extensive training program was developed which trained participants in MI, and also addressed psychological first aid and self-care, local cultural context, understanding different cultural perspectives and ensured that all involved were well aware of local support services and processes for handling distressed students and how to escalate the response (either for support, care or discipline). This combination was important in order to keep both staff/ faculty and students safe.

Professional staff and faculty with a wide range of roles were able to develop the MI skills without prior counselling experience. Early signs are that MI is useful for behavioral change conversations both around disrespectful and disruptive behavior, and academic study behavior. Although the primary aim of the Pou Kaiāwhā MI coaches was to have early intervention conversations around disruptive behavior, participants have reported finding MI very useful in addressing behavior and beliefs around academic study skills and habits, stereotype threat, imposter syndrome and in helping students to manage team conflicts. This is proving to be a powerful addition to DEI advancement within the College of Engineering.

Given the results to date, talks are now in progress with the University about expanding the training to other colleges and more staff within engineering. Several participants have expressed that this training program has changed how they interact with students for the better and that they are seeing positive results from engaging in MI conversations with students. This is an exciting step in our cultural journey.

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