Making Interdisciplinary Collaboration Work: Key Ideas, a Case Study and Lessons Learned

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This article discusses the 'lessons learned' from an attempt to establish an interdisciplinary education research group. The growth, development and dissolution of the group are treated as an instrumental case study. Current literature on interdisciplinary collaboration is synthesized in order to provide a frame for analysis. Data was collected over several years and included three rounds of written participant reflections and documentation of group activities and meetings. Five major themes arose from the research, covering issues such as disciplinary diversity, common ground, interpersonal relationships, career pressures, and the need for concrete problems and tangible progress. Based on these themes, a number of 'lessons learned' are discussed which will likely be of great interest to those considering similar interdisciplinary initiatives.

Cet article discute des «leçons apprises» d'une tentative visant l'établissement d'un groupe de recherche sur l'enseignement interdisciplinaire. La croissance, le développement et la dissolution du groupe sont présentés comme une étude de cas déterminante. Les ouvrages actuels portant sur la collaboration interdisciplinaire sont synthétisés de sorte à produire un cadre pour l'analyse. La collecte des données s'est étendue sur plusieurs années et a impliqué trois cycles de réflexions écrites par les participants et de documentation des activités de groupe et des réunions. Cinq grands thèmes ont découlé de la recherche, portant sur des questions comme la diversité disciplinaire, le terrain d'entente, les relations interpersonnelles, les pressions professionnelles, et le besoin de problèmes concrets et de progrès tangibles. À partir de ces thèmes, on discute de plusieurs «leçons apprises» qui intéresseront sans doute ceux qui envisagent des initiatives interdisciplinaires similaires.

Interdisciplinarity is trendy in Canadian higher education institutions. Many universities have placed greater emphasis in recent years on developing collaborative, interdisciplinary research among faculty members [see, for example, York University (2010) and the University of Ottawa's 2010 Strategic Plan (2009)]. Many of these developments have been initiated within the last decade; so it is perhaps not surprising that we lack a deep understanding of what it means for collaborative research to be truly interdisciplinary and the factors that either support or inhibit it (Østreng, 2010; Repko, 2011).

To contribute to a better understanding of interdisciplinarity and how best to nurture it, this article examines the experiences of an interdisciplinary research group within the Faculty of

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Education at a large Canadian university. This group has mostly failed to accomplish its goals of mutual learning and research collaboration. However, its experiences, viewed through the lens of existing literature on interdisciplinarity, offer valuable and hard-earned lessons for those pursuing similar interdisciplinary initiatives.

Context

In 2007, the authors of this paper (with the exception of Clarkin) accepted an invitation from the dean of their faculty to participate a collaborative research group. Funding was initially provided by a Canadian Foundation for Innovation grant. It was as bilingual (French and English) group and members' expertise ranged widely. Their research areas encompassed distance education, electronic portfolios, interdisciplinary theory, curriculum studies, educational assessment and evaluation, math and science education, history education, health education, interprofessional teamwork, and social-cultural learning theories.

The group's primary aim was to bring its diverse disciplinary expertise to bear upon two related subject areas: Emerging technologies and interdisciplinary education. This focus gave rise to the group's name: NETIE, the *Network for Emerging Technologies and Interdisciplinary Education*. Besides its innovative educational research objectives, which combined many of the foci listed above, the group had a career-related objective. Most of its members were new, untenured professors. Joining the group was seen by all as a way to facilitate access to leading-edge research projects, applications for funding and publications.[1]

NETIE members met at least once a month (total of 18 times) over the next year and a half. Meetings took place in conference rooms in the Faculty of Education and were typically initiated by the senior professor who was appointed to lead the group. The meetings were not run in a hierarchical manner; all participants contributed to the discussion and agenda. The group kept meeting minutes and collaborated on a number of grant proposals and other research projects, such as the development and evaluation of an interactive educational website offering interdisciplinary insights and lesson plans related to health education. Sadly, all but one of these projects failed to bear fruit. The one concrete research goal that has come to fruition is the focus of this paper; NETIE's examination of its own development as an interdisciplinary research collective.

Method

Instrumental case study was chosen as an appropriate design for studying NETIE's evolution (Stake, 1995). This is because the aim was to make use of multiple perspectives to construct a deep and holistic understanding of a complex (yet bounded) social phenomenon, and to thereby provide insight into a wider issue, in this case interdisciplinary collaboration (Denzin & Lincoln, 2003; Yin, 2009).

NETIE had six core members. All six consented to participate and contribute as authors to this article. Although several other faculty members attended early meetings, they left the group before contributing sufficiently to the data generating activities described below; they are therefore not included as participants.

Data on the authors'/participants' experiences were collected in multiple ways. The primary sources were a series of semi-structured, open-ended written reflexive responses, prompted by questions such as, "What can NETIE contribute to your research?" and "What problems or

challenges do you think NETIE faces?" These reflections were collected at three points in time: At the group's formation, at the midpoint of active collaboration, and one year following the group's dissolution. The first two rounds of participant responses were made available for all to read and discuss. The purpose of the third and final round was for participants to review, critique and elaborate on preliminary themes identified during the thematic analysis of the first two rounds.

Other data sources included NETIE meeting minutes and joint grant proposals. These documents were studied for a few reasons. First, they provided insight into plans, timelines and progress made by the group during the time it was active. Second, they were reviewed for signs of emerging collaborations. Third, the documents served to triangulate data collected from the participants' reflexive responses.

All data were analyzed using categorical aggregation and direct interpretation (Stake, 1995). The authors also searched for correspondence in the data and established patterns related to two focal questions: (1) Was there evidence of genuinely interdisciplinary collaboration? and (2) What factors supported or inhibited interdisciplinary collaboration? To reduce potential bias, the analysis was carried out by a researcher (Clarkin) who was not a NETIE member. Analysis of the data was framed by existing literature on interdisciplinary learning, research and collaboration. Preliminary findings were presented to the participants as a form of member checking. They were given the opportunity to discuss and review their individual contributions, as well as all study findings.

Conceptual Framework

Theoretical and empirical literature on interdisciplinary learning, research and collaboration has expanded greatly in recent years. Not surprisingly, this literature comes from a wide range of sources, including work associated with the *Association for Integrative Studies* (Repko, 2008), *European Transdisciplinarity* (Østreng, 2010), *Team Science* writings (Stokals et al., 2008), and the rapidly growing field of interprofessional education (*Journal of Interprofessional Care*), as well as other influential interdisciplinary thinkers such as Klein (2005), Latucca (2002), and Petrie (1976). For the current study, a selection of this literature was synthesized in order to provide a framework for analysis of data related to the two focal questions.

Evidence of genuinely interdisciplinary collaboration

Reality, according to most interdisciplinary scholars, is multifaceted, interrelated and complex; it cannot be reduced to a single dimension or disciplinary perspective (Klein 2004). Each discipline has developed theories and methods adapted to the specific portion of reality it has chosen for study (Newell, 2001a). This narrowness of focus facilitates consolidation, error detection and the development of epistemic communities; at the same time, however, it threatens exploration, invention and breadth (Lattuca, 2002).

Interdisciplinary thought is thus a necessary consequence of, and complement to, disciplinary specialization. In studying complex issues and problems, interdisciplinary research attempts not only to *juxtapose* differing disciplinary perspectives (mere multidisciplinarity) but also to *integrate* them into larger, more encompassing perspectives (Klein & Newell, 1997).

What makes interdisciplinary work so challenging is that disciplines' theories and methods often conflict or are incommensurable (Schön & Rein, 1994). As Petrie (1976) writes, "[q]uite literally, two opposing disciplinarians can look at the same thing and not see the same thing" (p. 11). Further, one cannot, and should not, attempt to avoid or eliminate these conflicts: "difference, tension, and conflict are not barriers that must be eliminated. They are part of the character of interdisciplinary knowledge negotiation" (Klein, 2005, p. 45).

Interdisciplinary knowledge thus involves the integration of often starkly contrasting disciplinary insights (concerning a specific problem or issue) into a coherent whole, through the identification of an overarching concept, theme or metaphor (Newell, 2001b). For example, the concept of 'patient-centred care' has been used to integrate the diverse biological, psychological, social and ecological factors relevant to human healthcare.

Less well covered in the literature is what this sort of interdisciplinary integration actually 'looks like' within collaborative groups (Franks et al., 2007; Iedema et al., 2005). Many authors, however, have argued that it occurs when differing disciplinary viewpoints come together and interact in such a way that 'the sum is greater than the parts' (Drinka & Clarke, 2000; Newell, 2001a; Suroweicki, 2004).

In more concrete terms, this means that team members elicit, build on and challenge one another's ideas over time. As they do so, they begin to produce new collective knowledge that exceeds the sum of what they knew previously as individuals, knowledge that could not have been predicted in advance of their collaboration. And this collective knowledge is embodied in the academic papers, action plans, group practices, processes, inventions and so on that the team produces (McMurtry, 2010; 2011).

Factors that support or inhibit interdisciplinary collaboration

The most recent and sophisticated writings on interdisciplinarity typically divide factors that either sustain or constrain collaboration into multiple levels—from smaller scale *personal* and *interpersonal* factors, to larger scale *institutional*, *political* and *epistemological* issues (Stokals et al., 2008).

Personal factors that influence collaboration include the breadth of group members' interests, competence in one's own discipline combined with a recognition of its limits, a feeling of power, accomplishment and commitment; intellectual openness and flexibility, and trust and respect for teammates with differing disciplinary perspectives. Interpersonal or group level factors related to the success of interdisciplinary teams include effective communication; a balance between diversity (or specialization) and common ground; and the presence of structures such as rules for resolving conflict (Drinka & Clark, 2000; Kessel & Rosenfield, 2008; Petrie, 1976; Schön & Rein, 1994; Surowiecki, 2004).

Several additional concerns arise at the intuitional level. In universities, *disciplinarity* refers not only to the organization of knowledge, but also (and perhaps even more strongly) to the "*political institutions* that demarcate areas of academic territory, allocate privilege and responsibilities of expertise, and structure claims on resources" (Lenoir, 1993, p. 82, italics in original). This situation has two important implications.

First, it means that criteria for promotion and tenure typically favour narrow disciplinarity and are "manifestly inequitable" when applied to interdisciplinary scholarship (Pfirman et al., 2007, p. 6). Second, interdisciplinary research tends to threaten disciplinary hierarchies and other established power structures (Henry, 2005). As a consequence, interdisciplinary activities

are often avoided, disrespected or repressed within the academy (Kent, 1994; Sumner, 2003).

To mitigate these barriers, authors emphasize the need for institutional recognition and support for interdisciplinary activities (Petrie, 1976). This need is especially urgent where faculty are employed within a single, traditional faculty or department (Klein & Newell, 1997).

Finally, interdisciplinary collaboration is affected by epistemological issues. As we saw above, disciplinary perspectives are often incommensurable or in conflict. Genuine interdisciplinary research attempts not to minimize or ignore these differences, but rather to recognize, harness the power of, and negotiate among them, with a view toward integrating them into a larger, more encompassing perspective.

A number of enabling factors for epistemic integration have been identified. The first is some sort of conceptual framework (Kessel & Rosenfield, 2008). Another is having practical, 'how-to' models for integration. These models typically include steps like defining a question, determining relevant disciplines, negotiating roles, identifying conflicts, creating common ground, and so on. Several researchers linked to the Association for Integrative Studies have proposed and tested such 'how-to' models (see, for example, Newell, 2001a; Szostak, 2002)

Perhaps the most important epistemic factor is having a specific, concrete focus (Franks et al., 2007; Petrie, 1976). As Schön & Rein (1994) write, it is difficult to imagine how, from a purely intellectual or academic point of view, disciplinary conflicts could ever be resolved; but in the "fruitful mire" of situated practice, people do find ways to get things done (p. 176). Researchers must immerse themselves in concrete problems and find ways to both articulate and integrate their differing, and frequently discomforting, disciplinary perspectives. As Petrie (1976) warns, interdisciplinarians must avoid the temptation to retreat to pleasant and uncontroversial topics:

> Failing to realize the significant differences in cognitive maps and yet faced with the necessity for communicating with each other on some level or other, the participants retreat to the level of common sense which is shared by all. But ipso facto, such a level cannot make use of the more powerful insights of the disciplines. (p. 12)

Findings

As described above, this study sought to examine whether genuine interdisciplinary collaboration had taken place within NETIE as well as the factors that either supported or inhibited such collaboration. Data took the form of written participants' reflections and documentation of NETIE activities and meetings. The written reflections were collected, as emailed attachments, in three rounds: At the group's formation, at the midpoint of active collaboration, and one year following the group's dissolution.

These data were analyzed through the lens of the existing literature on interdisciplinarity described above. For example, participants' written reflections were examined for evidence of respect for others' differing disciplinary perspectives. And both the reflections and various NETIE documents were reviewed for evidence of common research activities and for members synergistically building on one another's ideas. Statements or other evidence that exceeded or disconfirmed categories provided by the existing literature were also sought and considered.

Five major themes arose from the analysis and each is illustrated with representative quotes. Because some of the comments and quotes critique institutional policies or deal with matters of tenure and promotion, the authors choose not to personally identify the individuals making the

quotes. In order to show that the quotes were drawn from across the various participants, however, each participant was randomly assigned a number from 1 to 6. And because the timing of the quotes is significant, the round in which they were written, at the groups formation (1), midpoint (2), or following dissolution (3), is also provided.

The implications of the findings for educational researchers considering interdisciplinary activities are examined in the Discussion and Lessons Learned section below.

Balancing Disciplinary Diversity with Common Group Identity, Mission and Other Structures

The literature on the factors that support interdisciplinary collaboration emphasizes the importance of diverse disciplinary competence, sufficient common ground, and shared group rules and routines. NETIE participants perceived a great deal of diversity in disciplinary expertise and experience within their group. For instance, one wrote,

> Certainly having statisticians, programmers and bilingual educators on the team will lead to times and opportunities where our strengths will complement each other and it will be beneficial to collaborate on various research grants and projects. (participant 6, round 1)

However, all participants also noted the lack of sufficient common ground in terms of research interests, identity or mission:

> I think that our group has a lot to offer in terms of prospective projects together. But we need to find a way to effectively harness our expertise, and I guess, commit to working with one another. (participant 1, round 2)

> So far, our ideas and plans for NETIE are very vague and diverse. Although our mission statement and this [reflective response] may help, we are still a long way from having a unified vision and plan for implementing it. (participant 4, round 1)

Many participants would have liked more common group structures or routines, but differed widely on the sorts of structures they sought. Suggestions included regular meetings, common readings, a methodical approach to group tasks, and a model for understanding how collaboration should take place (everyone contributes to every project vs. people form smaller sub-groups for specific projects). One participant summed up the various concerns related to this theme:

> [T]he largest challenge is for us to find our space of comfort where we can grow as a group ... However, the diversity of our domains of expertise, epistemologies, discourses, life experiences, personalities, careers, and interests make me feel that at times we speak different languages ... (participant 2, round 2)

Attitudes and Relationships, Including Respect and Mutual Learning

Literature on also stresses the need for trust, respect and openness to being influenced by differing perspectives. Indeed, genuine interdisciplinary collaboration requires this sort of mutual learning and negotiation. NETIE participants' spoken and written statements, especially

during the initial stages collaboration, showed flexibility and openness to interdisciplinary collaboration, as did their previous research and experiences:

> I am hoping to get back into collaboration around the use of emerging technologies in education … and network with people involved in interdisciplinary research and education … I am impressed with the credentials of those involved in NETIE. (participant 5, round 1)

> Because my area of research is not educational technology, [NETIE] can provide much needed expertise … a venue to discuss my research and obtain feedback … good advertising in order to attract contracts and collaborative opportunities. (participant 4, round 1)

Two participants presented their research interests and activities to others in the group during NETIE meetings. And one participant commented on how another's deep experience with educational technology had influenced his own pedagogy and research. There was, however, little other evidence of disciplinary interaction or influence. Participants did not build substantially on one another's contributions. "Re interaction or mutual influence in ideas, I think there was very little," said one (participant 5, round 3). This finding is supported by the fact that NETIE no longer meets and has no active research projects or successful grant applications or publications (with the exception of the current paper).

All six of the study participants attributed this lack of intellectual interaction to institutional factors. These included a lack of faculty support for proposed NETIE initiatives and the pressure on young professors to publish in their disciplinary specialty (these institutional and career-related concerns are dealt with more fully below).

Two noted that, in spite of participants' apparent openness, the challenges and discomfort posed by different interests, theory and methodologies presented a significant barrier to collaboration: "the diversity, and what could have become an asset … also made it more difficult" (participant 2, round 3); "people don't always really want to bring in other theory perspectives, because it complicates things for them (work-wise and thinking-wise)" (participant 5, round 3).

Tangible Progress, Concrete Focus and 'Organic' vs. 'Mandated' Collaboration

To maintain successful interdisciplinary collaborations, it is important for participants to have a feeling of accomplishment and engage in concrete problems that prompt them to move beyond their disciplinary silos. Virtually all NETIE participants expressed frustration at the lack of tangible progress on group tasks. As one wrote,

> I think the biggest challenge/problem facing NETIE is getting started with concrete activities. We have been spending lots of time 'getting to know each other,' trying to find the perfect project in which all or most all of the NETIE members have an interest, and coming up with a unanimous vision…My fear is that we are getting bogged down and not accomplishing anything. After a year, we don't have a website. We haven't begun a regularly scheduled, formal series of research presentations … And, to my knowledge, we haven't yet taken advantage of each other's expertise. (participant 4, round 2)

While some echoed this call for a concrete research project to drive collaboration, others felt it was more important to first learn more about one another and come to an accord on ideas and research goals:

[C]'était peut-être une erreur, d'aller tout de suite au concret, sans être d'accord dans les idées et les objets de recherche communs. La société utilitariste nous pousse aux choses concrètes, mais il vaut mieux réfléchir avant. [Focusing right away on the concrete may have been a mistake, without first coming to consensus on common research ideas and objectives. Utilitarian society pushes us towards concreteness, but it is better to reflect first.] (participant 3, round 3)

Some participants came to believe that interdisciplinary collaborations cannot be 'mandated,' but rather must emerge organically from the shared interests of two or more researchers. Others pointed out that while everyone was invited by the dean to join the group, no one was compelled to do so; indeed, everyone originally joined based on perceived shared interests. One participant reflected that mandating interdisciplinary collaboration may not always be a bad idea, since people will otherwise tend to avoid collaborating with those who have significantly different perspectives.

Career, Institutional Demands and Commitment

Literature on the politics of interdisciplinarity makes clear the challenges faced by faculty in institutions that favour narrow specialization. NETIE participants, 5 out of 6 of whom were new, untenured professors, were reluctant to commit to projects, due to concerns about whether their efforts would produce tangible academic results that would advance their career.

One problem of any committee is getting members to participate. This is especially true when members are under pressure to publish and obtain grants in order to get tenured … in order to have members make NETIE a priority it will need to contribute to improve their curriculum vitae with regard to obtaining grants and publishing. (participant 6, round 2)

A related concern had to do with specialization. Many participants were unsure whether NETIE's interdisciplinary projects would be recognized as relating to their official concentration.

[T]hat was a question I had; how could I use this for my CV?…I had to always make a point of having my area integrated into the plans and projects. It was something I had to be vocal about. (participant 2, round 3)

I think this comes down to the institutional demands for us to publish within our individual fields of study (participant 1, round 3)

Their concerns were linked with two other perceptions: One, that there was insufficient collective commitment or investment in NETIE; and two, that individuals' contributions (efforts or disciplinary perspectives) were not being sufficiently recognized.

Because we all have different agendas, and priorities, I haven't felt a sense of true collective investment in the project and I think that might be one of the biggest challenges in the future. (participant 2, round 1)

I would argue that my 'disciplinary' perspective … was something that people were generally friendly and open about, but there was not a great deal of 'follow through' (participant 5, round 3)

Expertise and Training in Interdisciplinarity

One of the most important 'epistemic' factors that support interdisciplinary integration and collaboration is training or preparation in the use of 'how-to' models and conceptual frameworks. A final theme related to this strand in the interdisciplinary literature only emerged once NETIE had dissolved and participants had a chance to reflect on previous comments. Several observed that it might have been valuable to consider previous, "training in terms of working on interdisciplinary teams within a research setting" (participant 1, round 3). As one concluded, "interdisciplinarity is like a discipline in itself. It does not happen simply because people with differing expertise(s) get together. Integrating perspectives is difficult!" (participant 5, round 3)

Discussion and Lessons Learned

Failed initiatives are frequently ignored or forgotten. This is regrettable, since one can often learn as much from a failure as a success. The current instrumental case study illustrates this point. Although NETIE failed to achieve most of its aims, the themes that emerged from the group's experiences, framed by current literature on interdisciplinarity, offer valuable and hard-earned lessons for those contemplating similar initiatives.

This study aimed to answer two specific questions: (1) Was there evidence of genuinely interdisciplinary collaboration? and (2) What factors supported or inhibited interdisciplinary collaboration? The answer to the first question is that there was very little interdisciplinary collaboration. Diversity of discipline and research foci did exist, as did mutual respect. But there were few instances in which participants learned deeply about others' perspectives, or sought to recognize, negotiate and bridge their disciplinary differences; things that are considered crucial to successful collaboration in the interdisciplinary literature. NETIE essentially remained the 'sum of its parts.'

Many factors that typically favour interdisciplinary collaboration were present within the group and its context. At the personal level, for example, participants expressed a breadth of interest, openness and flexibility, and a respect for the disciplinary perspectives of others. At the interpersonal level, collaboration was facilitated through regular meetings and several participant research presentations. Institutionally, the dean and faculty supported NETIE's initial organization and funding. Finally, from an epistemological perspective, concrete group foci (though small scale) were provided through shared grant proposals and the three rounds of written reflections described in this paper.

However, there were perhaps even more factors present that undermined collaboration. At the personal level, many individuals felt frustrated by the lack of tangible progress and several feared that others might not be as committed to the group or that their contributions were not sufficiently recognized within group projects. Interpersonally, many participants felt there was not enough common ground in terms of members' research interests, group identity and aims, and structures such as common readings or models for collaboration. Recall that effective interdisciplinarity balances diversity and commonality.

Probably the most important inhibiting factor at the institutional level was career related. The new professors that made up the bulk of the group felt pressure to publish in their disciplinary specialty and doubted whether interdisciplinary activities would be recognized for

tenure. The tendency of higher education institutions to reward narrow disciplinarity rather than interdisciplinary synthesis is well documented (Henry, 2005; Lenoir, 1993; Pfirman et al., 2008; Sumner, 2003).

Several problems were noted at the epistemological level. In the first place, group members did not receive any interdisciplinary training, tools or 'how-to' models. A final major stumbling block was the lack of any large scale, complex yet concrete problem into which group members could really 'sink their teeth.' Immersion in such problems appears to be the most effective way to motivate researchers to find ways to articulate, negotiate and integrate their differing—and frequently discomforting—disciplinary perspectives (Franks et al., 2007; Petrie, 1976; Schön & Rein, 1994).

Many lessons can be learned from this case study. First, interdisciplinary integration is hard work. This is because significant differences in disciplinary culture and language often need to be overcome, and successful collaboration typically requires collaborators to deal with discomforting perspectives and engage in deep mutual learning.

Second, disciplinary diversity and good intentions are necessary but insufficient conditions for successful interdisciplinarity. Another crucial condition is common ground. This may exist in the form of shared research interests, or be cultivated through regular meetings, structured tasks, reading groups, or training in interdisciplinary collaboration. One clear barrier to the pursuit of these sorts of activities is the additional effort required. It is not clear whether the untenured professors who participated in this study would have been willing to devote the necessary time, given the career-related demands described above.

Third, interdisciplinary groups benefit from concrete, complex problems or projects. Mutual awareness and group reflection are valuable processes. But dealing with a real project or problem seems to be necessary in order to elicit profoundly different disciplinary perspectives, as well as to prompt members to recognize and hopefully balance and integrate these perspectives.

Related to having a concrete problem or project is the fourth lesson learned: The crucial need for tangible progress. Groups need to achieve tangible goals, even one as simple as developing a group website, in order for members to feel a sense of accomplishment. Furthermore, these group achievements should incorporate contributions from all members. Otherwise, they may feel frustrated or unappreciated, which can in turn lead to less commitment.

Fifth, interdisciplinary initiatives cannot afford to ignore institutional issues, especially the degree to which interdisciplinary activities are recognized and rewarded. While structures to support interdisciplinarity are beginning to be developed in universities and granting agencies, most university promotion systems are still oriented towards narrow disciplinarity.

A final lesson learned from this research is paradoxical. Many participants concluded that it is difficult to mandate collaboration; more often it emerges organically from the shared interests of two or more researchers. Yet at the same time, several reflected that researchers tend to seek out collaborators who share their assumptions; significantly different or discomforting disciplinary perspectives are usually neither sought nor appreciated. There may therefore be some role for mandated collaboration, or 'arranged marriages' in interdisciplinarity. In any case, the current case study articulates this paradox, but cannot offer a solution.

Conclusion

Interdisciplinary collaboration is being increasingly promoted in many Canadian higher education institutions, as well as in workplaces like hospitals and community clinics (Nolte & Tremblay, 2005). Such collaborations demand significant effort and learning on the part of those who work in these settings. There remain, however, relatively few empirical studies on interdisciplinary collaboration, especially within social science settings like an education faculty. Even rarer are studies in which failure is both acknowledged and seen as an opportunity for learning. The rich and detailed synthesis of literature on interdisciplinary collaboration, as well as the findings provided by this case study, will therefore provide valuable guidance to those in education and elsewhere contemplating interdisciplinary research, collaboration and learning.

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Note

1   This aim of facilitating access to projects, grants and publications was articulated by every member in the first round of written reflective responses described below in the Method section. As one wrote,

> NETIE can provide an experienced team of researchers to support grant applications … It can also provide a venue to discuss my research and obtain feedback … [and] good advertising in order to attract contracts and collaborative opportunities (participant 4, round 1).

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