RESEARCH ARTICLE

Towards a partnership model for developing core abilities

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ABSTRACT

A tutor and a student together propose a model for integrated student and staff engagement that concentrates on developing students' core abilities. They build upon their respective experiences of self-managed problem-based learning and of the purposeful promotion of core abilities. They explore the potential of collaborative interaction between trainee tutors and their students who are both freshly engaged in self-managed experiential learning. The authors' use of the Kolb cycle as a framework is exemplified in the student author's experiential learning. The authors relate and comment upon the tutor's iterative attempts to overlap experiential learning cycles for trainee tutors and their students and to extend the emerging model by adding purposeful peer interactions and regular evidence-based evaluations. Their completed scheme features a partnership wherein tutors' growing experiences of structuring and facilitating socio-constructivist learning are integrated with students' reflective reviews of recent developmental experiences.

KEYWORDS

core abilities, experiential learning, students and tutors, Kolb cycle, integrated development

We aim to suggest how facilitated reflection on experiential learning can be integrated by university teachers in training regarding the tutoring aspect of their duties, and by their learners. Our paper has been written collaboratively by a tutor, John, and a student, Clarissa, who have only met virtually. John served as a critical friend to the Limerick team leader as he undertook PhD studies centred on his innovatory experiential learning course in civil engineering; and also as a visiting tutor, facilitatively volunteering formative suggestions to students like Clarissa on their first semester's reflective reviews. Their collaboration originated after their tutorial contact, when John took his courage in both hands and approached Clarissa, inviting her to join him in refining his tentative proposal for creatively integrating tutors' and students' experiential learning cycles. He hoped that this "particularly rich opportunity for creative partnership(s)" (Hanna-Benson et al., 2020, p. 62) could link the development of tutors for whom facilitating experiential learning is a fresh experience with the development of students who are newly engaged by these tutors in

such experiential learning. John sought constructive input from Clarissa as a student who had recent experience of experiential learning. Both appreciated that co-authorship of this paper, with its concentration on enhancement, would be a relatively rare contribution to the field (Mercer-Mapstone et al., 2017), and so might prove hazardous.

Our proposal builds upon Clarissa's recent experiential learning interwoven with portions of John's pedagogical thinking and iterative refinement of practice. It sits in the sector of learning, designing, and development in the widely cited student engagement framework and unusually offers both a co-designed course structure (Hanna-Benson et al., 2020) and a "start with the syllabus" (Blinne, 2013 , p. 41).

We open with John's outline of staff development centred on tutors being action-researchers of their own practice and of their students' learning. There follows Clarissa's account of her problem-based learning experiences that called purposefully for self-managed development of core abilities. She frames this around her newly formed acquaintance with the Kolb cycle (Kolb, 1984) as the underlying but undeclared structure for her experiential learning. We go on to analyse John's innovatory events for lecturers/tutors and students in Scotland, Colombia, and Denmark, together identifying further critical features for a radical proposal for full partnership of inexperienced tutors and learners in the development of core abilities.

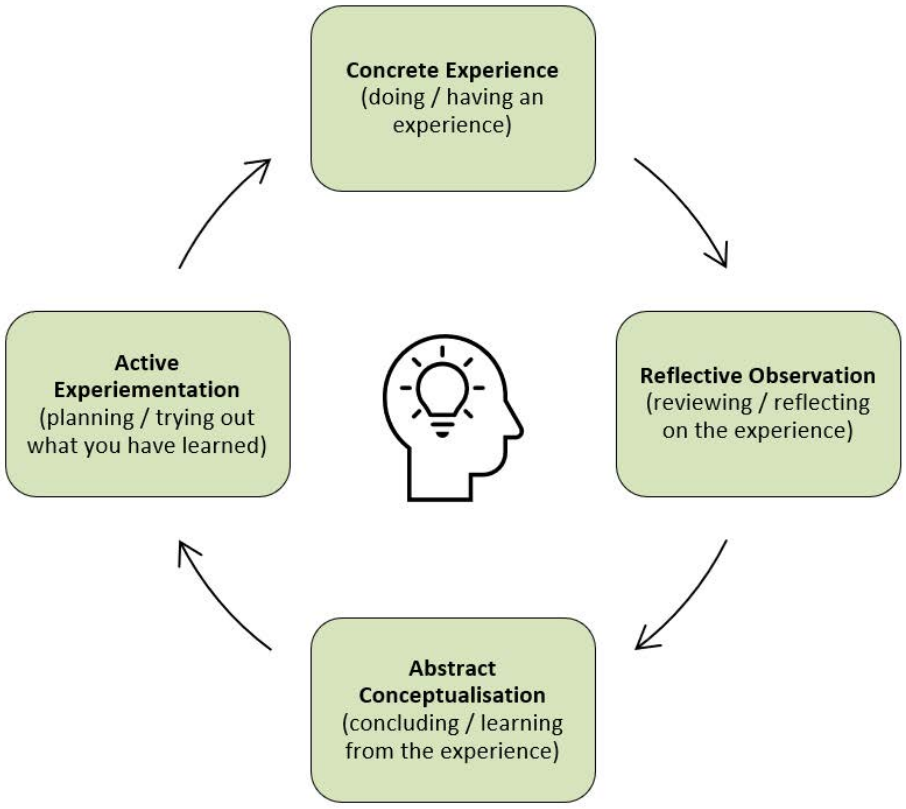
We classify both our own partnership and the tutor/student partnership embodied in our model as "a collaborative, reciprocal process through which all participants have the opportunity to contribute equally, although not necessarily in the same ways, to curricular or pedagogical conceptualisation, decision making, implementation, investigation, or analysis" (Cook-Sather et al., 2014, pp. 6–7)

TEACHERS AS ACTION RESEARCHERS

John

In a post-graduate course called *Teachers as action-researchers of their own practices* (Heywood, 1996), Heywood called on his enrolled schoolteachers to select a pedagogical concept as the abstract conceptualisation which they would test in their practice and would reflectively analyse the outcomes. These students thus followed the now well-established Kolb cycle (Figure 1). The scheme generated constructivist learning experiences on which they subsequently reflected, structuring their reflective reviews as learners prompted to revise or consolidate their grasp of their chosen pedagogical approach (Figure 1). I was inspired by this approach through serving as the external examiner for this course.

Figure 1. The Kolb cycle



Adapted by Harte from Cowan (2006).

As consultant to a faculty task group charged with promoting innovation in what was then Birmingham City University, I framed our innovatory activities around the full Kolb cycle. These often developed into published schemes for student engagement (Nygaard et al., 2013).

I shared with Clarissa as someone with recent experience of reflective development of abilities my longstanding desire to exploit a possible overlap between the Kolb cycles of inexperienced tutors and their developing students, which scheme she summarised as Figure 2. I felt that students and tutors could profitably interact through collaborative discussion when they were both well into their own Kolb cycles from their own respective starting points. The students' reviews of their recent developments of core abilities could be prompted towards metacognition by acquiring understanding of the underlying pedagogy. At the same time, the tutors' facilitative immersion in helping their students to reflectively probe their experiences could helpfully inform refinement of their chosen scheme.

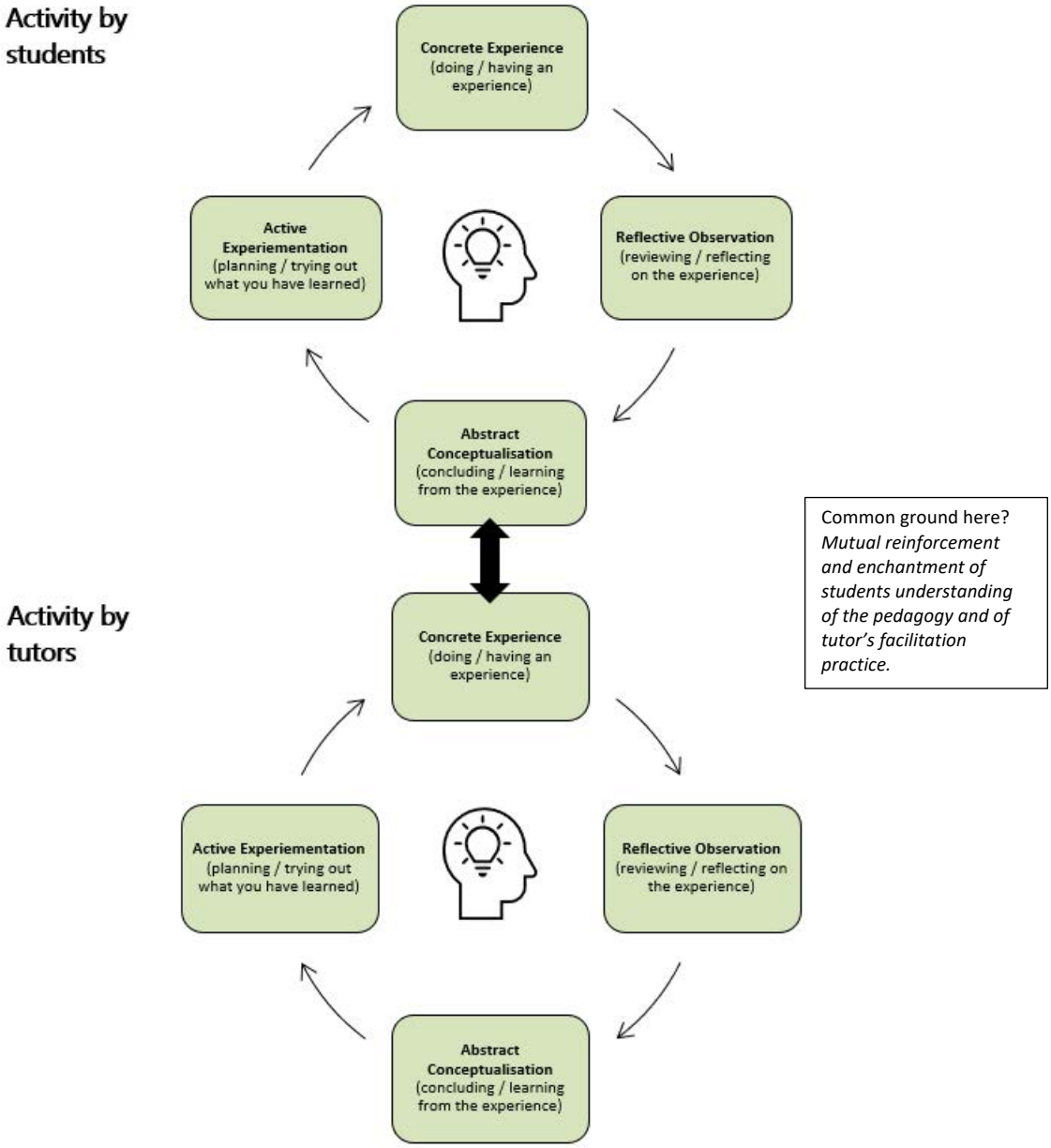
I sought Clarissa's input from the perspective of her recent experience of radical experiential learning. I hoped that together we could agree and outline a specific proposal.

Clarissa

When John asked how I felt about joining him in exploring this idea, I agreed—with some qualms, for I had never heard of the Kolb cycle and had not taken part in a linkage with my experienced tutors in the form that he aspired to encourage.

John explained the cycle as the pedagogy underlying my recent experiences. He did so in terms that I summarised in Figure 1, which may be familiar to most readers but were new to me. According to this constructivist model, most learners commence development by reflecting on recent and unfamiliar experiences. From this, they reflectively conceptualise generalisations, which they hope will be relevant and useful in forthcoming experiences. That certainly happened repeatedly in our course. It differed from the common practice with the Kolb cycle in that constructive feedback was mainly provided by peers and occurred during the activity rather than afterward.

Figure 2. Overlap of Kolb cycles



Proposed by Harte.

DISCOVERING KOLB

With hindsight, I realise that the first weeks of our course were facilitating us to become successful engineers by developing skills that will be of paramount importance to us once we graduate. The opening module established the foundation by releasing us from the shackles of learning from a schoolbook (Quilligan et al., 2017). It was structured so that we repeatedly followed the Kolb cycle—without knowing that name or theory. It built strongly on reflective reviewing and peer interactions.

Experiences

Fresh experiences proliferated in the first weeks. The need to question logically and think creatively was much required. We were given little guidance then and in the weeks that followed. We usually simply received a project title and a deadline. Some titles were specific, but others could be interpreted in a magnitude of ways.

Within the first 20 minutes of class in Week 1, we were split into groups of 4–5 students. Each group was given its first presentation trigger; all were different and open-ended. One group was asked to create a paradoxical overhang (whatever that is), and yet another to create a device that could measure time. Ours was: "Can a child easily lift a fully grown adult?" We looked at each other in confusion. "Obviously not," we thought, but then we realised that this wasn't a sufficient answer to present on the coming Friday. We pondered, looking for ways to change our answer to a "yes." We identified options such as levers and pulleys. We chose pulleys and decided to assemble an arrangement that would demonstrate our affirmative answer.

Come Friday, the nervousness around me was all I could see. Our first presentation of the year! What if I made a mess of my words, or had a shaky voice, or embarrassed myself in front of the year? Or what if our pulley system did not work well? When our turn came around, I was doing the opening. I read from my sketchbook and probably looked up on merely four brief occasions.

In Week 2, our next trigger was: "Think of a problem that has always intrigued you and come up with a solution to this problem." We had a week for this individual task, calling on us to exercise creative freedom. But many of us struggled to even find a suitable problem in which we had genuine interest. This was a challenge in itself! My chosen problem was the fact that antibiotics are becoming immune to our diseases, and my solution was moving to alternative medicine. Our response was to be presented—alone—in Week 3. I could feel anxiety creep up my throat. The thought of standing on my own in front of two lecturers and 41 students and speaking about my own interests was terrifying.

In small groups, we also faced an open challenge to get someone to the other side of a campus pond, dry. This 12-week task encouraged creative thinking. While we were brainstorming in Week 1, facilitated by our lecturers, no idea was too outlandish. Some suggested a zip wire, a tunnel, or bribing the person to walk round overnight, unobserved! We opted to design and build a six-metre wooden structure.

In all these early student experiences, a strong opening theme was established by the succession of demanding and outlandish open-ended triggers for us to complete. This constantly pushed us throughout Semester 1 to achieve adequate self-managed self-development of core abilities. With trigger titles that often varied from group to group, each as eccentric as the next, all we were given was a title and the deadline. The rest was up to us. When we asked: "Would we all speak during the presentation? Will we use props?

Diagrams? How long must the presentation be?", the answer was simply, "Whatever it takes for you to successfully present your points."

I remember vividly the strong sense of bewilderment throughout the class at that time. There appeared to be no common learning outcome—or so we thought. With hindsight, I now realise that the learning outcome was not based on topics that we had to learn. The aim of the programme, with its carefully structured and demanding tasks and the constant need for us to seek enhancement, was to aid us in developing vital skills that cannot be taught nor learned from didactic inputs.

Reflections

Each closing presentation was video recorded. No matter how difficult it was to watch yourself, this was required to prompt us to reflect on our own and our group's efforts, constructively identifying the highs and lows. Our lecturers asked us to make notes of three things that we did well and three things we could improve on for the next presentation. As opposed to having lecturers pointing out our nervous demeanours, this was done by yourself or with peer assistance. Our recall was prompted by our facial expressions, our darting eyes, or our fidgeting. I found it particularly useful to be reminded of how I had felt during the presentations. For example, re-watching my stuttering, I could recall how I felt in that moment and so opened my mind to finding ways to avoid having that feeling next time. I soon found that feelings are a significant aspect of the learning experience and that recall of feelings prompts thoughtful and constructive reflection.

I felt proud of how much I had improved following the Week 1 review and reflection. Initially, I had just read from my notebook; next time, I did not. I used hand gestures, smiled, and made eye contact. Whereas initially I was rigid in my stance and movement and appeared timid, my second presentation looked more natural and had some flow to it. From our first reflections on what had gone well or less well, we had effectively identified constructive advice to ourselves for next time.

Interim review of learning and development

After the first 7 weeks, we each had to write and submit an evaluative account of our learning experiences. This was a new demand for most of us, so we struggled at first to respond adequately. We had to identify how we had iteratively progressed from identifying weaknesses to thinking of ways to bring about improvement. We were expected to devote considerable reflective time to analysing and reviewing each experience, drawing on various forms of data, and generalising about how to be more effective next time. As we actively progressed in our searches for better ways of exercising critical abilities, we learned to ingather and consider data to evaluate the outcomes and to learn from them. Our time in class buzzed with peer interactions as we learned from and with each other.

We could send our drafts to John (as a visiting tutor) for confidential suggestions regarding improvements that we could consider before finalising and submitting our reviews. He was inspired by the enthusiasm and the achievements conveyed in many reviews and what he has since described as our emerging engagement with metacognition. He sought permission from 12 of us to compile and conflate segments of our submissions for publication. Our ready agreement was followed by a series of emails, with drafts being sent back and forth as the article was compiled. The result (Cowan, 2020) was quickly published under John's name with appropriate credits after he had provided an opening section about the reflective planning and reviewing.

Needing to be constructively reflective on myself and my core abilities as a learner brought me to realise that I can profitably reflect not only on myself as a learner, but as a person, a friend, a daughter, even as someone you pass by on the street. I am now firmly of the opinion that being pro-actively reflective is an invaluable ability that our class members have been prompted to gain through the demands of this course structure. It is linked with other abilities such as presentation skills, teamwork, speaking and listening, adaptability, creativity, communicating through various media, and time management skills. These have been the main core skills or abilities on which we have chosen to concentrate our experiential learning, originating, of course, in our learner-directed problem-solving activities.

Active experimentation

We progressed adventurously, yet with constant reflective attention to advancing our immature abilities in the next experience in what is apparently called active experimentation. This total process, I learned from John, is called constructivist learning. At first, I thought Figure 1 was a fair description of what was expected of us in that transformative semester, especially in our active experimentation. But I pointed out to John that Figure 1 takes little or no regard for our important interactions with peers during our frequent reflections on practice and in our reflections-for-improved-performance next time round. I now understand that these made our development socio-constructivist. Pinpointing their importance provided an "Aha!" moment of sudden discovery and understanding (Jonsson, 2020) for John in our partnership discussions.

Facilitative tutoring

We always had the necessary tools to complete the tasks. Any questions we had were willingly answered—but simply with either a question, general advice, or with direction to more tools that we could use to answer the question ourselves. Seldom were we given a straight and directive answer. To be frank, I initially found this infuriating. I wanted straight answers so that I knew precisely what the lecturers expected of us. With hindsight, I see that their approach stimulated us to think independently. When we are in the working world and we have a question, there might not be anyone who can offer us a definitive answer; accordingly, the onus will fall on us to act effectively and find it for ourselves.

With our questions being answered with questions, we were leaving after class with more questions than answers and a keen desire and need to find answers to move our projects forward. We exercised and developed our minds, as we were forced to think outside the box.

Creativity

I reflectively identify creativity as a central ability that should be expected of all engineers. I learned from our Semester 1 experiences that having the ability to read a trigger or problem and open one's mind creatively to new possibilities is a great advantage as an engineer. This is how new solutions are born and diversity in ideas is encouraged. Being bold enough to question what we take to be true and not to simply accept, being daring enough to test what we accept as fact, and developing such abilities lay at the heart of our programme.

TUTORS IN PARTNERSHIP WITH LEARNERS

John

In my long experience of staff development, I have found that many educational training schemes for inexperienced university tutors often encourage them to follow the Kolb cycle (Figure 1). But they do not begin from an experience, as they did for the University of Limerick students. They start, like Heywood's graduate students (Heywood, 1996), from a generalised pedagogical conceptualisation that they have met in their training. They plan to try it out in active experimentation and go on to gather data about their students' consequent learning to inform the reflective review that will prompt them to revise or consolidate their approach. Thus, like the Limerick students, they would iteratively engage in what Freire (1972) advocated as "praxis"—an activity informed by lived experience rather than by theoretical considerations and leading to action directed at achieving transformation. The Limerick programme in which we were both involved emphasises the need for and worth of Dewey's (1910) active experimentation, which is regrettably often disregarded in schemes for reflective development of practice (Cowan, 2013).

The proposal that I shared with Clarissa for her constructive comment was to exploit a possible overlap between complete Kolb cycles of tutors in training and their students. This idea came from my noticing that, when circumstances are such that both trainee tutors and students are well into their own cycles from their own respective starting points, they could interact constructively. I saw potential in such an interactive overlap—provided programmes were planned to bring them together temporarily and preferably physically. The students' informed reviews of their recent engagement in developing core abilities could inform their tutor's reflections regarding the effectiveness of their chosen approach to developing such abilities. At the same time, learners' facilitative immersion in discussing their experiences with tutors could give them helpful insights into the underlying pedagogy.

Clarissa and I proceeded to explore the potential of the overlap. We considered three cases where I had dabbled in setting up some learner/tutor dialogue at an overlap in Kolb cycles for tutors and learners who were both pursuing self-development. We tested these against Clarissa's experiences and looked for features of significance that were present or missing in our tentative model.

The first case was a 3-week British Council programme delivered in the 1980s (Cowan & Meleg, 1982). The learners on this occasion were trainee staff developers and inexperienced lecturers.

CASE STUDY A: TRAINING STAFF DEVELOPERS IN COLOMBIA

John

I was a visiting consultant in a convoluted 3-week programme which I had planned. My remit was to offer basic curriculum development courses to university lecturers while also providing early training for potential staff developers. I had combined the two aims, and we recruited participants accordingly.

Week 1 was an adapted version of an experiential learning programme that I had already established for newly appointed lecturers in some of the smaller Scottish universities. My overhead projector transparencies setting out inputs and tasks were rewritten in Spanish (with local assistance) and presented fairly slowly in English with

neighbourly sotto voce translations when difficulties arose. The task aims catered for individuality; participants focused on outcomes that they deemed central for learners in their disciplines. They followed a Kolbian structure in so doing. Groups worked on their tasks in Spanish. I made frequent use of a dictionary.

At the close of Week 1, most participants confirmed their interest in providing staff development in their own settings. They devoted the weekend to preparatory work, fashioning their own version of my programme and sharing out presentation and facilitation for an incoming cohort. They adapted Week 1 tasks and materials to be appropriate for delivery by inexperienced South American developers. The trainee staff developers presented and facilitated their programme in Spanish to a second incoming cohort of university lecturers who had enrolled for a course on curriculum development. I debriefed presenters and facilitators immediately after each session, which was observed by the trainee developers who were not directly engaged, but who provided peer feedback. Reflective peer reporting and constructive discussions between learners and trainers were major features of the interactions in this programme.

At the end of Week 2, participants who were willing and available to continue formatively evaluated their past week's activities and efforts and further revised the programme accordingly. In Week 3, this team took full charge of their programme with another incoming cohort and reflectively reviewed it. Members then departed to present their own programmes in their own institutions and countries. Reports of successful programmes in Colombia and two other countries filtered back.

Clarissa

Constructive feedback and associated dialogue

I noticed in John's account that constructive feedback and dialogue featured strongly, bringing together trainee staff developers and trainee lecturers with their somewhat different priorities for development. Constructive feedback and reflective dialogue similarly featured effectively in my Semester 1 experience. We gave our feedback to peers by writing on sticky notes what we thought to be admirable features in their presentations, together with some constructive criticism. I found this technique useful as it made us reflect on other groups' efforts as well as on our own performance. As we wrote our constructive comments for them, reflecting and noticing where they fell down in their presentations and identifying the strengths of their work, it helped make us aware of our own strengths and weaknesses and of possibilities for improvement. After having received feedback from lecturers for so long, it was effective and noticeably stronger for it to come from an empathic peer.

John's commitment to constructive interactions between learners and tutors had been apparent to me during his commenting on my draft Week 7 review. It had become more evident as he and I collaboratively assembled and expanded this storyline in writing the present paper. Interaction, therefore, was emerging as a feature to add to Figure 1.

John's next case study brought together motivated students and purposeful tutors from a range of disciplines, with clear-cut aims and roles in their relationships. Both learners and tutors were seeking enhancement of practice, concentrating on structured and explicit tutor/student interactions.

CASE STUDY B: DEVELOPING ESSENTIAL ABILITIES FOR ISOLATED LEARNERS

John

As Scottish director of the UK Open University, I was concerned to enhance our support for geographically isolated learners. I planned a residential activity for remote tutors and their remote students, to be held at a remote residential location. I invited some keen (part-time) tutors to join me for a 48-hour weekend devoted to actively experimenting with means of developing vital core abilities for their isolated students.

The programme began with a presentation of the Kolb cycle; this input of abstract concepts followed Skemp and Markle (Cowan, 2006) in using only examples to illustrate its elements. Trios and quartets then worked to devise active learning events for their own (very varied) programmes, prioritising the development of needs identified by students. On the Saturday evening, when several invited students had arrived, tutors began testing their plans. Needs and specific aims were collaboratively negotiated and addressed by tutors and students. They included planning responses to assignment tasks, effective communication, time management, resolving learning difficulties, and the formulation and resolution of effective questions.

The visiting students enjoyed this residential event with its emphasis on reflective development through relevant learning experiences dealing with needs that they had shared in identifying. They were understandably enthused. Most tutors declared a genuine intention to concentrate further on active constructivist learning and had already begun to think about how to do that (Cowan et al., 1995). Some had initiated collaboration with their learners participating as action-researchers of their own processes. Some tutors and students planned to identify the impact of face-to-face tutoring activities on learning, using Kagan's interpersonal process recall (Cowan, 2006). Some tutors and students went on to use Kelly's repertory grid (Cowan, 2006) to enable individual students to classify their reactions to particular forms of tutorial feedback comments.

Clarissa

Reflecting on interactions promoting development

Case B seemed to me to epitomise the potential of overlapping staff and student development. The tutors progressed to experimenting with new approaches and to finding out with their students about the learning and development which the programme was occasioning for them. The students were prompted to discern specific constructive messages about their own further skills development in the data that they were unearthing. However, they lacked the regular data-based reviewing that was such a powerful feature of my own learning experience.

The data-based reviews that we submitted after the first 7 weeks of our University of Limerick course certainly generated usefully informative feedback for our lecturers, such as the outstanding needs that we identified in our plans for active experimentation. Their feedback to us was at the same time effective in the other direction, suggesting effective ways in which our self-managed development might be rendered more effective in the coming semesters.

John's final case study confirmed the potential of overlapping activities whose discussions contributed in both directions to the development of both tutors and learners.

CASE STUDY C: DEVELOPMENT OF ABILITIES FOR PROJECT-ORIENTED LEARNING

John

I was asked by Aalborg University to run a 1-week residential event at a remote guest house in North Jutland. I followed the same outline and principles as the weekend Scottish residential workshop. However, the event was longer, and the Danish lecturer participants taught in the context of project orientation.

The Danish students joined the retreat for the final 3–4 days. They came fresh from involvement in a demanding first-semester project. The features of our programme were otherwise as described for Case B, with abilities concentrating on nurturing creativity; effective teamworking; and planning, managing, and reflectively evaluating self-directed engagement in project-oriented problem-based learning. These aims were carefully negotiated at the outset in interactions between students and lecturers.

Five months after the integrative event, the students were asked to evaluate their experience with hindsight. "You must never do that again!'", their forceful spokesperson announced. "Why, what went wrong?", the Danish coordinator inquired anxiously. "We had such an advantage over the other students in the class in the following semester, that it was totally unfair. Next time, you must do it for everyone." The Scottish-Danish team thus had student endorsement of the event.

Clarissa

The importance of core skills development being self-managed

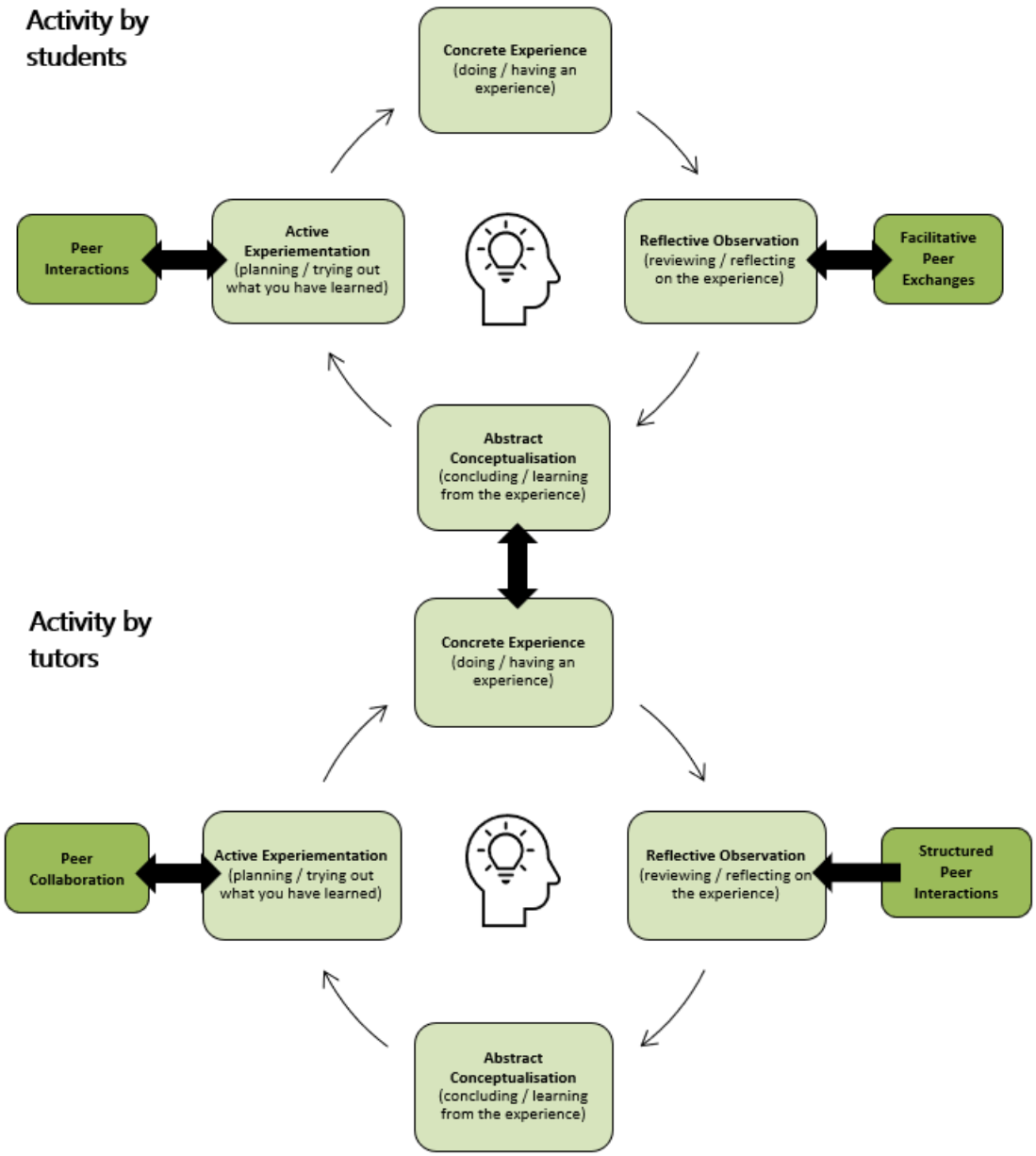
Like the Danish students in Case C, I now feel at a distinct advantage over other future graduates of civil engineering through having concentrated with my facilitative lecturers on developing, applying, and refining my core abilities. This method of learning that students at the University of Limerick are experiencing not only expects you to develop generic capabilities, such as problem-solving skills, time management, and public speaking, it also encourages you to discover new things about yourself and things that you should still work on. Teamwork is a highly valued and self-developed skill in our course, for as civil engineers a lot of what we will be doing will be as part of a group. So, we are not only learning the coursework theory that we shall be using as graduates, but our lecturers are nurturing the development of vital skills that we should embody in our practice if we are to be the best engineers that we can be.

From analysing John's three cases, I identified three other important features and firmly advocated their addition to our developing model:

- Regular constructive interaction with peers
- Frequent data-based reviews
- Aims based on needs identified by learners

John agreed, and I set up Figure 3 accordingly.

Figure 3. Developed model



Proposed by Harte.

TEACHING AND LEARNING PARTNERSHIPS

John and Clarissa

In our partnership, we have worked together as co-learners (Healey et al., 2014), and identified (and significantly augmented in Case C) the features of purposeful integration of tutor/learner activity when the development of the learners' core abilities is the main aim for both parties. Our student/tutor partnership has thus assembled a model for the development of abilities featuring partnerships between developing students and developing tutors. We have done so by following Freire (1972) in believing that our dialogue in constructing this paper should embody respect and should not involve one person acting on another, but rather people working with each other.

The methodology that we propose departs from the more common staff-centric outcomes of many partnerships (Mercer-Mapstone et al., 2017). It is learner-centric, treating both tutors and students as learners.

We suggest that developers should:

- Ensure that trainee tutors become familiar with the Kolb cycle, using only examples to explain the process, as advised by Skemp and Markle (Cowan, 2006).
- Arrange for tutors to devise a programme for experiential learning that will be driven by the tasks/triggers that frame it.
- Expect the students' programme to concentrate attention on needs for development identified by the students.
- Commit tutors to facilitating and constructively questioning their students' regular generalising and reviewing, thus gaining evaluative information regarding the effectiveness of their programmes.
- Ensure that the programmes call for regular evidence-based review and reflective summarising of all learning and development by both parties, in their own words.
- Require informed reflection-on-development and purposeful reflection-for-development (Cowan, 2020) by all parties and encourage facilitation of this through purposeful and constructive peer interaction.
- Offer appropriate facilitative questions that encourage thinking about the very process of thinking, which can metamorphose into productive metacognition.

LIMITATION

The programme at the University of Limerick was well established in 2020. Clarissa consequently had no experience of interactions with trainee tutors. Nevertheless, we have found that elements of Clarissa's experience have contributed usefully to refining our scheme for trainee tutors and their students.

CONCLUSION

Clarissa

Reflections on action-researching in partnership

We both believe that, ideally, teaching and learning should be a partnership in which all learn, though some are more learners and others are more facilitators. It is in that spirit that we have addressed conceiving and assembling this paper. I have experienced as a student and co-author how students can experience full freedom to learn and a safe space for mistakes, in company with tutors as fellow learners.

Reflecting on this aspect of my life has been fundamental for me. Now that I am aware of the flourishing of basic skills, I want even more to succeed and embrace them. This present interaction between student and facilitator has led me to find further ways to enhance my core abilities. I have now come to appreciate the potential of socio-constructivist activity in partnership to enrich my self-managed development of abilities, even when that aim is not being separately addressed in our programme, as it was in that formative first semester.

John

The need to facilitate and encourage in our partnership without being directive or paternal generated considerable apprehension for me about this process and its possible outcomes for an inexperienced student co-author. In this writing partnership with Clarissa, where I have encouraged her to work outside her comfort zone (Hanna-Benson et al., 2020), her student insights have enabled us to creatively assemble a coherent proposal that enriches the innovatory fragments in my iterative case studies, hopefully balancing our attention between process and outcomes (Healey & Healey, 2019. The reciprocity in our partnership featured dialogue (albeit digital), a rich exchange of ideas, and negotiation (Mercer-Mapstone et al., 2017). Our relationship reminds me of what bell hooks (1994) wrote about engaged pedagogy in which she links creative teaching to engagement with students beyond that setting. Mutual participation between teacher and student can then occur when a student takes time to reconnect and work in partnership to identify the impact of working together, as I hope we have exemplified.

The authors were advised by their universities at the outset that the ethical approval requirements only apply to research involving students and to data and findings emerging therefrom. Our paper would be classified as scholarly collaboration, and therefore does not fall under their requirement for approval.

ACKNOWLEDGEMENTS

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NOTE ON CONTRIBUTORS

John Cowan *has long concentrated on the development of higher-level abilities through innovative interactions between students and tutors. His contribution here draws on his progressive and iterative staff development engagements at Heriot-Watt University, La Universidad de Los Andes, the UK Open University, and Aalborg Universitet.*

Clarissa Harte *is a civil engineering student at the University of Limerick. In her second year, she was awarded a scholarship in a STEM project and co-authored two papers reporting students' accounts of their self-managed development of core abilities. In her third year, she undertook an 8-month placement with Arup where the skills acquired from her classes were put into practical use. She will take up a contract with Arup when she graduates with a master's degree in 2023.*

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