Article

TRAINING TEACHERS AS A SELF-EMPOWERMENT APPROACH FOR SUSTAINABLE PROFESSIONAL DEVELOPMENT

Bing Dai, Omer Altaf, Srividya Krishnamoorthy

ABSTRACT

Two key ideas proposed by the 2020 Agenda for Sustainable Development were to "expand the definition of the right to education" and to "value the teaching profession and teacher collaboration" (Zewde et al., 2020, p. 5). In light of these two ideas, teaching practices need to enhance the connectivity and access to knowledge and information and innovatively to engage in various formats of collaboration. Thus, as education professionals, teachers' sustainable professional development is a lifelong, collaborative, action-based, research-based, and reflective learning process enabling continuous teacher empowerment. This research adopted an in-depth case study as the research method to critically evaluate the professional learning from the workshop conducted by the teachers (trainers) from the Construction Department of Otago Polytechnic Auckland International Campus. The workshop was delivered to the construction teachers (trainees) from a counterpart polytechnic in China. Our approach involved critical evaluation of the trainers' professional learning from the initial development, facilitation, and feedback from trainees via participating trainers' deep reflection. Critical evaluation and reflection allowed the researchers (three out of the trainers) to reconstruct the meaning of teacher training as a way of teacher empowerment and formulate an evaluative framework for sustainable professional practice.

Keywords: sustainable professional development, critical reflection, teacher training, learning evaluation, case study

INTRODUCTION

Sustainable professional development (SPD) is an essential part of the teacher's profession which ultimately determines the education quality and the effectiveness of teaching (Brandisauskiene et al., 2020; Wells, 2014). In the 21st century, teachers must equip themselves with a comprehensive list of competencies on top of their technical knowledge for effective teaching practice. This requirement is influenced by the exponential digitalisation in the world (Cattaneo et al., 2022) and new characteristics developed by the younger generations (Mohr & Mohr, 2017). The Coronavirus Disease (COVID-19) pandemic also accelerated the need for digital teaching skills for the massive transition from face-to-face (FTF) to online teaching mode (Dai et al.,2020; Otago Polytechnic,2020). All these contextual changes necessitated SPD for teachers in a post-COVID-19 era.

Responding to the unprecedented impact of COVID-19 on the educational community the International Commission on the Futures of Education proposed nine sustainable education ideas for concrete actions in its 2020 Agenda for Sustainable Development (Zewde et al., 2020). It was also intended to have these nine ideas guide teachers in dealing with educational challenges arising from the forever economic, environmental, social, political, and global changes in a post-COVID-19 world (Brandisauskiene et al., 2020; Zewde et al., 2020).

The nine ideas were:

1. Commit to strengthening education as a common good.
2. Expand the definition of the right to education
3. Value the teaching profession and teacher collaboration
4. Promote student, youth, and children's participation and rights
5. Protect the social spaces provided by schools
6. Make free and open-source technologies available to teachers and students
7. Ensure scientific literacy within the curriculum
8. Protect domestic and international financing of public education
9. Advance global solidarity to end current levels of inequality (Zewde et al., 2020, p. 5).

Among the nine ideas, Idea 2 and Idea 3 are the most critical to teachers' sustainable professional development. These two ideas suggest that teaching practice needs to enhance the connectivity and access to knowledge and information and to engage innovatively in various formats of collaboration (Brandisauskiene et al., 2020; Zewde et al., 2020). Sustainable professional development of teachers should be featured by a lifelong, collaborative, and reflective learning process for continuous teacher empowerment (Aldahmash et al., 2017; Alkhawaldeh, 2017; Brandisauskiene et al., 2020; Wells, 2014). In addition, Wells (2014) proposed that research is essential for effective and sustainable professional development, and education professionals should be positioned to be practitioner-researchers.

This research intends to answer the question: "how the facilitation of a training programme for peer teachers can contribute to SPD?" Attempts were made to study teacher training experiences in delivering a two day international workshop as a case to gain a deeper understanding of a new form of teacher empowerment. The elements of SPD were reviewed and used for the evaluation of the training conducted by teachers from the Construction Department at Otago Polytechnic Auckland International Campus (OPAIC). The following section examines the critical elements of evaluating SPD for educational professionals.

LITERATURE REVIEW

The ultimate goals for SPD are that teachers must be empowered with competencies developed from any type of learning and practice, and such competencies are part of their ongoing professional capitalisation process (Alkhawaldeh, 2017; Hargreaves & Fullan, 2012; Ilgan et al., 2022; Sumaryanta et al., 2019; Wells, 2014). Thus, empowerment and competency development are the key indicators for measuring the outcomes or effectiveness of SPD of a professional development process. Aiming to understanding of outcomes and effectiveness of SPD, a critical literature review was conducted to identify the key criteria/indicators for the construction of an evaluative framework for SPD. In Brandisauskiene et al.'s (2020) study, "long-term, systematic, contextualised, taking place at workplaces, in local learning communities" were suggested as the most influential factors for SPD (2020, p. 155). Wells (2014) similarly recommended inquiry-based, action-oriented, ongoing, and connected learning as the key characteristics of SPD. Furthermore, Ilgan et al. (2022) highlighted that professional development activities should be collegial, reflective, school-based, and long-term. Synthesising the recommendations from prior studies, the essential elements of SPD must include collaboration, real actions, reflections, professional inquiry and research, and continuity (presented in Table 1 below). The remainder of the literature section discusses each criterion, focusing on the importance of teacher empowerment in contemporary educational contexts.

Table 1 – Themes of Sustainable Professional Development

SPD ELEMENTS	LITERATURE
Collaborative Learning	Brandisauskiene et al. (2020), Ilgan et al. (2022), Wells (2014), Sumaryanta et al. (2019)
Action-oriented Learning	Alkhawaldeh (2017), Brandisauskiene et al. (2020), Ilgan et al. (2022), Wells (2014)
Reflective Learning	Aldahmash et al. (2017), Ash & Clayton (2009), Griffiths & Tann (1992), Schön (1994), Moon (2005)
Inquiry and Research-based Learning	Brandisauskiene et al. (2020), Kerkham & Hutchison (2004), Wells (2014)
Ongoing and Long-term Learning	Alkhawaldeh (2017), Brandisauskiene et al. (2020), Ilgan et al. (2022), Wells (2014)

Collaborative Learning

Collaborative learning happens when teachers share ideas, participate in study groups, co-teach courses, observe peers' teaching, exchange best practices, mentor new professionals, and many other cooperative opportunities (Brandisauskiene et al., 2020; Wells, 2014). Most prior studies strongly recommended that collaborative learning is the most critical element of sustainable and effective professional development for teachers (Brandisauskiene et al., 2020; Ilgan et al., 2022; Wells, 2014; Sumaryanta et al., 2019). Although teachers formulated their teaching philosophy mostly from their individual teaching experiences and reflective practices (Brandisauskiene et al., 2020), the construct of teaching philosophy will be narrowly scoped without absorptions of the best practice of other educational professionals. The essence of collaborative learning is that teachers can compare and assess their teaching with the others' so that the differences and the related benefits/costs will be apparent enabling them to undertake the necessary self-improvement.

There indeed are many identified benefits of collaborative learning for SPD. However, there would never be any resistance to collaboration. The reasons include fear of being judged, toxically critical culture, barriers to participation, no new learning embedded activities, and disconnectedness from practice (Brandisauskiene et al., 2020; Hargreaves & Fullan, 2012; Ilgan et al., 2022; Wells, 2014). Therefore, it is crucial to cultivate an environment where teachers are comfortable presenting alternative teaching practices to identify new adaptations to their own and others' teaching methodologies (Brandisauskiene et al., 2020).

For fostering a healthy collaborative environment, Wells (2014) promoted the idea of the professional community of learning that formalises informal and powerful learning exchanges between teachers to grow the desire for continuous improvement for contemporary educational needs. It creates a mutual and safe space where teachers can understand, share, collaborate, and support each other (Wells, 2014). Sumaryanta et al. (2019) supported the idea of community-based teacher training and proved that such training was transformational for teacher professionalism in the Indonesia nationwide teacher competency improvement programme.

Action-oriented Learning

Action-oriented learning defines that learning can only be effective when a real action takes place in the workplace (Alkhawaldeh, 2017; Brandisauskiene et al., 2020; Wells, 2014). A real teaching practice must consider specific contextual factors and needs in an educational organisation. Job-embedded or work-

based learning benefits SPD (Wells, 2014) with enhanced motivation and engagement because a close connection between learning and work is created. Action-oriented learning often is iterative and progressive, which ensures learning continuity. Sustainable professional development will be advanced through learning in action as there is no alternative way to simulate the complexity of the issues and problems existing in the educational organisation. Learners and educational organisations would benefit the most from the improved teaching quality achieved by teachers' action learning on-site (Wells, 2014). Therefore, action-oriented learning is a must for SPD.

Reflective Learning

As an essential part of SPD, teachers should constantly recall, think about and assess their teaching experience in order to develop new knowledge and generate new ideas for better teaching practices (Aldahmash et al., 2017). Critical reflection allows teachers to view and review issues and problems from different perspectives to build holistic understanding (Schön, 1994). It is an attempt to make changes through an attempt to understand it (Schön, 1994). The essential processes for critical reflection include exploration, articulation, and representation of teachers' experiences, ideas, and knowledge, which spiral continuously (Aldahmash et al., 2017; Ash & Clayton, 2009; Moon, 2005; Schön, 1994). To be a reflective teacher, a reflective dialogue between public theories and personal teaching philosophy needs to be established to avoid being low-level operatives and being blind to significant issues of the underlying purpose of education (Griffiths & Tann, 1992).

Inquiry and Research-based Learning

Wells (2014, p.491) highlighted the emergent idea of "teachers as researchers" for the inclusion of research as one of the critical elements for SPD   Wells (2014, p.491) referred to Kerkham & Hutchison's (2004, p. 88) argument for research as "an approach to professional learning that supports teachers to engage in sustained intellectual inquiry". Kerkham & Hutchison (2004) criticised that discrete, mandated, and one-size-for-all professional development packages disconnect education research from the complex classroom context and misposition teachers as knowledge recipients rather than knowledge creators. They suggested that research-based learning positions teachers at the centre of educational innovation and enables tailored professional learning for individual teacher's needs (Kerkham & Hutchison, 2004). In addition, research facilitates teachers to open a dialogue between theories and practice and strengthen their development of new teaching practices with rigorous data analysis (Wells, 2014). Subsequently, teachers will be empowered with more solid competencies and maintain their SPD better. Wells (2014) analysed the stories and reflections of two representative participating teachers in their three-year research professional learning programme to conclude the programme effectiveness. However, Wells' (2014) mapping exercise against the literature on SPD was more task-ticking than outcome-assessing and the evaluation focused more on the effectiveness of the programme than the learning outcomes achieved by the participating teachers.

Ongoing and Long-term Learning

Many SPD studies mentioned life-long, ongoing, continuous, or long-term learning as an essential elements of SPD (Brandisauskiene et al., 2020; Ilgan et al., 2022; Sumaryanta et al., 2019; Wells, 2014). Brandisauskiene et al. (2020) commented on the length of time required for SPD is one of the argumentative elements for evaluating the effectiveness of teacher learning. For both educational organisations and professionals, time would be a cost and financially sensitive. Basma & Savage (2018) suggested that short-term, but high-quality, teacher learning is effective. However, the ever-changing world has constant demands for new skills and competencies for teachers (Brandisauskiene et al., 2020). A typical example is the demanding of digital skills for teachers to manage faceless and remote learning environments (Dai et al., 2020). Therefore, the duration and process of teachers' career growth are long-term, continuous, and purposeful for their professional advancement (Brandisauskiene et al., 2020).

Sustainable professional development research is currently an underdeveloped area but has great meaning for teachers, educational organisations, and generations of learners. The extant research on SPD has only narrowly focused on one or a few aspects of educational professional development, and there is no holistic framework for guiding and assessing teachers' professional development activities/practices. Therefore, this research developed a critical evaluative framework for SPD to assess whether professional development activities/practices/programmes can contribute to SPD for teachers.

Development of the evaluative framework for SPD

The extant literature suggested that collaborative learning, action-based learning, reflective learning, inquiry, and research-based learning, and life-long learning are the five essential elements for SPD (Aldahmash et al., 2017; Alkhawaldeh, 2017; Brandisauskiene et al., 2020; Wells, 2014). These five essential elements of SPD have different purposes for meaningful and sustainable development for teachers. Meanwhile, they are also intertwined to strengthen the effects of SPD. As presented in below, all five elements were constructed for forming an evaluative framework for SPD. Key evaluation criteria were developed under each element for fair and trustworthy judgement of outcomes from a training practice.

Figure 1 – Evaluative Framework for SPD
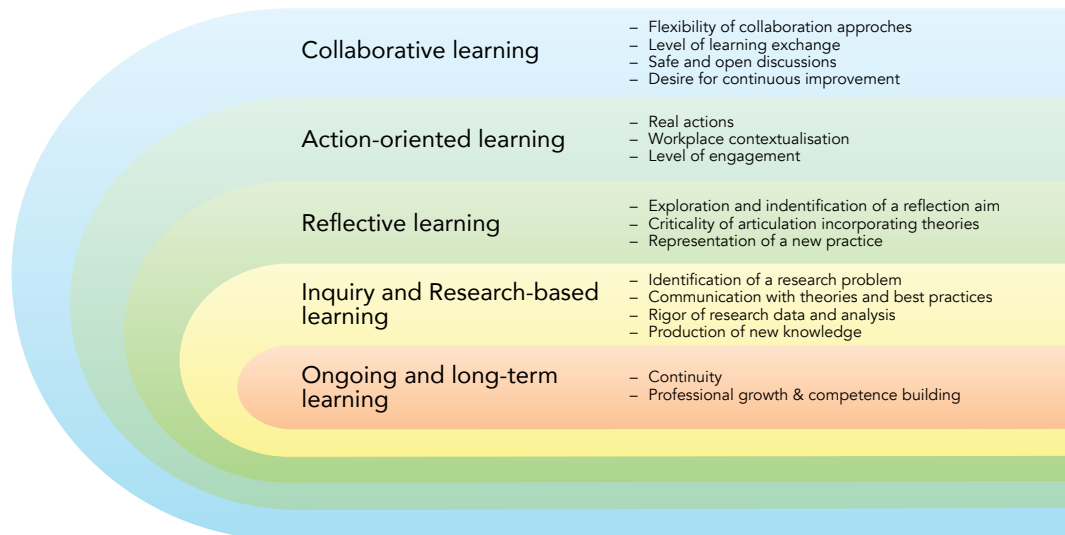
Based on the literature review, the evaluation of collaborative learning is proposed to focus on four different aspects: flexibility of collaboration approaches, level of learning exchange, safe and open discussions, and desire for continuous improvement. Effective collaboration should promote active learning exchanges. To achieve this goal, SPD should allow a variety of approaches for collaboration to ensure attracting teacher engagement (Brandisauskiene et al., 2020; Ilgan et al., 2022; Wells, 2014; Sumaryanta et al., 2019). Integration of formal and scheduled programmes with informal and spontaneous learning opportunities would be sound for boosting dynamic and active learning exchanges. The learning exchanges can happen at a collegial, institutional, national, and/or international level. SPD should provide a friendly, supportive and transparent environment where teachers are willing to engage in open discussions and idea sharing (Brandisauskiene et al., 2020; Hargreaves & Fullan, 2012; Ilgan et al., 2022; Wells, 2014). The conversations or idea exchange should include constructive feedback processes which would stimulate the desire for ongoing improvement.

The assessment of action-oriented learning needs to focus on real actions, workplace contextualisation, and engagement level. Real action is teaching/training/facilitation embedded in a SPD programme as an indispensable part. Criterion contextualisation at the education organisation assesses the extent to which their mission, values, culture, stakeholder needs, and available resources are considered for the action. The assessment of the level of engagement will focus on the participating teachers' motivation, involvement, and contributions (Wells, 2014).

The criteria for evaluating the effectiveness of reflective learning should include exploration and identification of a reflection aim, the criticality of articulation incorporating theories, and the representation of a new practice. An aim for reflection should be originated from teaching experience, which is significant for learners and the other stakeholders. The aim should be reframed to be suitable for initiating the reflective process and leading the dialogue between theories and practices. Criterion criticality of reflection assesses the depth and breadth of varied perspectives that are included in the reflective dialogue or articulation. The representation of a new practice emphasises the outcome of the reflective process, which should be actionable teaching practice with positive changes or improvement (Ash & Clayton, 2009; Moon, 2005; Schön, 1994).

Necessary criteria for assessing inquiry and research-based learning are critical identification of a research problem, the extent to communicate with theories and best practices, the rigour of research data and analysis, and the production of new knowledge/theories/practices. Critical identification of a research problem refers to careful considerations for identifying the problem, including classroom context, teacher factors, and significance to the wider education community. The dialogue between theories and practices needs to be frequent, thorough, and in-depth so that the development of new knowledge will be trustworthy. The data collection and analysis process must be stringent and transparent for further validation. The new knowledge/theories/practices need to address the identified research problem, involve education innovation, and demonstrate a high possibility for future applications (Kerkham & Hutchison, 2004; Wells, 2014).

The measurement criterion for ongoing learning is continuity and professional growth. Continuity refers to whether current learning triggers future learning and one's professional growth. Continuity is connected to reflective learning which teachers need to routinely reflect on their learning and visit additional theories/ literature for incremental development of their new ideas of practice (Aldahmash et al., 2017; Moon, 2005; Schön, 1994). There should not be a final ending point for SPD. Professional growth and competency-building are clear evidence for the demonstration of SPD effectiveness. Competencies developed from a professional development programme would scaffold a teacher's career. Hence the evaluation will investigate the process of developing professional competencies (Brandisauskiene et al., 2020).

The application of the evaluative framework for SPD was applied to the case study carried out by this research. The five elements of SPD and the respective criteria were presented in Table 2 for the reflective evaluation of the construction training programme workshop.

RESEARCH METHODS

A qualitative case study (Yin, 2009) is adopted as the research method. The case study method allows researchers to investigate a research objective such as an individual, an event, or a group of people through rich data and extensive real-life context for generating "many more variables of interest" (Yin, 2009, p. 2). Yin (2009) suggested that case studies are appropriate when research intends to find out "how" and "why", the researcher(s) has(have) limited control over the research objective, and the focus is "a contemporary phenomenon within a real-life context" (Yin, 2009, p. 2). This research meets all the above three criteria as the research question is a "how" question, and there was an intention to research a unique training programme prepared for teachers from a different jurisdiction during COVID-19, and there were many uncertain factors for the success of the training programme.

The case study in this research focuses on a two day training programme workshop, which are part of a teaching training programme for teachers (trainees) from an international vocational institute. The case study is unique as it demonstrates an organisation-wide collaboration in developing and delivering the training programme. It was delivered online to the trainees who live overseas and whose travelling was restricted by the COVID-19 travelling bans. Instead of an evaluation of SPD for the trainees, the focus was the empowerment achieved by the Otago Polytechnic Auckland International Campus (OPAIC) teachers, who prepared and facilitated the training programme workshop for their international counterparts. While the trainees provided their feedback on the training programme (workshop); the feedback was only used for the evaluation of the teachers' professional growth.

The approach in this research involved a holistic evaluative process of learning from the initial development, facilitation, and the trainees' and teachers' feedback on the workshop. The evidence was mapped against the evaluative framework for SPD developed for this research. The Describe, Examine and Articulate Learning (DEAL) model (Ash & Clayton, 2009) used for critical reflection was adopted for avoiding box-ticking exercises. This approach allows the researchers to enhance the richness of information related to the workshop and the teachers' personal growth. The case study was intensive and critical which enabled the identification of the gaps in so that future improvement of SPD can be suggested.

The evaluation and reflection were conducted by two participating teachers and the translator, who were also the researchers. Although the translator was not a teacher they were actively engaged in the initial planning of the workshop and contributed their understanding of the Chinese education context. Three researchers evaluated the workshop separately and then conducted meetings together to discuss each other's opinions before reaching a consensus. This validation process adds trustworthiness to the findings.

Case Context of Teacher Training Workshop

The two-day workshop was organised based on the 'train the teacher' model where the five teachers and one translator all construction teachers from OPAIC. This team of teachers were experts from different areas of construction specialisations. The trainees were lecturers (trainees) from a counterpart polytechnic in China. The main focus of the workshop was to present the context of the New Zealand construction qualification programme and thereby provide insights and training on teaching methods for construction courses.

The counterpart construction polytechnic is a public vocational education institution having 40 years of history in providing a qualified construction workforce for the construction industry in Southern China. It has more than 150,000 graduates and recruits thousands of students per year. The counterpart polytechnic runs cooperative educational programmes with overseas universities from ten different countries and regions, Otago Polytechnic is one of them. The trainees who attended the workshop mostly had foreign education backgrounds. Therefore, some were fluent in English listening and speaking. All of the trainees had construction or engineering qualifications and relevant teaching experience. Their professional experiences range from junior level (i.e., teaching assistant) to senior level (i.e., Associate Professor). However, all trainees had a similar purpose for attending in the workshop, which was an improvement of teaching skills and knowledge of new teaching technology. New Zealand construction law and regulations were another key area of interest from them.

The context of developing and designing the workshop was very specific to the trainees of the counterpart polytechnic which had similar qualifications in construction. Tertiary education in technical courses, like construction, is always found to be challenging to ensure their graduates are ready for the industry. It means are different types of courses that are practical and theoretical for which different teaching methods need to be adopted. Therefore, it was a thoughtful approach to designing and developing a workshop that would ensure the trainees experienced a broad range of teaching techniques. The focus was necessary on specific courses to learn and practice the teaching techniques for the trainees to work with, and training

need to be incorporated in the workshop including some specific designed assessments, class activities, and group tasks.

Critical Reflection and Discussion

For the purpose of critical reflection the DEAL model (Ash & Clayton, 2009) was used to reflect on range of experiences gained throughout the workshop.

Describe Learning:

The conduct of the workshop started with the planning of the schedule for day 1 and day 2. This was the first and most important step to ensure the success of the event. The entire OPAIC team of construction teachers were involved, and regular meetings were held to discuss the structure of the workshop, schedule, duration, and content of the presentation. A common 'Microsoft Team (MS Team)' was created where everyone uploaded their initial ideas and thoughts. These ideas were then taken and discussed during the regular meetings and further improved. It was a team effort to coordinate in-groups based on the subject matter and develop the workshop material. For the appropriate design of the content delivery, it was necessary to identify the trainee's needs. The trainee profile collected through a short survey was used for this purpose. The overall workshop schedules contain different sessions with the OPAIC learning and teaching team and the OPAIC construction team. The topics requested by the trainees were prepared by the collaboration of all OPAIC construction teachers and these were divided into different sessions in the two day workshop; examples from the New Zealand Diploma in Construction programme courses were used as the main content of these sessions.

Evaluate Learning:

The evaluative framework for SPD presented in Figure 1 is evaluated in terms of effectiveness and key takeaways are also summarised in Table 2. The team of teachers, teaching and learning experts being from different campuses, the online tools like 'MS teams' were found to be very effective in terms of coordination, sharing, and collaborative learning. Trainees also being online, the digital tools were effective in terms of knowledge sharing and exchange of ideas. All the workshop materials were shared in the file folder set in the MS Team, which again formed the basis for good communication during and after the workshop sessions. It was observed that the level of engagement during the sessions was effective as messages were popping up in the chat box, but there is room for improvement, and it has been identified as the result of effective reflection.

One of the most challenging aspects of the workshop was the language barrier. Having an interpreter who was translating each sentence created an easy flow of communication but resulted in reducing the interactions between the trainers and trainees during the sessions. The learning for improvement identified is to plan for future workshops. For example, it would be better to have pre-recorded sessions of presentations with translation which trainees could review before the interactive workshop session with the teachers. Trainees can pause and absorb the information at their own speed and when they come to a teacher-led session of the workshop, they can participate in active activities and sharing of ideas and add the missing pieces of puzzles in their learning.

In terms of action-oriented learning, the focus was to prepare specific topics requested related to NZ Building Codes and legislation that governs the construction industry, examples of topics value management in construction, and construction project planning. These examples from the current courses in the NZ Diploma in Construction were used and it proved to be very effective as trainees were engaged and they got real examples that were workplace conceptualised. It has been identified that this criterion of the framework can be improved by thinking about how to connect better with both institutes and give opportunities to include more feedback from trainees. It was a great opportunity for teachers to prepare an action-oriented session with a focus on the trainees' needs to be fulfilled and incorporating the technical

aspects. Preparing the content, which is NZ focussed, and trying to present it in a simple way to international trainees was a challenge. The purpose was to share the practices in the simplest way using the topics mentioned above. The content was prepared with powerpoint slides having examples using actual course material from the NZ Diploma in Construction. The learning here is to undertake more targeted activities and take onboard the input from the trainees. There were instances where good engagement like sharing of practices in legislation and codes in the two countries were discussed but more robust activities can be prepared for future workshops.

Having a clear agenda, goals, and plan for the workshop was very effective in terms of delivering an effective workshop and reflection. But it would have been better to provide the reflective journal or some prompt questions to both trainees and the trainers to record their reflections after the workshop. Informal feedback and reflective meetings within teams were effective in getting the points that are also mentioned in this paper, but a more robust component can be incorporated in future workshops. More feedback and better collaboration with learning and teaching teams for developing reflective activities and also incorporating education theories can be planned in future workshops.

Recording the session and looking at these again to learn what went well and where improvements can be made was also very effective; record keeping, getting feedback from trainees, and having a peer discussion session after the workshop could be formally designed to get the maximum benefits. As the trainers, looking into the level of facilitation shift required from teaching the learners in a classroom to conducting a workshop for the trainees also provides comparative learning about how to approach the sessions. Here the trainees come from a strong technical background and their level of understanding and expectations were much higher compared to learners in the classroom. The training activities need to focus on the level of engagement, trainees educational and professional background, and the concept of sharing from both sides for effective sustainable learning to happen.

Articulate Learning:

Despite all discussions, regular meetings, and planning for the workshop, there were few things that could be taken as learnings to use as improvements for future workshops. One of the most important things was the language barrier. There was a plan to have a translator and that worked well during the sessions. However, it was a surprise when the introductory session every line of the powerpoint was being translated. This needs to be seriously improved in future planning. The problem identified was the translator would find it difficult to exactly make a direct translation of the words or explain the context. Also, the duration of the presentation was significantly affected and created stress for the teachers and lead to cutting short a few important slides for discussion. As discussed above in the evaluation, the pre-recording and sharing of the presentation materials prior to the workshop would resolve these issues hopefully. The learning for the teachers from the unexpected translation needs of the trainees were dealt with immediately by the teachers and translator. The takeaway for the teachers was quick problem-solving skills and being able to improvise during the execution of the workshop sessions.

Furthermore, action-oriented tasks were effective in terms of identifying the courses and preparing the material very specifically and relevant for providing a range of experience in teaching pedagogy. However, a mix of teaching methods incorporated in the workshop sessions during the presentation and collaborative activities might be more effective. For improvements, the courses from the training institutes could be studied before the workshop and activities could be designed as part of collaborative and experiential learning. This could further provide ways for more interactive sessions.

One of the other aspects for the teachers is to consider inter-cultural competency components in the workshop sessions. To improve the workshop content, thinking about diversity and bridging the cultural gaps, this learning will help to update the workshop plans and facilitate learning sessions with advanced learning and cultural diversity.

Inquiry-based learning and lifelong learning are the two components of SPD which could be reflected as there is a lot of scope for further improvements. Inquiry-based learning has been used with minimum information gathered from the trainees. A series of survey questions were designed for the collection of information about the trainees and their interests, and reflective learning is a way forward to support long-term learning. The gaps identified through this research will be used further to enhance skills and learning for the trainers.

CONCLUSIONS

Drawing from the critical reflection it can be concluded that the design and facilitation of the workshop for fellow teachers to a great extent empowered them with the acquisition of new competencies and new learning. The five elements of the evaluative framework for SPD were met to a satisfactory extent. Evidence was strongly focused on collaborative, action-based, reflective, and research-based learning. However, life-long learning was slightly restricted by the continuity of the format of the workshop. Strengths of the training programme were effective collaboration among trainers when preparing the training materials and organising the sessions, action-based learning with targeted construction related topics, effective use of digital tools, critical reflection, and identifying the research opportunities. The challenges identified and areas of improvement were to include better use of technology to overcome language barriers, planning the sessions to include pre-recorded videos with translations and only focusing on interactive activities with sufficient time allowed in the main sessions, setting up the reflection journal for teachers to record their experiences in a better way, identifying the research components in training areas and incorporating the new practices. The challenges identified have provided a chance to think about how to work around these in the future. The international-featured workshop needs to be frequent enough for the teachers to exercise their new learning. The polytechnic could invest in resources for providing cross-departmental, cross-campus, cross-institutional, and community-based collaborations for future SPD opportunities.

The limitation of this research is that the findings only apply to the case defined and may not be generalisable for other contextualised SPD activities. However, this research offered insight into a creative approach to educators' SPD. The learnings from this case suggest implications for future SPD practices.

Table 2 – Assessment of construction training programme workshop

SPD	CRITERIA FOR EVALUATION	EVIDENCE	EVALUATION OF EFFECTIVENESS	FUTURE IMPROVEMENT
Collaborative Learning	Flexibility of collaboration approaches	Using online communication tools among teachers and for the workshop provided flexibility in collaboration. Discussions about the collaboration with the Dunedin team including training content, workshop sequence, teachers, and leadership of the entire programme.	Online tools like MS Teams have proved to be very effective in terms of communication, delivery, sharing material, chat, and discussions. The collaboration with the Dunedin team was highly effective as the level of interchange of ideas was high.	Pre-recorded videos and workshop should comprise of activities and discussions only. Use of other digital tools, if possible, to overcome the language barrier.

SPD	CRITERIA FOR EVALUATION	EVIDENCE	EVALUATION OF EFFECTIVENESS	FUTURE IMPROVEMENT
Collaborative Learning	Level of learning exchange	Material uploaded online, PPT, course material, and also communication during the workshop.	The material was clear, comprehensive, and understandable. Although communication needs to be improved there was still participation by trainees in the chats and also verbal comments during workshop sessions.	Creating a mind map of learners' needs would help improve the levels of learning exchange. Having pre-recorded videos where they can pause and play and with translation flexibility would improve the level of exchange of learning.
	Safe and open discussions	MS Teams chats and also providing opportunities to discuss and comment in different sections of the workshop.	There is room for improvement as discussions were not very productive, due to the language barrier and time constraints.	Pre-recorded transcripts. Activities to be prepared so they can be printed in both English and Chinese. Plan to improve engagement in safe and open discussions.
	Desire for continuous improvement	Changing the mode of the workshop from F2F to online due to travel restrictions shows the eagerness of learners to seek continuous improve-ment, no matter what the circumstances are. Feedback will add to future improvements for both trainees and teachers.	Conducting online workshop overseas shows a desire to share the learning and continuous improvements in the practices.	Challenges faced in conducting online workshop lead to learning about improvements for future. Questions about way to improve the level of engagement inspired the teachers to further explore technological options for future workshops.
Action-oriented Learning	Real actions	According to the needs of the trainees, having the workshop material already online, a language interpreter, and slow-paced workshop.	Strategies were effective generally but there were time restrictions, and, in some sessions the content was shortened as each line was required to be translated.	Presentations and collaborative activities need to be prepared well before the workshop and shared with trainees. Facilitation could be improved by this.

SPD	CRITERIA FOR EVALUATION	EVIDENCE	EVALUATION OF EFFECTIVENESS	FUTURE IMPROVEMENT
Action-oriented Learning	Workplace contextualisation	Preparing specific topics requested relating to NZ Building Codes, legislation that governs the construction industry, and including value management in construction, and construction project planning.	The topics were very well presented, and trainees got the material online on MS teams. The engagement in the two day workshop and comments showed the interest of learners.	Connecting to both institutes and identifying opportunities to enable more feedback from trainees.
	Level of engagement	To overcome the language barrier an interpreter was there throughout the workshop, engaging through chat and online discussion.	Generally, it was effective but there is room for improvement.	Innovative tools to overcome communication barriers and arrange activities that can spark engagement.
Reflective Learning	Exploration and identification of a reflection aim	The aims of the workshop were clearly defined and communicated which provided an opportunity at the end to reflect on the effectiveness.	Having a clear agenda, goals, and plan for the workshop was very effective in terms of delivering effective workshop and reflection.	Communication prior to the workshop, having a reflective journal.
	Criticality of articulation incorporating theories	As a bridge-builder, the focus is on designing the workshop to create a bridge between trainers' and trainees' cultural and social gaps. Theories like situated learning, instruction design, and cooperative learning were used to design the workshop materials.	Effective but there is room for improvement	Educational theories and trends can be incorporated better by using more trainee-focussed activities.
	Representation of a new practice	This was the first time OP conducted an online training programme. Despite challenges, workshop material met the needs of the trainees. This new approach opens doors for using innovative digital tools and collaborating for training purposes without the need to travelling.	Effectiveness in the sense that it is great learning by using digital tools for conducting such a workshop.	As mentioned earlier, the use of innovative tools can help achieve excellent results.

SPD	CRITERIA FOR EVALUATION	EVIDENCE	EVALUATION OF EFFECTIVENESS	FUTURE IMPROVEMENT
Inquiry and research-based learning	Identification of a research problem	Collaboration overseas with issues such as language barriers, time constraints, and communication gaps. Effectiveness of exchange of learning in the very technical construction sector.	Effective as it opens the area to research in learning and teaching space.	Research components should be included from the beginning.
	Communication with theories and best practices	Experiential learning, authentic assessments, the DEAL critical reflection model, SPD.	The DEAL critical reflection model and SPD were effectively communicated. However, experiential learning was restrictedly exercised due to the language barriers.	The embeddedness of experiential learning into the workshop design could be improved by a thoughtful research plan and effective translation technology.
	Rigour of research data and analysis	Teacher reflections, teacher opinions, and training feedback	Teacher reflections were communicated between the three researchers to reach a consensus. Other facilitating teachers' views were also consulted with informally, for strengthening the researchers' understanding. Trainees' feedback was collected by the standardised Otago Polytechnic learner survey. Although only one-third of the trainees responded with limited comments, their responses offered useful information for the teachers to reflect on.	A proper ethical application and research design would make the research purposes and teachers' SPD goals clearer so that the teacher's self-empowerment process would be more effective and sustainable.
	Production of new knowledge	Innovative ideas and tools to conduct an online workshop with teachers from different countries having different cultural and work environments. Also thinking of ways to improve the hurdles due to the language barrier.	Very effective as it opens new opportunities for learning.	Use of innovative tools, getting feedback, and closing the loop in terms of knowledge generated.

SPD	CRITERIA FOR EVALUATION	EVIDENCE	EVALUATION OF EFFECTIVENESS	FUTURE IMPROVEMENT
Ongoing and long-term learning	Continuity	Feedback from trainees and teachers.	Reflection on the workshop be held using the recordings of the workshop	Reflection in this paper and identifying the point for improvements for future workshops.
	Professional growth & competence building	Workshop recordings	Clear demonstrations of online training skills and the ability to improvise when unexpected trainee needs occur	On-going process.

Bing Dai
Email: bingd@op.ac.nz

Bing Dai has taught business courses at different tertiary education organisations in New Zealand for more than ten years. She is also a research supervisor for master thesis and professional projects at Otago Polytechnic Auckland International Campus (OPAIC). She was involved in developing the training programme and acted as an interpreter during the training sessions. She holds a fellowship of Advanced Higher Education (HEA) and Graduate Diploma in Tertiary Education. She is currently a Ph.D. candidate at Auckland University of Technology (AUT). ORCID: 0000-0003-3917-2208

Omer Altaf
Email: omer.altaf@op.ac.nz

Omer Altaf is a Senior Lecturer teaching different construction management and quantity surveying courses on the Otago Polytechnic Auckland International Campus. He is a supervisor of construction research projects. He holds a master's degree in Civil Engineering, Graduate Diploma in Tertiary Education, and currently pursuing a Ph.D. from the University of Auckland. He has 12 years of teaching/facilitating and research experience in Civil Engineering. He is an active professional member of Engineering New Zealand (NZ), NZ Geotechnical Society, and Buildings NZ. Omer is also working closely with the engineering industry and local councils for different projects. He is one of the teachers who was involved in the development and facilitation of the workshop. ORCID: 0000-0002-4395-3771

Srividya Krishnamoorthy
Email: Srividya.Krishnamoorthy@op.ac.nz

Srividya Krishnamoorthy is a Lecturer teaching different construction management and quantity surveying courses at OPAIC. She also supervises construction research projects. She is one of the teachers involved in developing and facilitating the training programme. ORCID: https://orcid.org/0000-0001-8099-1817

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