Developing a community of practice: A report

CHERYL BROWN, EDTECH. 3RD OCTOBER, 2016

Acknowledgements

Thanks to Mark Leath and the Automotive Team for allowing me to observe them and their work and for participating so enthusiastically in the project.

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Abstract

Question**:** What has enabled the development of a community of practice in the School of Engineering?

This report uses the work of Wenger, Trayner, and de Laat, (2011) and Wenger & Traynor (2010) to understand the events and processes that contributed to the development of a community of practice focusing on digital capability in the Automotive Team in the School of Engineering Te Kāhui Pūkenga o ngā Pūkaha at WelTec.

It traces the evolution of a project aimed at developing digital capability and setting up a proof of concept Moodle course and describes how the community of practice evolved.

It uses the idea of cycles of development proposed by Wenger, Trayner, and de Laat, (2011, p.34) to describes the development in the school and identifies 7 (seven) themes that emerge form discussion and reflection. These seven themes correlate to items listed in the three key enablers Wenger et al propose.

Suggestions for the way forward and further research are made.

Developing a community of practice: A report

The purpose of this report is to outline the events and processes involved in EdTech's work with automotive tutors in the School of Engineering Te Kāhui Pūkenga o ngā Pūkaha. These events and processes focusing on the development of a Moodle course resulted in the emergence of a community of practice based on digital capability and provide a model for further developments at WelTec and Whitireia, especially within trades areas.

Associate Head in the School of Engineering, Mark Leath initiated a project with EdTech to create an online course in Moodle for students in the Certificate of Automotive Engineering (year one). He also wanted to ensure the development of digital skills within the tutorial automotive team.

As this course development project progressed it became clear to me that a community of practice was developing based on digital capability and I began to reflect on what elements had assisted in this process.

Question

What has enabled the development of a community of practice in the School of Engineering?

Methodology

Wenger, Trayner & de Laat, 2011, suggest a framework for measuring the development of a community of practice that supports the "inclusion and triangulation of multiple sources and types of data" (p.8). People with organisational leadership roles need information that so that they can support the development of such communities and the participants need to understand the process of evaluation so they can reflect on their own participation and development.

The authors suggest collecting narratives that share perceptions on: 1). personal assets (human capital) 2). relationships and connections (social capital) 2). resources (tangible capital) 4). collective intangible assets (reputational capital) and 5). transformed ability to learn (learning capital). In narrative gathering interviews and discussions with tutors I asked prompt questions relating to these assets.

1). personal assets (human capital)	*What skills have you gained*
2). relationships and connections (social capital)	*Did any relationships within the teams change over the two years?*
3). resources (tangible capital),	*What resources were developed?*
4). collective intangible assets (reputational capital) and	*Has the status of the team at WelTec changed in anyway?*
5). transformed ability to learn (learning capital).	*Did your learning style change?*

I interviewed different groups: the Engine Repair Team, the 'wider' team and Associate Head of School, Mark Leath. I also answered these questions myself and collated my description of the process.

When I had transcribed the discussions I searched for themes and compiled this report.

My role

I am an Instructional Designer in EdTech, the WelTec based team that manages Moodle, works with staff to develop courses for Moodle and capability in learning design.

My roles in the project were varied: reporting to the reference team, coordinating the development of two workshops, training, advice, technical help, project management and general support.

EdTech and the School of Engineering (Automotive Team)

EdTech is a service group in WelTec, recently moved to the People and Capability Team

The EdTech team works closely with the Capability Development Unit and for this project with the Academic Advisor for the School. Two staff (Emma McLoughlin and James Mackay) had some previous involvement with some automotive team members while researching vocabulary in trades areas.

The School of Engineering Te Kāhui Pūkenga o ngā Pūkaha is based at Petone campus under Head of School, Graham Carson. The automotive team sits under Associate Head of School, Mark Leath along with the mechanical engineering teams.

The automotive team were formerly housed in two buildings - G block campus and Petone and moved to the same campus and open plan room in 2014/2015. This move has a bearing on the development of the community of practice.

While some members of the automotive team had used the learning systems Janison and Moodle they used material developed by using HTML code by one person and with links to the Australian based resource material CDX (an online repository of files, animations and material for automotive teaching). Its single person development meant that the team's digital ability was not developed and that staff needed HTML skills to make changes to the material.

All tutors teach different courses and most teach across levels. Many teach on block courses such as the On Job Training Courses run by the NZ Army. All tutors are male, all have worked in industry. Some have worked at WelTec for more than 20 years. New members are inducted into the team via mentoring by longer serving members.

While the word 'team' is used, it became clear to me that the 'team' was in essence an evolving community of practice.

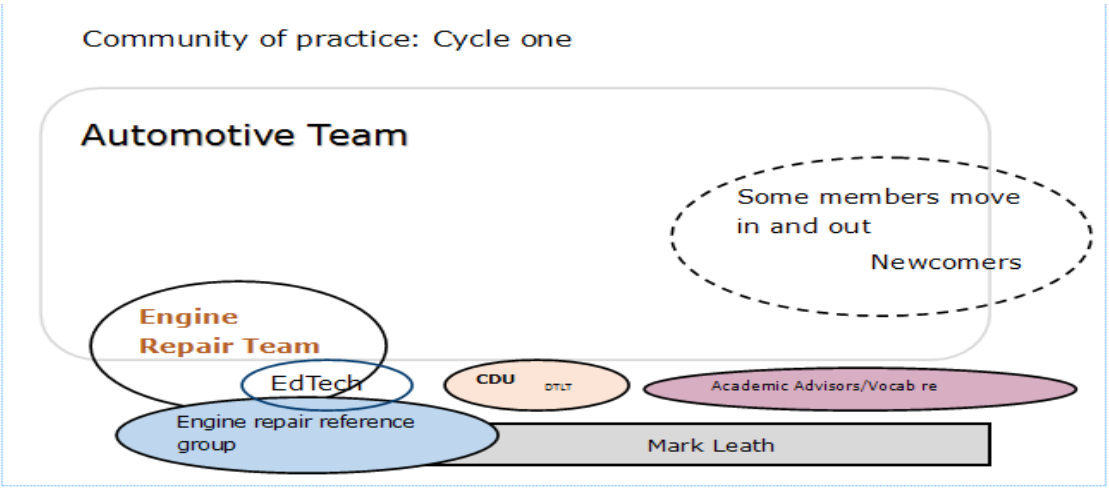

Fig.1. 'Teams" 2015.

Literature review

What is a community of practice?

Communities of practice (CoP) according to Wenger-Trayner (2015, para.4) are "… groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly". It represents a collective intention to maintain learning about a body of knowledge (Wenger, Trayner & de Laat, 2011, p. 9) and a learning partnership. For Eckert (2006, p.1) a community of practice is "a collection of people who engage on an ongoing basis in some common endeavour".

Lave and Wenger (1991, p. 35) view learning as "an integral part of generative social practice in the lived-in world" and they use the term *legitimate peripheral participation.* This term arises from an apprenticeship model of training where, the authors say, the master apprentices have a duty to train people so they can participate in the community's culture. The peripheral participant is the newcomer, the person outside the community who is inducted, usually informally, into the community of practice. Wenger and Lave (ibid) say that learning is usually seen as an individual exercise but that peripheral participation requires the whole person engaging in a social activity…'acting in the world' (p.98) and that the community as a whole inducts the newcomer into the community which is fluid, changing as newcomers become experts. For them, being able to analyse the productive cycles of the community enables the onlooker to delineate the community.

For Wing-Lai, Pratt, Anderson & Stitger, J. (2006) communities of practice are distinguished from other groupings because they "are about a shared practice; have diverse and heterogeneous membership; are not (necessarily) task-oriented; and are learning communities" (p.vi). So, a team evolves into a community of practice when it develops a culture of learning that is not single task orientated. The community of practice they say has three phases: formation, sustaining/maturing and transformation (p.viii).

Wenger & Trayner, 2010, (as cited in Roder & Rata-Skudder, p.9) identify three essential enablers for the development of a community of practice under resources, community roles, and community culture:

resource (time, finance, committed investment of resources, enabling technologies, engaged sponsorship), **community roles** (identified champions, energised core, internal leadership, effective facilitation, support and stewardship, voluntary membership and member-driven agenda) and **community culture** (high expectations, passion, practice focussed, trust, established outcomes and ground rules, value for time, personal touch, fun, celebrating success).

How can we describe the process?

Roder and Skudder (2012) describe how Unitec set up communities of practice as a means to increase institution wide involvement in eLearning. Membership of the CoPs was directed by management, and efforts were made to allow communities of practice autonomy in structure and objectives.

A key part of the process was a week-long workshop facilitated by Etienne Wenger and Beverly Trayner. This was deemed to be invaluable in setting the scene, and enabling staff to share language, objectives and processes. Moodle was used as the place to store and share information.

Positive feedback was received about having a centralised place to drop into, ongoing symposiums, and just-in-time help. Workshops became the most commonly used vehicle for training within faculty. The authors also felt that the CoP approach enabled participants to feel part of a change process.

It appears, say the authors that "true communities of practice are now developing in the wake of the eLearning strategy and that the emergence of these communities has been facilitated by the opportunities afforded by funded time release for staff development and community participation"(p.17).

How do we measure communities of practice?

Wenger, Trayner & de Laat, M. (2011, p.34) created this cycle based approach for measuring the development and maintenance of a CoP.

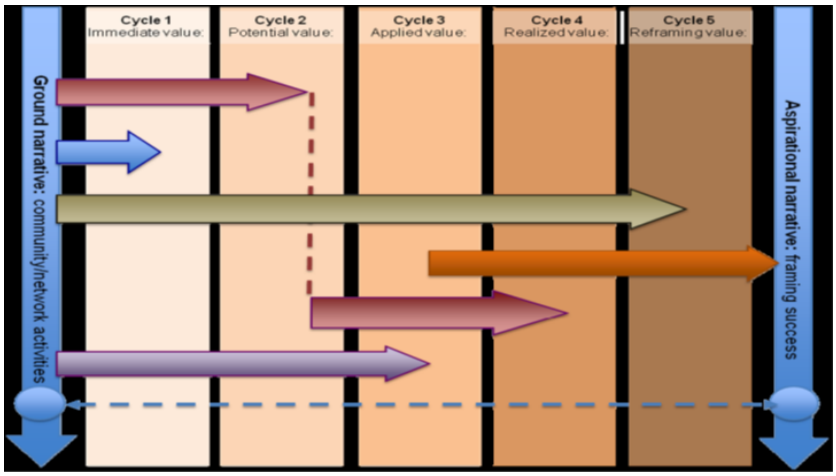

Fig.2. Value-creation stories. Wenger et al (2011, p.34).

I observed that the automotive community of practice was moving between all cycles. The description in Cycle 2. Potential Role: Knowledge Capital helped me develop prompt questions for interviews. The authors suggest that the sequence of cycles of change in a community of practice is not linear; that one cycle does not necessarily lead to another, but that these cycles "serve as the foundation for the process of assessment and measurement" (p.21).

Cycle 1. Immediate value: Activities and interactions
Cycle 2. Potential value: Knowledge capital
Cycle 3. Applied value: Changes in practice
Cycle 4. Realised value: Performance improvement
Cycle 5. Reframing value: Redefining success. Wenger et al, 2011.

What is digital capability?

Within the group of automotive tutors at WelTec there were, and still are to some extent, varying degrees of digital capability. While there are no official measures for teacher capability for WelTec tutors, the Core Capabilities document (Brown, Drayton, Merton & Weddell, 2014) provided a place to start when considering tutor digital capabilities:

> Demonstrates confidence with simple, familiar technologies and digital media.

Jones (2016, p. 1) says that "The use of technology for everyday life including work, socialisation and education is continually increasing and particularly in the tertiary education sector…… and therefore digital capability is very important for both students and tutors". Tutors, she says, "need to understand how to use the technologies in order to assist their students to make the best use of them" (p.1). They also need to be confident in their skills and be able to solve problems that are both familiar and unfamiliar. She outlines anxiety and stress being key barriers to developing digital capability and the need for time to 'play' and experiment.

As well as increasing digital capability tutors also need to have an understanding of learning design.

What is learning design capability?

Laurilliard (2012) says that technologies create an 'even more critical role' for teachers who need to consider how knowledge is mediated, how thinking is scaffolded and what capabilities students need. She advocates that teachers act like design researchers so that they drive new knowledge rather than being recipients.

The essential idea is that 'learning design' refers to the design of the whole learning experience, with a focus on the experience of the learner.

There are several learning design models but at the time of presenting the EdTech team uses one adapted from OTARA, a simple design method developed by Kate Hunt and Maurice Moore (2005). OTARA stands for Objectives, Themes, Activities, Resources, and Assessments. We also refer to Fink's integrated approach course design (2003) that includes learning goals, feedback and assessment and teaching and learning activities, and also introduce Bigg's constructive alignment model (1996) where constructivism is used as a framework to guide decision-making at all stages in instructional design.

Findings

Cycle 1. Immediate value: Activities and interactions

In February 2015 automotive tutors attended a 2 day workshop focusing on learning design in the training centre at Victoria University of Wellington.

Using this room took the tutors away from their work distractions and allowed them to experience an open and collaborative space designed for tutor training. This was successful in breaking down barriers and encouraging a different way of viewing teaching practice, and some developing digital skills that could be used in teaching and learning.

EdTech staff worked alongside staff from Capability Development and Academic Advisory Units to present current ideas of learning design and set up collaborative activities. Mark Leath's participation was important in establishing management's reinforcement of the process. A Moodle site called Pitstop was set up as a repository for images, help files and resources specifically for the automotive tutors.

EdTech AT2200 staff convened the group of tutors who normally do not work in the same programme but who had an interest in developing an online course. This course was AT2200 Engine Repair.

- Tutor one: (course tutor) main development. Found resources, changed the study guide language to be more easily read and understood and culled unnecessary material. Created Moodle books, added images, linked to videos and material in CDX
- Tutor two: developed quizzes for each section of information. Learned how make quizzes, added them to the sections and provided sound feedback.
- Tutor three: glossary. Looked through words in the course material and created a transferable glossary including images, words that relate to automotive industry as well as study type words, for example 'acronym".

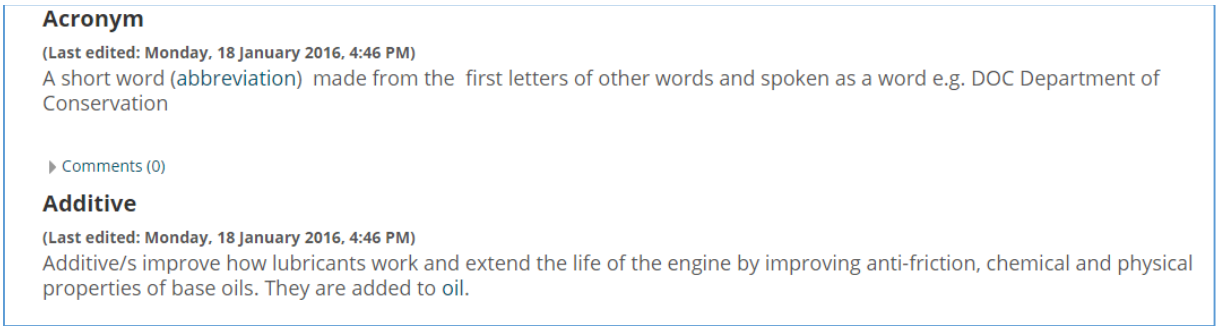

Fig.3 Image from Engine Repair Course Glossary.

- Tutor four: videos. This tutor made a simple health and safety video using Windows Moviemaker and created short quiz to supplement it.

The group met regularly, shared ideas and reported progress to a reference group (consisting of Associate Head of School, EdTech manager and one automotive staff member). Members of this Engine Repair team ran sessions on creating quizzes and glossaries for their colleagues.

The course was developed, user tested, shared with staff and has been used with students. Student feedback, garnered by EdTech, is very positive.

Cycle2. Potential Value.
Cycle 3. Applied Value.

EdTech set up a second two-day workshop in 2016 and the CDX trainer focused on using the CDX resources.

WelTec has held regular Teaching and Learning Forums and in 2015 and 2016 there was a strong School of Engineering (Automotive) presence and support from the Associate Head of School. In 2016 there was an increase in automotive staff presence and a special tradies stream that included staff in the Schools of Construction and Creative Technologies (Hair and Beauty). This forum provided an opportunity for automotive staff to demonstrate good work practice, present ideas and share knowledge.

The Engine Repair team presented the Engine Repair development to the WelTec construction team as well as members of their own team.

In June 2016 The Good Oil Forum: For Teachers of Practical Subjects, hosted by the School of Engineering (Automotive) and Whitireia's Faculty of Trades and Services Te Kura Ringa Rehe was attended by 80 tutors and staff from local institutions and private providers. This forum was an initiative of WelTec automotive tutors.

Themes

I interviewed and recorded: four Engine Repair development team members, Mark Leath and finally, the whole team. One tutor sent me comments via email.

While stories and discussion ranged in the interviews, the prompt questions were useful starting points for discussions.

I transcribed the recorded sessions and analysed them according to emergent themes which were:

Theme 1. Shared understandings

The automotive tutors in the School of Engineering at WelTec share a common open office room. The move from separate campuses to a single shared room has facilitated this development of a community of practice. This facilitates informal discussion and allows EdTech staff to have an informal visiting presence. Eckert (2006, p.2) says that communities of practice develop over time when members engage in an ongoing basis. Language and 'conventions of meaning' she says assist in shared understandings (p.1). So it was important that all members of the wider team could see and hear discussions, problem solving and interventions. They also saw how much effort and time the redevelopment was taking.

One tutor tells me "I think that if somebody had actually told me that Moodle is just a tool for teaching and learning and you can do this sort of stuff…….. I could have got my head around it much sooner".

Theme 2. Collaborative teams

Collaborative teams are considered crucial to good learning design (Ferrell et al, 2006). Māori models of learning (Ako and Te Whare Tapa Wha, Durie as cited in Jones, 2016, p.4) focus on building relationships in order to facilitate learning.

The small team that set up the Engine Repair course demonstrated mutual trust and support. They were prepared to take risks and experiment.

Members of the Engine Repair team say they have gained skills through watching each other and from learning informally. They had not worked together before the project although they had shared workshops and team spaces, this was new. The Engine Repair team brought together tutors who had been at different campuses and helped them develop an appreciation of each other's skills and work. Members of this team appreciated the informal communication and chance to discuss solutions and approaches. "We had good discussions and this has gone to the wider team".

A member of the 'wider team' says:

> There was lot of negativity at first in the team but now everyone seems to be right into it. We've broken that barrier of information technology.

Theme 3. Leadership

Members of the Engine Repair team, some of whom are Senior Academic Staff Members (SASM) demonstrated leadership in the wider group and gave presentations at the local Teaching and Learning Forum, then later lead sessions and more sophisticated presentations at the regional Good Oil Forum in 2016.

They were encouraged to be 'experts' in the field with minimal input from EdTech staff.

Some tutors held workshops on writing quizzes and glossaries, other gave advice on a one-one basis. Other tutors began to experiment their own courses and a "lot of interest was shown in using CDX".

Mark Leath's leadership is valued: "His leadership has been important – keeps us on track and he is interested in what we are doing as far as technology is concerned. He could see the bigger picture". Other members say: "Mark should have moved in earlier". "I'm happier than I have ever been in 35 years…." "I don't know. It might be more to do with management in the last couple of years than about Moodle or CDX." "I suppose it's been to do with the leadership in the last couple of years that Mark has been here".

Mark says that he learned when to support and when to leave alone and he has observed how members of the engine repair team became leaders. He thinks that this leadership has seen the team evolve "from where it was to where it is now".

Theme 4: Learning-informal and transferred

The WelTec automotive team exists in the culture of an educational institution, so it was expected that learning might become a theme. At the end of two years one of the most digitally anxious tutors approached EdTech for training and help with developing his online course in Moodle.

Information, say the tutors 'leaked out' through observing. That they knew what needed to be done (for example resizing images) but not how to do it. Two tutors are "in the process of creating summative assessment for Moodle" and another says: "If you look at the overall team – we are thinking about our self-assessment a lot more. We are being critical about the delivery and how we can blend the teaching". Others say:

> I noticed that no one really knew much about Moodle, or if they did they kept silent due to the resistance toward something foreign.

> I got started by taking what Stu H had developed and modifying it to suit my delivery, then setting up an area for each topic.

One team member reports that he sees communities of practice developing in the classrooms and that what is happening in the team is being replicated in the classroom. Another says that "It's hard to measure if what we have done has affected the learners – there are other changes like timetables".

Theme 5: Mentoring and legitimate peripheral participation

I observed that some members of the team of automotive tutors watched and listened from the periphery and eventually joined the community of practice. One interviewee describes it thus: "If you look at a continuum – it's still there but there are changes. There will always be some people at one end at some at the others. As a community we'll always have some people working at different levels".

During the two year span a new member joined the school and new members joined the community of practice. The new member was mentored but says one tutor "Yes but there's such a lot to learn - academic language and processes as well as teaching processes. It may be 3-4 years before a tutor can move into the digital area and think about developing material. If new members ask questions it's helpful".

A new team member says "….[but] as a team I think we have leaders here. I've never had any problems getting information or finding out information. If I need to know something I just go to certain people straight away and there you go. I get the answer".

Theme 6: Trust

As facilitator it took some time to gain everyone's trust. I visited the room frequently at one stage and the tutors became use to my presence. A strong sense of trust developed between myself and the Engine Repair team members and within in the team, contributing to the development of collaborative teams.

Mark Leath expresses a sense of trust in the team members – that they will get on with the project "It doesn't matter", he says "how they get there as long as they get there".

Theme 7: Status and pride

All participants felt that there had been a sense of pride in the team and that its status had changed within WelTec.

This they felt had been the result of improved capability – "There are different ways that we use the technology" - while attendance at conferences had cemented relationships, the hosting of the Good Oil Forum had been a particular high point in the team coming together.

> When we do those staff forums and they see us get up and do those presentations on Moodle and other things – they see more than just people who sit around in grease all day.

They wouldn't have felt comfortable doing this before but by the end everyone in the team was looking to see how they could help and how they could contribute. (Mark Leath).

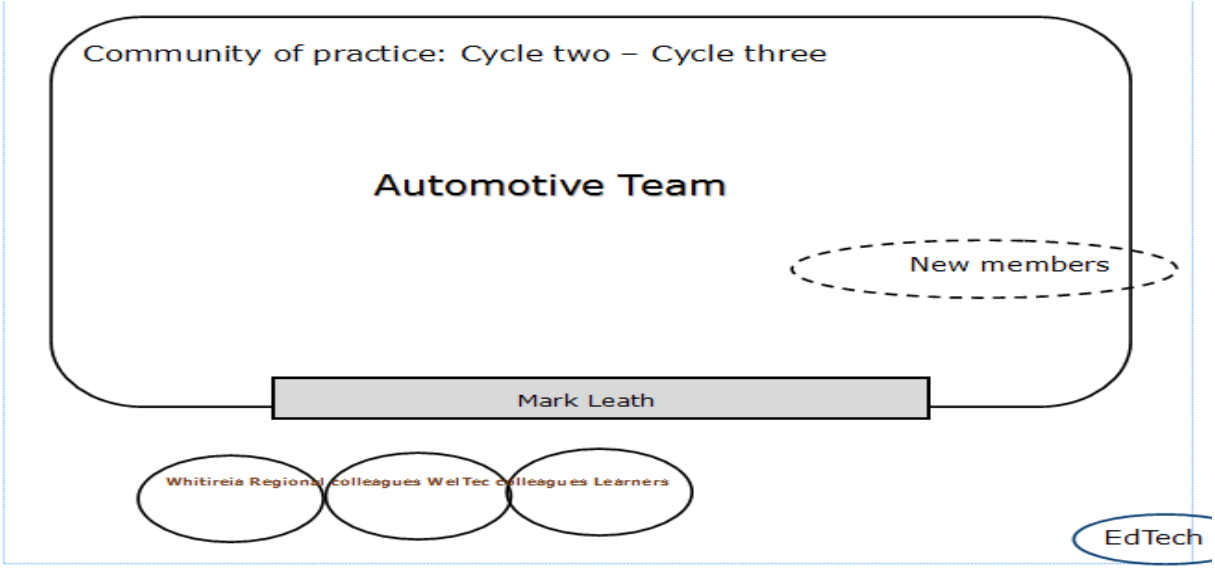

Fig.4. Cycle two- cycle three.

In this diagram the support teams (EdTech, CDU and Academic Advisors) are moving out of the model, new members are more integrated and the team shows relationships with colleagues within WelTec and the region.

Conclusions

The substance of this report reflects my evolving understanding of what constitutes a community of practice and what enables its formation and maintenance.

When the two year project aimed at the development of an online course with the automotive team began there was no intention of researching the project nor was there an understanding that such a community of practice might evolve.

This report includes an analysis of observations, discussions and proposes emergent themes. The prompt questions I used, based on Wenger et al (2011, p. 34) were useful in providing a beginning for dialogue and a means of framing the discussion. Wenger et al (ibid) suggest that more complex and interrelated narratives are a key to understanding the development of communities of practice and this provides ideas for more research and reflection, and frames this report as an initial enquiry into the development of a community of practice.

The themes that emerge from observations and discussions can be viewed in light of the enablers Wenger & Traynor (2010) propose as integral to the development of a community of practice.

Enablers	Examples	Themes
Resources	Time, finance, committed investment of resources, enabling technologies, engaged sponsorship	*Theme 1. Shared understandings* While time did not emerge as a theme the development of the Engine Repair course did take time (over 300 tutor hours) and one tutor acknowledges this.
Community roles	Identified champions, energised core, internal leadership, effective facilitation, support and stewardship, voluntary membership and member-driven agenda	*Theme 2. Collaborative teams* *Theme 3. Leadership* *Theme 4: Learning* *Theme 5: Mentoring and legitimate peripheral participation*
Community culture	High expectations, passion, practice focussed, trust, established outcomes and ground rules, value for time, personal touch, fun, celebrating success	*Theme 6: Trust* *Theme 7: Status and pride*

Four of the themes relate to Wenger et al's (ibid) community roles enabler. In this project having collaborative teams in the same space, strong leadership both from Mark Leath and from within the team enabled the development of this community of practice. When members of the team presented at two Teaching and Learning Forums and then hosted the Good Oil: Forum for Teachers of Practical subjects they contributed to a sense of pride within the team.

There are clear indications that a community of practice focusing on digital capability linked to teaching practice has emerged, with some small advances in the consideration of learning design.

Where there was resistance to developing digital capability there is now interest and enthusiasm. Where there was a reliance on material developed by one person, there are now several collections and modules of teaching materials. Where digital leadership was external to the team it now resides within the community of practice. Where there was reticence there is sense of pride and accomplishment.

This project has created a model for development of a community of practice that can be adapted by teams at both WelTec and Whitireia.

> The work of community is to develop the learning partnership that creates an identity around a common agenda or area for learning. It is to specify why people are there, what they can learn from each other, and what they can achieve by learning together. It is to develop a collective sense of trust and commitment. Wenger et al (2011 p.12).

Where to next?

Both WelTec and Whitireia staff may wish to develop and apply diverse models for the development of communities of practice that fit the institutions' culture/s and teaching and learning philosophies.

The elements that make a community of practice work also make student learning work. One tutor mentions that he has begun to observe communities of practice developing within his classroom since the inception of this project. More research in this area is needed at WelTec.

I am grateful for the trust that the automotive tutors placed in me and for their generosity in responding to my request for interviews and feedback.

Cheryl Brown
EdTech, 2016

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