

What We Owe to Donald Schön: Three Educators in Conversation

Ce que nous devons à Donald Schön: Trois éducateurs en conversation

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Le praticien réflexif : mythe ou réalité en formation à l'enseignement ?

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Résumé de l'article

Les lecteurs ayant une simple connaissance de la littérature de recherche dans le domaine de la formation des enseignants au cours des 25 dernières années sont conscients de l'augmentation spectaculaire de l'utilisation de la «réflexivité» pour décrire les attributs souhaités ou les comportements des participants aux programmes de développement professionnel pour les enseignants novices ou expérimentés. Notre intention est de tirer parti de nos propres expériences collectives de pratiques de recherche et d'enseignement pour cartographier comment et pourquoi nous avons d'abord été interpellés par les nombreuses significations associées à ce terme et comment notre compréhension a changé au cours des quelque 25 dernières années. Nous pensons que ce type de «réflexion-sur-expérience» est mieux révélée grâce à l'utilisation d'un style narratif et donc nous avons délibérément utilisé un format conversationnel afin de faire part de notre histoire.

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What We Owe to Donald Schön: Three Educators in Conversation

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Keywords: reflection; science teaching and learning; teacher education; community of learners; complexity theory

Abstract. Readers with even a casual acquaintance with the research literature in the field of teacher education over the past 25 years will be aware of the dramatic increase in the use of the term 'reflection' to describe desired attributes [outcomes/behaviours] of participants in professional development programs for both novice and experienced teachers. Our intent is to draw upon our own collective experiences in our research and teaching practices to map out how and why we initially became intrigued with the many meanings associated with the term and how our understandings have changed over the past 25 or so years. We think that this type of 'reflection-upon-experience' is best revealed through the use of a narrative style and therefore we deliberately use a conversational format to convey our story.

Titre : Ce que nous devons à Donald Schön: Trois éducateurs en conversation

Mots-clés : Communauté d'apprenants; enseignement des sciences; formation des enseignants; réflexivité; théorie de la complexité

Résumé. Les lecteurs ayant une simple connaissance de la littérature de recherche dans le domaine de la formation des enseignants au cours des 25 dernières années sont conscients de l'augmentation spectaculaire de l'utilisation de la «réflexivité» pour décrire les attributs souhaités ou les comportements des participants au programmes de développement professionnel pour les enseignants novices ou expérimentés. Notre intention est de tirer parti de nos propres expériences collectives de pratiques de recherche et d'enseignement pour cartographier comment et pourquoi nous avons d'abord été interpellés par les nombreuses significations associées à ce terme et comment notre compréhension a changé au cours des quelque 25 dernières années. Nous pensons que ce type de «réflexion-sur-expérience» est mieux révélée grâce à l'utilisation d'un style narratif et donc nous avons délibérément utiliser un format conversationnel afin de faire part de notre histoire.

Introduction

Readers with even a casual acquaintance with the research literature in the field of teacher education over the past 25 years will be aware of the dramatic increase in the use of the term 'reflection' to describe desired attributes [outcomes/behaviours] of participants in professional development programs for both novice and experienced teachers. Its extensive use, or some would say overuse, has quite rightly prompted some commentators to declare it a 'slogan' and now almost devoid of meaning (c.f. Zeegers, Russell, & Smith, 2003; Zeichner, 2008). As far back as 1993 John Smyth was declaring:

What we are witnessing is a kind of conceptual colonization in which terms like reflection have become such an integral part of the education jargon that not to be using them is to run the real risk of being out of educational fashion. Everybody climbs aboard under the flag of convenience and the term is used to describe anything at all that goes on in teaching. What is not revealed is the theoretical, political and epistemological baggage that people bring with them. (Smyth, 1993, p. 286)

Our purpose in writing this piece is **not** to undertake yet another review or critique of uses and abuses of the term 'reflection', as many others have already done so (c.f. Fendler 2003; Hatton & Smith, 1995). Rather, our intent is to draw upon our own collective experiences in our research and teaching practices to map out how and why we initially became intrigued with the many meanings associated with the term and how our understandings have changed over the past 25 or so years. We think that this type of 'reflection-upon-experience' is best revealed through the use of a narrative style and therefore we deliberately use a conversational format to convey our story.

We also hope to return to central concepts in Schön's work that would help us all in finding refreshing designs for teacher education programs, particularly at a time when calls for reform in public and post-secondary education are proliferating in the media. The conversational style we use in this article is a deliberate attempt to draw the reader into a set of ideas, presented 'in terms of both their chronology over the last thirty years as well as their logical interdependence and epistemic origins. In short, we've constructed this dialogue as a piece of teaching that locates our research and practice within a larger discourse about teacher education. We use this dialogue not only to recount the past in a personal review of scholarly work about reflection in teacher education as we recollect and put our understandings and collective experience together into some kind of perspective, but also to provide the outline of a promising new design for teacher education in Canada and elsewhere, one which is as important today as it was thirty years ago when Schön was working through his analysis of reflective practice.

1. The Setting

Earlier this year the authors had the occasion to get together after a seminar discussing some of the features of a new teacher education program that is being introduced at UBC in the Fall of 2012. During the conversation between the three of us, Allan and Gaalen began to reminisce about some of the issues surrounding teacher preparation programs that we recalled from the time that UBC had last made significant changes to their B.Ed. degree in 1986-87. At the time Allan was completing his doctoral studies at UBC with a focus on examining the nature of the practicum experience. Tony's doctoral studies at UBC, close to ten years later, also focussed on the practicum setting and both dissertations drew extensively upon Donald Schön's writings on the nature of 'reflective practice.' Gaalen was central to both of these theses as the doctoral supervisor for both Allan and Tony.

2. Our Conversation

2.1 The early days: Schön's visit to the University of British Columbia

Allan: Gaalen, do you remember when you invited Donald Schön to come to UBC to discuss his ideas about reflective practice and to see how his ideas might be used in the design of the new teacher education program that was being proposed?

Gaalen: Yes, I remember that time very well. It was in the Spring of 1986 when he came here for a week to a series of very interactive seminars with a variety of groups including graduate students and faculty members in the Faculty of Education plus a large public lecture—we still have a videotape of that lecture, which was a preview of the ideas that were to appear in his 1987 book *Educating the Reflective Practitioner*.

Tony: That must have been quite a coup, how did you manage to persuade Donald Schön to come to UBC for a week? What did you bribe him with? Surely the Centre for the Study of Teacher Education wasn't that flush then? Had you met him before?

Galen: You're right Tony, the Centre had a few more resources then but certainly not enough to bring Schön here for that period of time. In fact, Schön had been invited four years earlier to UBC in 1982 as a *Cecil and Ida Green* visiting scholar by the School of Architecture. Skip Hills, a visiting faculty member from Queen's University on sabbatical leave, and I saw this notice indicating that Schön would be giving a public lecture on "The Nature and Epistemology of Reflective Practice," which was based on his forthcoming 1983 book *The Reflective Practitioner*. In addition to being attracted to the title of the lecture, it turned out both Skip and I had read an earlier book written by Schön (1963) while he worked at Arthur D Little Inc., called *The Displacement of Concepts* which examined the role of metaphor and analogy in learning about and designing new industrial products. In brief, we both were very excited and impressed with Schön's lecture and the framework that he so elegantly described and embellished with examples. His lecture series lasted for a week and so I phoned his primary contact person at UBC in the Architecture School and asked if we might be able to meet Schön for lunch to discuss some of his ideas in an educational context, as most of the examples and cases he discussed were from architecture, medicine, town planning and the like. Fortunately there was a luncheon date open in his schedule and we were able to spend a very enjoyable hour with him exploring the potential implications of his 'reflective thinking framework' for professional practice in working with experienced teachers **and** for preparing new teachers.

Allan: Even now, I appreciate hearing this story, knowing Skip and others at Queen's who were consuming Schön's ideas as enthusiastically as we were on the 'wet coast'? It may have also helped to persuade Schön to come back for this 1986 visit that he knew we and the group at Queen's were already using his ideas in our research projects on learning to teach. The Canadian science education scene included a lot of people who had studied the history and philosophy of science. These people had a background in a form of experiential, investigative or inquiry teaching as well, most of them having been teachers of science in public schools in the sixties and seventies.

2.2 The Canadian Science Education Community

Tony: Who were some of these people?

Galen: Well there were several active science education groups in this area in Canada at the time. Allan mentioned the one at Queen's University with Tom Russell, Hugh Munby, John Olson and Skip Hills. Another was at OISE with Michael Connolly, Brent Kilbourn and Doug Roberts, who later moved to Calgary. And of course there was the group here at UBC. All of these groups in one way or another had a strong research focus examining various aspects of the nature of teaching practice. Michael's group at OISE broadened their interest in science teaching to focus extensively on elementary teachers' 'personal practical knowledge,' exploring in detail the methodology of 'narrative knowing,' which has some family resemblances to Schön's notion of 'reflective knowing' as was illustrated in their chapter in Schön's 1991 book, *The Reflective Turn*.

Allan: As it turned out, the mix of ideas about science, the teaching of science, and learning to teach science resonated with Schön's analysis of professional competence, reflection-in-action and reflection-on-action, especially during a time when 'constructivism' was appearing in the science education literature. The question was: Could we harness 'reflection' in such a way as to help science teachers 'advance' students from their 'naïve' conceptions to more powerful scientific concepts, or perhaps simply to understand where these students are coming from, never mind changing their ideas. Schön spoke about 'giving kids reason' at his 1986 talk in the Faculty of Education at UBC. I believe there was a philosophical foundation in the Canadian science education community to take hold of Schön's analysis of 'reflective teacher education.' Some of us insisted that teacher education itself be situated in practice in an attempt to blend the theoretical and practical aspects of the 'teacher education curriculum' in a meaningful whole. There were attempts in several Canadian universities to embed science teacher education programs in actual science teaching in schools (U of C, U of T, UBC, SFU, among others). I believe that many of us, working as science teachers in the sixties and seventies, were philosophically 'naïve realists,' whose approach to 'discovery learning,' as it was referred to in those days, was shallowly inductivist. Graduate school in science education included, for many of us, study in the history and philosophy of science. As a result I think we experienced something of an epiphany when 'constructivism' was introduced to the science education community and we were encouraged to consider different ways of 'making the world' (Goodman, 1978, 1984). I think it may have been this break from naïve realism that allowed a particular interpretation of Schön's *reflective practitioner*. In particular, this orientation encouraged science educators to consider what was happening in the mind of the learner, to begin a search for possible meanings learners might take from phenomena, given the kind of understandings of the world they currently held. For example, an Aristotelian representation of 'force,' as suggested by our ordinary use and understanding of the word, would likely lead to a particular misunderstanding of the Newtonian concept of 'acceleration.' Normally people think of force as being manifest in movement, rather than acceleration. Empirical research into students' conceptions (misconceptions, alternative conceptions) of numerous scientific concepts diminished our confidence in the science demonstrations we'd grown to love and cherish as a foundation for science education. And so, Schön's 'reflection-in-action' gave shape to a search for meaning in the mind of the science learner.

Tony: What do you remember about Schön's visit and how did it influence the last teacher education program revision?

Galen: Well one of the things that I remember the most about his visit was the way in which he interacted with the many different people that he met, in both formal and informal settings.

I'm not sure if you remember some of the seminars that he gave Allan, or the informal meetings that we had with the group of teachers that we were working with at the time in our research project, but his style of engagement was the same. He would always ask the people he was interacting with to describe or identify some practical issue or problem that they were intrigued with (or working on in a research context)

and then through a series of Socratic-like questions encourage them to speculate on the nature of the dynamics of the ‘learning environment,’ whether it was dealing with pupils in classroom settings (as with the teachers) or with aspiring teachers in a school or university setting. Obviously he would introduce some of his own thoughts on the nature of reflective practice, but it would always be in the context of a practical setting that emerged from the conversation with the people that he was engaging.

2.3 *Teacher Education in the Practice Setting*

Tony: Speaking of a practical setting, can you think of a practical example?

Galen: Well as Allan mentioned, one of the reasons and incentives for Schön to come here in 1986 for close to a week was that I mentioned to him in my initial phone call that there would be a chance to meet with the Teacher Education Review committee that was in the process of putting together a new B.Ed. program proposal to be considered by the Faculty. So, towards the end of his visit here we scheduled a two hour meeting with this committee and true to form, he began the meeting by asking the committee members to lay out some of the specific problems and issues that they were attempting to address with the program changes and how the new program structure would be dealing with these issues. He listened carefully as several speakers spoke about the overall design of the program in terms of the description and sequence of the required courses, the placement of the teaching practicums, and the elective courses after an extended practicum was completed. Everyone waited for what they expected to be an extended reply and congratulatory comments about the design of the new program. There was a stony silence when Schön replied, “I’m sorry to say this folks, but you have it backwards.” While he did go a bit longer to try and explain patiently his notion of ‘technical rationality’ and how it was very difficult to ‘front-load theory and techniques’ in university-based courses and then ask prospective teachers to go out and apply this knowledge in practical, classroom settings that they had not experienced before. But I do remember it was a very strained conversation from that point onwards; interestingly, no changes were made to the basic structure of the program, which was implemented shortly thereafter and has more or less continued to this day.

2.4 *Schön’s ideas fit with Joseph Schwab’s “Practical: A Language for Curriculum”*

Allan: I often think that Donald Schön’s ideas about reflective practice were ‘ahead of their time,’ that they were washed away in the din of the eighties and nineties by the explosion of rhetoric about reflection.

Galen: Well, in some respects with his focus on the importance of the practice setting he was following in the footsteps of Joseph Schwab who wrote several articles in the late sixties and seventies outlining his ‘Language of the Practical.’

Allan: I agree; the science education community had been significantly influenced by Schwab’s writings on the nature of the practical and the four commonplaces of curriculum deliberation. For me, Schön and Schwab spoke the same language; and so the idea of reflection-in-action was something that I held at the centre of my practice as a teacher educator. The result is a strong belief about learning to teach being embedded in actual teaching practice, embedded in the practice setting. And so I’ve tried to create ways of doing this in the context of courses I’ve taught in science teaching methods, as well as larger components of teacher education programs.

Tony: An interesting development that Galen and I pursued at a later point was a claim that Schön’s emphasis on inquiry within the context of professional practice was a significant prompt for the emergence of self-study in the early 90s as a form of educational research. We argued that this form of inquiry constituted the fifth common place and that Dewey’s work on ‘deliberation’ and Schön’s (1983) work on ‘reflective practice’ represent attempts to explain how it is that professionals engage in, improve, and theorize their practice. Others who have provided similar explanations include Connelly and Clandinin’s (1985) work on Personal Practical Knowledge, Grinnett and MacKinnon’s (1992) explication of Craft Knowledge, and Fenstermacher and Richardson’s (1993) articulation of Practical Arguments. Each of these approaches recognize that problematizing and acting upon curiosities, challenges, and surprises that arise for teachers in their daily practice constitutes the hallmark of professional practice. As such, *teacher inquiry* is not a new phenomenon to the world of teaching and teacher education. Indeed, we are being deliberately provocative in claiming that Schwab (1978) was only partly correct when he characterized teaching as having four commonplaces: for teaching to occur, someone (a teacher) must be teaching someone (a student) about something (a curriculum) at some place and some time (a milieu). A deeper reading of the works of three related theoreticians—Dewey, Schwab and Schön—suggests that there is, and always has been, a fifth commonplace. In order for teaching to occur, there must be a ‘some how,’ that is, a way for teachers to explore, know, and act upon their practice. For us the ‘some how’ is *inquiry within the context of professional practice*. As such, the fifth common place of teaching is self-study.

2.5 *Contemporary ideas about self-study in teacher education*

Allan: And the notion of ‘the public’ in self-study?

Tony: We acknowledge the arguments of self-study advocates who believe that such inquiries only constitute ‘self-study’ if those inquiries formally enter the public domain (i.e., are published) but in our work we argue for a broader conceptualization of what constitutes ‘the public’ and believe there are many layers to what and how such inquiries are engaged in and by teachers, both individually and collectively.

Allan: We could easily start a second wave in the way we speak about *those who were true to his ideas*. There is something intoxicating about the word ‘reflection.’ Unfortunately, despite our collective attentiveness to the generative possibilities of the theoreticians you described Tony, it is quite possible that a second wave of rhetoric—even today, thirty years later—would also wash away the essential point Schön was trying to introduce. The essential point is that human reasoning is fallible.

Tony: Allan, what would you have us be attentive to?

Allan: There are times when thinking bends back on itself, finding at once the limitation of the former, initial or at least preceding interpretation of events, and the sensibility of the newly minted version of the truth, that is, the newly 'reframed' problem and its implications for a new direction to whatever action or inaction is taken to remedy it. Reflection is an achievement. We believe we discovered the way things actually happened, the actual intended meaning of a phrase, whether it is a student's response on an exam question, or a comment she made in class, or even a glance from a colleague in the hallway. For whatever reason, we end up with a new interpretation, a new way to understand a particular event, in Schön's terms, reframing a problematic situation and bringing about a new possibility for acting in the situation, a new possibility for a solution or remedy of the problem. As Schön elaborates, this reframing of the problem brings about new experiments in practice, more or less along the lines of a hypothetico-deductive system, in the form of 'move-testing' and 'hypothesis-testing' experimentation in practice. This is neither 'inductivist,' nor positivistic, nor even propositional in nature; it really is a different epistemology of practice, as Schön would say, or, as you mentioned Gaalen, what some teacher education researchers have referred to as 'personal practical knowledge,' 'craft knowledge,' 'practical reasoning,' and so on. Schön was certainly curious about the conditions that would give rise to these kinds of insights in the mind of the practitioner, but he certainly did not subscribe to a linear, reductionist, or mechanistic approach.

Tony: Allan, that sounds to me an excellent rendering of what Schön was talking about when he used the term 'reflection-in-action'; a term that I think was misunderstood and misused by many folks when commenting on Schön's perspective.

Allan: I agree Tony, but in addition to those commentators one can see a variety of approaches that were taken by researchers in the field of education, especially teacher educators and curriculum theorists. Some saw the pathway to reflection as Gestalt, some as deliberative inquiry or practical reasoning, some as Zen Buddhist mindfulness. But at least these different approaches were true to the idea that reflection was a product, not a process.

Tony: How so?

2.6 Reflection as an achievement—individual and social dynamics

Allan: Reflection, to these researchers, meant some kind of reconstruction of reality, a re-visioning, a new truth, a paradigm shift, enlightenment, epiphany that was situated in the complex and multidimensional problems of practice as they arise and confront the practitioner *as he or she is engaged in the work itself*. All of a sudden, course titles and reading lists in teacher education and graduate schools alike were overcome with the language of reflection, and reflective teacher education immediately took hold as a process. The effect of this was an intensification of the very thing Schön despised and critiqued so persuasively under the name of *technical rationality*. Instead of learning in the practice setting, students of education were learning through dual-entry journals. Everything from navel gazing to star gazing counted as reflection and all of it was seen to be good in its own right.

Tony: So, how would you describe what you did with Schön's ideas?

Allan: Schön's ideas influenced me in very significant ways. In my doctoral work I began to articulate three of Schön's (1987) 'coaching models' in the context of a science teaching practicum—what might be called a 'reflective practicum in the context of constructivist science teaching.' I developed a set of criteria for identifying in science teaching practica features of Schön's 'coaching models' for reflective practice. These coaching models formed the basis for subsequent developments in my own practices as a teacher educator, and various projects and courses developed in the teacher education programs at the University of Toronto and later at Simon Fraser University. The common feature of many of these developments was creating occasions when I could teach school children together with my students in what I referred to as a 'teaching studio.' I began to theorize about these 'school-based' teacher education programs in communal terms, rather than individualistic terms, as was the case in my doctoral work. I noticed the student teachers were influencing one another's practice, both in terms of their overt discussions about teaching, in which one could trace how they were framing and reframing problems of practice, and in terms of how they seemed to be unwittingly shaping one another's behavior in the practice setting—what I referred to as 'teaching manner.' Rather than think of dispositions and habits of mind that developed during practicum in the minds of individual student teachers, I began to see these dynamics in more social terms (MacKinnon & Grunau, 1994). I found my attention shifting from 'individual' to 'social' dynamics of learning to teach, and I began to see how teacher education students were learning from each other's practice in this 'teaching studio.' This is why I used the expression 'learning to teach at the elbows' (MacKinnon, 1996) in an attempt to emphasize the social and covert aspects of learning to teach. Tony, your work has also taken up this social theme, yes?

Tony: Certainly, to some extent. But as I listen to you and Gaalen, I am reminded of my own early experience with Schön's work. I had started my doctoral program and Gaalen, as my supervisor, knew that I was interested in working with student teachers in practicum settings so he gave me a copy of the tape with Schön's 1986 UBC lecture that you mentioned earlier. **Allan:** Well, the tape is special in that it shows how eloquently Schön spoke about and expanded upon his ideas 'on his feet' so to speak.

Tony: It is interesting that you mention that because there are a couple of things that I have come to admire about Schön and it wasn't until much later in my own work that I appreciated those aspects. For example, I remember being deep into the final stage of writing my dissertation and I was struggling to render the student teacher's reflections on their practicum experiences. At this point, I went back and read Schön's two books and as a result had a totally new appreciation for his writing abilities. The very things that I was struggling to put into words were, as you note Allan, so eloquently captured by Schön. I remember reading the texts the first time and thinking that they were relatively straightforward and commonsensical. It wasn't till I struggled with my own writing about reflection that I realized how skillfully

and artistically Schön's texts have been constructed. Lesson to self: "Easy reading is damn hard writing" (Hemingway).

Gaalen: I agree Tony, it is difficult to write clearly, particularly when you are dealing with the complex epistemological issues that Schön was addressing—indeed, an 'epistemology of practice.'

Challenges of articulating an 'epistemology of practice'

Tony: Yes, the challenge of capturing and rendering an epistemology of practice! In my dissertation work, I brought Schön's ideas to the practicum setting in an attempt to chart the reflective practices of student teachers. After reading Schön's work, I thought that this would be a relatively simple task. I videotaped several of the lessons they taught and the associated pre- and post lesson discussions about those lessons with their school advisors over the course of a 13-week practicum. I then used a modified form of stimulated recall whereby I gave the students the remote control and asked them to pause the recordings if they felt something of significance had occurred and to share their ideas about that incident with me. I remember that it was very difficult watching the videotapes with the four student teachers in my study and observing on the tapes what I thought were wonderful examples of reflection and the students didn't do as much as raise an eyebrow let alone stop the video and say something! However, I was equally surprised when they did stop the tapes at points where I thought that there was absolutely nothing of importance happening, and they would then expound at length on the significance of what had just occurred (be it an incident with a student in the classroom, a comment by their advisor, or something that they did or said themselves); this was a very sobering lesson on how students make sense of their practice, of reflection-on-action. The most valuable thing that I learned from the experience was that reflection-on-action is born of incidents but thematic in nature. That is, there is a very strong temporal (and rarely incidental) element to reflection that I had not appreciated in my reading of Schön's work. I recall thinking at the end of the research that I was glad that I was studying reflection-on-action and not reflection-in-action, the latter being one of two central elements of Schön's work. How would you tackle the 'knowing in practice' that embodies reflection-in-action? In terms of an epistemology of practice, I think this is one of the most challenging aspects confronting researchers.

Gaalen: While this notion of 'knowing in practice' has been around a long time (at least as long as Aristotle) it has remained a very swampy terrain, to draw on a metaphor often used by Schön. But it was exactly this attempt both to document and to provide a language for how professionals exhibit competence in the face of the many uncertainties and the value conflicts in practice settings that attracted me to his work.

Tony: And that was a central theme in many of the chapters of the book that Peter Grimmett and you edited in 1988 entitled *Reflection in Teacher Education*.

Gaalen: Yes. Incidentally, most of the chapters in this book emerged from responses and critiques from his UBC visit and from two presentations that Schön made at the annual meeting of the American Educational Research Association in 1987. Several of the chapters in this book contest in various ways the notion of an 'epistemology of practice,' although it is interesting to note that one of his critics, Gary Fenstermacher, later changed his position and acknowledged the importance of knowing in practice in a subsequent influential article from 1994 entitled 'The knower and the known: The nature of knowledge in research on teaching.' I think that this difficulty of describing knowing in practice (or 'situated knowledge' as it has been more recently called by some) is also why Schön was attracted to the use of particular cases in his writing and the focus on practical examples or problems, as I mentioned earlier, in his conversations with folks. But, I think that even Schön experienced difficulties in clearly articulating a couple of key ideas in his analysis of an epistemology of practice such as his notion of 'reflection-in-action.' Tony, this is perhaps the reason that reflection-in-action presents such difficulties for researchers that you alluded to just now.

Allan: I think Schön gave us an outline for understanding how the human mind works in practical and professional settings: *reflection in* and *reflection on* practice. The basis of his notion of competence in practice in the so-called 'professions' was an idea of someone who could turn problems around in the mind, looking at them from different angles and perspectives, as he would say, setting and reframing these problems in the search for viable solutions and promising courses of action. But these insights were happening at a time when educational research was about to take a swing into much more socio-cultural representations of learning, identity and agency, which is perhaps why Schön's ideas might seem 'individualistic' by today's standards, I don't know.

Tony: That was the second thing that always struck me as puzzling: how some folks seemed to read Schön as though he was casting reflection as a purely personal construction. I never read him this way. For example, one of my favourite quotes from Schön (1983) includes his reference to 'a conversation' with the practice setting:

[P]ractitioners reveal . . . artful inquiry by which they sometimes deal with situations of uncertainty, instability, and uniqueness. This pattern of reflection-in-action which I have called 'reflective conversation with the situation.' . . . The inquirer remains open to the discovery of phenomena, incongruent with the initial problem setting, on the basis of which he reframes the problem. . . . Reflecting on surprising consequences of his efforts to shape the situation in conformity with his initially chosen frame, the inquirer frames new questions and new ends in view. . . . Faced with the same phenomena that he finds unique, the inquirer nevertheless draws on some element of his familiar repertoire which he treats as exemplar or as generative metaphor for the new phenomenon. (p. 268)

Gaalen: So, are you suggesting that 'reflection-in-action' always requires some sort of social setting where the 'inquirer' is engaged in a form of social problem-solving requiring some type of feedback from the setting?

3. Conversation with what, with whom?

Allan: That's a key feature of Schön's 'epistemology of practice,' this notion of being in conversation with the practice setting, with what I think he would call the 'materials of the situation,' paying attention to the 'back-talk' of experiments-in-action and, particularly, surprises and problems as they occur along the way, as they arise in the context of our understanding of the people, places and events 'in our faces' as we carry out the work we do. This idea of being in conversation with the practice setting emphasizes the improvisational aspects of teaching—how we think-on-our-feet, as it were, making decisions in the moment. In order to explicate what might be happening in the mind of the practitioner in this moment of thinking-on-the-feet, I think Schön needed specific examples, which were ultimately about learning a practice. He found some of these specific examples in the dialogue he recorded between 'master and apprentice' in diverse professions and problem-solving contexts. His understanding of learning in practice simply didn't line up with what we have in the usual teacher education program, as it would reside alongside the 'arts and sciences' of research-based universities—the kind of learning that could take place in the lecture hall, where new ideas, concepts and understandings would at times be assimilated by passive absorption, or 'armchair' work as it might be referred to in graduate programs, when the proper understandings of foundational concepts are 'in place,' and where the narrative of the discipline is sufficient on its own to portray its 'content.' I think that's what Schön meant when he said, "You got it backwards." I remember that awkward moment, Gaalen, now that you mention it. I think Schön was critiquing the idea that professional competence could possibly be based in a 'mastered curriculum' presented during the teacher education program, one that resides somewhere in a timetable of classes existing outside of the practice setting itself. I think he chose to criticize this whole idea by naming and attacking 'technical rationality' as a way of proceeding from 'principal to practice.' Simply put, Schön didn't see this transition as a simple matter; he saw it imbued with fallacious human judgment and vulnerability—vulnerable in terms of our tendency to analyze quickly and act accordingly on the basis of limited, partial understanding—understanding that is always subject to refinement, and verification of a sort, in practice through the reflective thoughts and actions of the practitioner in the moment.

Tony: I find myself juxtaposing the Schön quote about a 'conversation with the setting' with Gadamer's (1990) quote on the nature of a 'genuine conversation':

... the more genuine a conversation is, the less its conduct lies within the will of either partner. Thus a genuine conversation is never the one that we wanted to conduct. Rather, it is generally more correct to say that we fall into conversation, or even that we become involved in it. The way one word follows another, with the conversation taking its own twists and reaching its own conclusion, may well be conducted in some way, but the partners conversing are far less the leaders of it than the led. No one knows in advance what will come out of a conversation." (p. 383-384)

What I found in Schön's work that really changed the way I thought about teaching and learning is that an essential element of any practice is the ability to remain open to possibilities and to engage in a 'back and forth' conversation with that practice. This raises some interesting questions: What does it look like to cast teaching practice as a genuine conversation? Can it be done? Under what circumstances? And does it 'fly in the face' of the teacher's position as 'the authority' within the classroom. Enough of my ramblings! Allan? Gaalen? Are there critical turning points in your engagement with Schön's ideas that this many years on, still remain with you and are a part of your practice? Or better still, actually changed your practice?

Gaalen: For me, the most profound impact of Schön's work was his overall perspective on the nature of learning, specifically as it played out in his analysis of professional competence. His focus on the importance of 'the particular' in a practice setting and how one had to be open to surprising events in that setting and subsequently to inquiring into the nature and potential resolution of those surprises, was a welcome change to the more dominant model of technical rationality that we discussed earlier. This perspective on learning influenced both my practice as a researcher and perhaps more importantly as a teacher educator, as exemplified by our work in the CITE (Community and Inquiry in Teacher Education) program that Tony, I and others initiated over 15 years ago. The dominant framework for CITE was one of inquiry on the part of both the faculty members as well as the teacher education students. And the many changes that we made to the CITE program over the years were a result of these inquiries (c.f. Farr Darling, Erickson & Clarke, 2006). In some of his other writings, not referenced as much in the educational literature, Schön was also well ahead of his time in terms of his analysis of both personal learning and 'learning systems.' In his 1973 book, *Beyond the Stable State. Public and Private Learning in a Changing Society*, Schön develops the argument that 'change' is a fundamental feature of modern societies and that it is necessary to develop social systems that can learn and adapt. He goes on to discuss 'learning systems' which must overcome a strong tendency for maintaining a structural conservatism so as to

permit change of state without intolerable threat to the essential functions the system fulfils for the self. Our systems need to maintain their identity, and their ability to support the self-identity of those who belong to them, but they must at the same time be capable of transforming themselves" (Schon 1973: 57).

This perspective predated, but anticipated, much of the current writing on learning systems in both the field of 'complexity theory' (c.f. the writings of Capra (2012) or Davis and Sumara (2006)) and in the literature on 'professional learning communities' (Clarke & Erickson, 2008) that we have drawn upon in some of our recent projects working with teacher inquiry groups.

Allan: Yes, I agree. And I was always fascinated with the notion of learning communities as dynamic entities. At University of Toronto I had the opportunity to work on a teacher education program based entirely in a school, where most of the coursework was done through actual

teaching. Hal Gruneau came from University of Manitoba for a study leave at OISE with Michael Connelly, but also worked with me at the Faculty of Education on this 'Runnymede Program' where we began to understand some of the social dynamics that play out when a group of teacher education students is immersed in practice together in their program activities (MacKinnon & Gruneau, 1994). At Simon Fraser University, I extended these ideas through developing a 'Summerfest Program' in which I combined a summer class in science teaching methods with a summer school for gifted and talented elementary school children, again with the idea that we would embed learning to teach in the actual teaching of children, and furthering my ideas and understandings of learning in practice, this time using ideas from ancient Chinese philosophy in an attempt to develop some of my understandings about how Schön's 'demonstration' and 'imitation' can play out in practice settings where several practitioners are working together (MacKinnon, 1996). Tony, you raised the issue earlier about the legacies of Schön's work?

Tony: Yes, it is a good question. Firstly, I want to say that of all the theoreticians that I have read or encountered, I think that Schön has had the most significant and long-lasting effect on the way in which I engage with the world. I still vividly recall the first time that I caught myself being reflective in terms of Schön's notion of reflective practice. It caught me completely by surprise and it was at that point that his work became 'real' to me. It is really about 'being in the moment.' That Schön has had such an impact on me might also be an artifact of his work being central to my doctoral research—it is not often that you have the luxury of spending three years reading and writing about one author! Nonetheless, as Allan alluded to earlier, over the years I have been saddened by how poorly his work has been understood and taken up in many quarters. I think there was a time when I wanted to stand up at virtually every talk in which the presenter invoked Schön's work and ask for their definition of reflection just to see if they had deeply read his work and struggled with making sense of his ideas in their own practice! However, I want to return to the notion of Schön's criticism of the UBC teacher education program, "You have it backwards" because it is such an easy trap to fall into within the academy. And we seem to do it all the time. I think that Schön's ideas could be almost seen as 'anti-academy' by the way in which he conceived of and argued for how the curriculum in a professional school, such as pharmacy, education, architecture, commerce, law, nursing, etc., might be organized. Do you think we still have it backwards? Are our programs any different as a result of what we have learned over the years?

Gaalen: To respond to your last question, I don't think that the fundamental structure of the Teacher Education Program at UBC has changed at all. It is still coursework driven, with the coursework preceding the practice and the expectation that the prospective teachers can both absorb and apply the lessons learned in a campus setting that is totally removed in most every way from the practice settings that they will experience during the practicum components of their program. We have done some fairly serious tinkering with the structure at UBC over the past ten years with two of the cohorts that comprise the elementary teacher education program—the CITE program and the Problem-Based Learning (PBL) program (Faculty of Education, 2012). But for the most part, I strongly suspect that Schön would still claim that we have it backwards. And let me add, that I don't think that he was 'anti-academy' per se—that was one of the criticisms that was leveled against him initially in his position on 'technical rational' approaches to educating professionals. I think that Schön would frame the issues in terms of how the academy can draw upon relevant and robust research findings to design more interactive and engaging teacher preparation programs anchored in practice and to inform and influence the inquiries that our students must undertake as a part of these programs. However, to do this we require the active collaboration of professionals in the field, as we rightly attempted to do in the CITE and PBL programs. And those programs were successful too because the academy allowed for a degree of autonomy and flexibility on the part of the teacher educators involved; it wasn't a 'one size fits all' mentality. But, this places even more demands upon an already overworked faculty, and so this is one of the dilemmas that needs to be addressed in any redesign of a Teacher Education Program that takes seriously a Schönian perspective on educating professionals. Tony, what do you think about the proposed changes we just heard about coming to the new UBC program?

Tony: The greatest advance, and what turned out to be the greatest challenge with the new UBC program, was arguing for the inclusion of a program-wide *Inquiry Seminar* that would be run across all three terms of the program. The Inquiry Seminar is to be the place where the students actively engage in their own investigations about teaching and learning. It is a space that was their space. However, there was continual pressure from the Program Review Committee to insert various agendas into that space. This was especially the case when a component of the program that some individual or group within the Faculty argued for but it didn't find a space in the final timetable; the automatic response was, "Well, let's make it one of the inquiry topics that the students can do in the *Inquiry Seminar*!" This is the antithesis of what many of us hoped and wanted for the *Inquiry Seminar*. At this point in time, we have been able to preserve the *Inquiry Seminar* space as a student inquiry space. But it continually is under attack because others do not see it as having a 'curriculum' per se despite the extensive literature that has been produced that places inquiry at the centre of any teacher education curriculum.

Allan: At SFU my approach has mellowed over the years. I realize that it is not always practical, feasible, or even ethical to lay on schools the extra task of serving as 'studios' or 'sites' for teacher education. Neither the university nor the public school systems are currently built for placing teacher education in the context of practice in the schools. And I'm not saying they should be. All of the efforts I have undertaken over the years to embed the education of teachers in practice settings have involved extra time and effort, and obvious increased uncertainty and risk. Not only is it extra work, to be honest—even to this day—this kind of work remains on the fringe of the institution. Last fall I led a group of students in our teacher education program through a unit on forensic science in an elementary school with grade five, six and seven students. It was only two weeks long, but I believe it was very powerful in shaping the practice of the student teachers in this early stage of their teacher education program. I'm still doing research in documenting these kinds of experiences and, in this case, disseminating

the work with some of the students at a faculty conference we held recently under the theme of *Learning Together*. But to be honest, there is little interest in this kind of work; rightly or wrongly, it seems that the visible criteria for career advancement in the academy hardly align with a view of knowledge consisting in how we happen to guide our students in dealing with the complex and uncertain world of practice. For all of the wonderful payoffs for the teacher education students, school pupils and teachers they've worked with, this kind of work has gone unnoticed, for the most part, in our faculty. I'm not complaining, and I do admit that I've kept a fairly low profile doing what I do, so this is simply a statement of probable fact.

4. A Final Comment

Constructing this conversation has been a conversation in its own right. As authors, we have contributed our own individual understandings and interpretations of Schön's 'epistemology of practice,' and we have discussed some of the ways in which these interpretations have influenced our thought and practice as teacher educators and teacher education researchers. The conversation that emerged has a particular direction—one that seems to oppose any notion of teacher education curriculum being solely comprised of theory derived from the humanities and social sciences, together with the disciplinary knowledge that aligns with the public school subjects and their curricula. Common among us—the three participants in this conversation—is a commitment to embed at least a portion of the curriculum of teacher education in the practice setting, and to support in systemic ways the participating public schools and their teachers and staff that join faculties of education in the task of educating teachers. We think of teacher education in terms of complex and dynamic learning communities nested in socio-cultural and political processes that sometimes defy articulation in any kind of linear, sequenced, or even patterned form. This perspective demands that teacher education programs be arranged in a such a way that ease of ideas, interaction with others, and integration of the components can be readily accomplished and facilitated. Furthermore, such arrangements should allow for improvisation and serendipity. For example, a cohort model that is allowed a genuine degree of flexibility and autonomy is one such model that would fulfill these purposes. As we think about current trends in post-secondary education in general and in faculties of education in particular, we can see once again that the prevailing practices and conceptions of education tend to lean toward a notion of knowledge derived from research that can be learned at the university and later applied to the practice of teaching in schools, what Schön has referred to as 'technical rationality.' Given our own experiences in experimenting with a number of different models of pre-service teacher education, where we have participated in and designed programs that endeavour to address the inherent problems that Schön has identified with many models of professional education, we are very familiar with the challenges and obstacles that face contemporary teacher educators. In response, Fenstermacher's (1992) articulation of the inherent tension between 'a system of schooling' versus 'an educative agenda' provides a strategic way to anticipate, acknowledge, and even navigate such challenges. There will always be compromises and concessions that need to be made within the context of any teacher education program; however, remaining true to the educative agenda, and placing that agenda at the forefront of our work as administrators, instructors, and students, is of paramount importance.

We think that there are several systemic problems that will need to be addressed in designing any teacher education program that takes seriously Schön's notions of reflective practice. One of these problems, as we have commented upon above, is the lack of program-wide commitment to what Schön meant by an 'epistemology of practice.' A second serious problem is the disincentives built into the 'reward structure' for *both* the communities of practice at the university level and those at the school level. A third problem is the continual fragmentation of teacher education programs that is a direct result of attempting to please everybody (i.e., the various interest groups that one finds in a Faculty of Education) and ultimately satisfying nobody. This lack of program coherence leaves the conceptualization of the overall learning experience entirely up to the students.

As we have indicated earlier in this article and elsewhere (Grimmet & MacKinnon, 1992; MacKinnon, 1993; Neilsen, Clarke, Triggs, and Collins, 2011, Clarke, 2007; Erickson, Darling, & Clarke, 2006), we think the task of designing effective teacher education programs necessarily entails the active engagement of both university and school-based educators in conversation with the students who are undertaking (or have recently undertaken) the program in question. This is necessary to provide access to and expertise in understanding and interpreting the crucial practice settings that are essential to develop the types of dispositions towards inquiry as well as the resultant 'appreciative systems' that are fundamental to Schön's epistemology of practice. However, we fear the community of school-based educators is neither well prepared nor rewarded to take on this important role, and call upon the profession for assistance and support in this regard (Clarke, 2007; Clarke and Reicken, 2001). Hence, there are many difficulties and disincentives for any teacher education program that seeks significant participation from school-based educators, beyond the usual sponsorship of individual student teachers.

Perhaps even more fundamental is our failure as an academic community to embrace a set of ideas about learning in practice, or rather, learning *as* practice, which Schön put before us on a silver platter, so to speak. For example, one might compare the communicative style of Schön with Schwab in terms of the language used and the ease with which ideas 'roll off the tongue'; 'problem setting and reframing' verses 'polyfocal conspectus,' as a case in point. Despite a very clearly articulated analysis of learning-in-practice-through-reflection that would point us in the direction of developing more courses as 'studio work' in schools of the professions, we seem to be increasingly populating our programs with theoretical content derived from the social sciences and humanities. It seems more likely nowadays, for example, to find a nursing program offered on-line than one actually located in a hospital ward, as used to be the case with the two-year Registered Nursing (RN) programs, which have now essentially been replaced with four-year BSc programs in nursing that have little if any coursework situated

in hospitals. Although we still have practicum in teacher education programs alongside the 'foundational disciplines' of teacher education (history, philosophy, sociology, psychology of education) and the subject areas of the public school curriculum, we have virtually nothing to bridge them. This task of designing and constructing these bridging program structures between the 'swampy lowlands of practice' and the 'high hard ground' of the academy remains as one of the most significant challenges that Schön left for those of us who seek to develop more coherent and relevant programs of professional preparation.

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