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Abstract

Use of project teams is increasing, however little is known about collaboration as it actually occurs over the life of projects. This article explores the nature of collaboration within Implementing New Knowledge Environments (INKE) after two years of funded research. The second year is characterized by forward research progress, positive relationships, transitions, and challenges related to human resources, team restructuring, and partner institutional policies. INKE is drawing upon structures and processes, including in-person meetings, multiple communication channels, and evolving governance documents to support the collaboration. The article concludes with recommendations for similar long term, large-scale project teams.

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Collaboration; Project management; E-books

The INKE Research Group comprises over 35 researchers (and their research assistants and postdoctoral fellows) at more than 20 universities in Canada, England, the United States, and Ireland, and across 20 partners in the public and private sectors. INKE is a large-scale, long-term, interdisciplinary project to study the future of books and reading, supported by the Social Sciences and Humanities Research Council of Canada as well as contributions from participating universities and partners, and bringing together activities associated with book history and textual scholarship; user experience studies; interface design; and prototyping of digital reading environments.

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Introduction

Researchers are turning to collaborative and often multi-disciplinary approaches to answer increasingly complex and sophisticated research questions, often working in ways that are contrary to the individual-oriented, single discipline-based patterns developed through graduate training and reinforced through universities' rewards, recognition, and tenure policies (Hara, Solomon, Kim, & Sonnenwald, 2003; Newell & Swan, 2000). Granting agencies are encouraging this trend by funding larger scale research initiatives that require team approaches at both national and international levels (Newell & Swan, 2000; Social Sciences and Humanities Research Council, 2005). To successfully reach their research objectives, these teams must develop methods to coordinate tasks, knowledge, and communication while minimizing associated challenges (Amabile, Patterson, Mueller, Odomirok, Marsh, & Kramer, 2001; Lawrence, 2006; Melin, 2000). In a variety of forms, these teams and the granting agencies are formally reflecting on those factors that build collaboration success and are articulating lessons for others to consider (for example, see Bracken & Oughton, 2006; Bryan, Negretti, Christensen, & Stokes, 2002; Kishchuk, 2005; Lawrence, 2006; National Endowment for the Humanities Office of Digital Humanities, 2010; Trnka, 2008). Many of these reviews occur at project completion, which may mean that some learning has been forgotten or minimized through the passage of time. Additional lessons may be possible if collaborations are examined as a project is underway. This article contributes to that discussion, with an exploration of the experience of a particular large-scale collaboration in its second year of funded work, and building upon earlier reflections (Siemens & INKE Research Group, 2009, 2010a, 2010b).

The article is structured in three parts. Firstly, benefits and challenges associated with academic research teams will be outlined. Next, the case study is described and findings from interviews with team members reported. The article concludes with recommendations for other large-scale long-term research teams.

Context

While academics have been traditionally trained as independent researchers, they are increasingly turning to collaboration for several reasons (Hara et al., 2003; Newell & Swan, 2000). First, collaboration has been found to increase research's quality, depth, and scope and often achieves what an individual cannot, particularly in relation to those questions that require a variety of perspectives to answer (Newell & Swan, 2000; Siemens & INKE Research Group, 2009). These gains occur in part because greater possibilities for significant contribution, creativity, and innovation exist when more perspectives are present (Northcraft & Neale, 1993; Shore & Cross, 2005). Second, many researchers welcome the opportunity to learn new skills and knowledge and work with others, which is in contrast to the often solitary nature of academic work (Melin, 2000; Siemens, Cunningham, Duff, & Warwick, 2011).

However, challenges exist at the team, individual, and institutional levels that can impact a project's success and the benefits gained through collaboration. The existence of various disciplines within a team can create conflicts and confusion as teams translate and negotiate specialized language and appropriate research methodologies. Further, collaborations need to establish processes that facilitate communication and coordination, and which clearly outline roles, contributions, power, and status to

ensure that research is conducted effectively and efficiently (Gold & Gold, 1985; Hara et al., 2003; Newell & Swan, 2000; Northcraft & Neale, 1993; Saxberg & Newell, 1983). At the individual level, these activities often require skills in negotiation, conflict resolution, coordination, and project solving, which are not generally part of graduate training (Kraut, Galegher, & Egido, 1987). Finally, coordination costs increase with the number of participating institutions (Cummings & Kiesler, 2007).

Ultimately, a research team must develop the processes and relationships that maximize the benefits and minimize the associated challenges of collaboration. A failure to do so may impact a team's ability to reach their research objectives, with potential outcomes being uncompleted research, disrupted personal relationships, and a loss of reputation and research money (Newell & Swan, 2000). As a result, research into the nature of collaboration and those factors which contribute to, as well as detract from, large-scale project success is necessary (Amabile et al., 2001; Kishchuk, 2005).

To this end, researchers, both within and outside large-scale research projects, have been exploring those important factors. Teams themselves are reflecting on their own experiences to better understand the dynamics that influence a collaboration's ability to accomplish its research objectives (Bracken & Oughton, 2006; Bryan et al., 2002; Lawrence, 2006). In other cases, researchers interview and survey others about their collaboration experiences (Cramton & Webber, 2005; Diercks-O'Brien & Sharratt, 2002; Hagstrom, 1964; Kishchuk, 2005). In most cases, these reflections occur at a project's completion, which may mean that some learning has been forgotten or minimized through the passage of time. What then can be learned by deliberately following a team through its collaboration? Implementing New Knowledge Environments (INKE) serves as a case study, which can contribute to this discussion and shed light on this question. This article will build on earlier reflections of INKE, with a perspective of the collaboration after two years of working together (Siemens & INKE Research Group, 2009, 2010a, 2010b).

Case study

The INKE research project is a seven-year multidisciplinary project with 35 active researchers plus postdoctoral fellows, graduate research assistants, and partner organizations across four countries, over 20 institutions, and a budget of approximately \$13 million of cash and in-kind funding. This project took over five years to discuss and plan, as well as write the grant application before it was successfully funded through Canada's Social Sciences and Humanities Research Council's Major Collaborative Research Initiatives program (MCRI). This granting program funds large-scale integrative and collaborative research projects within the Humanities and Social Sciences, supporting students' and postdoctoral fellows' development and training in collaborative and interdisciplinary research and promoting and encouraging active partnerships with stakeholders in the public and private sectors and the larger scholarly community (Social Sciences and Humanities Research Council, 2010).

INKE will "study different elements of reading and texts, both digital and printed" and contribute "to the development of new digital information/knowledge environments" (R. G. Siemens, Warwick, Cunningham, Dobson, Galey, Ruecker, Schreiber, & the INKE Research Group, 2009, p. 1: Social Sciences and Humanities Research Council, 2009, 2010).

As outlined in the grant application, the team envisions an integrated program of research with a supporting administrative structure as shown in Figure 1. This structure includes an executive committee operating as trustee of the project's research direction and budget, an advisory board providing outside expert perspectives and advice on the research, a partners committee representing stakeholding research partners, a sub-area research administrative structure comprising of a committee of the leaders from each of the four sub-areas who provide administrative oversight to their respective sub-areas, and finally the individual researchers. The four sub-research areas include Interface Design (ID), Textual Studies (TS), User Experience (UX), and Information Management (IM). The core administrative body is the Research Area Group committee. The full grant application can be found at R. G. Siemens et al., 2009. For reasons that will be discussed below, INKE has since reorganized into three areas, including Interface Design (ID), Textual Studies (TS), and Modelling/Prototyping (M/P).

Figure 1: INKE supporting administrative structure (as of 2009)



Methodology

Members of the administrative team, researchers, graduate research assistants, and others have been asked about their experiences collaborating within INKE on an annual basis in order to understand the nature of collaboration and ways that it may change over the life of a long-term grant. This round of interviews centred on the project's second year. Interviews will continue to be conducted as the project moves forward. The interview questions focus on understanding the nature of collaboration and advantages and challenges associated with the collaboration within INKE's context. These interviews allow the researcher to explore topics more fully and deeply with probing and follow-up questions, while participants are able to reflect on their own experiences and emphasize those issues that are important to them (Marshall & Rossman, 1999; McCracken, 1988; Newell & Swan, 2000; Rubin & Rubin, 1995).

Data analysis involves a grounded theory approach, which focuses on the themes that emerge from the data. This analysis is broken into several steps. First, the data is organized, read, and coded to determine categories, themes, and patterns. These are tested for emergent and alternative understandings, both within a single interview and

across all interviews. This is an iterative process, involving movement between the data, codes and concepts, and constantly comparing the data to itself and the developing themes (Glaser & Strauss, 1967; Marshall & Rossman, 1999).

Findings

A total of nine individuals were interviewed, with representation from the four groups within the project, including graduate research assistants (GRAs), postdoctoral fellows (PDs), researchers (Rs), and administrative leads (ALs). Six of these individuals had been interviewed at the end of Year One of the project (Siemens & INKE Research Group, 2010b).

BENEFITS

Overall, the interview respondents view INKE, and their participation in the INKE project, as very positive for several reasons. First, they reflected that they had gotten to know each other and the team as a whole better and that the research was now progressing after the foundational first year. In this spirit, one researcher (R1)¹ reflected that the second year was “every bit as good as the first and perhaps even better” (R1). This sentiment was echoed by an Administrative Lead (AL2), who observed that the team was now able to get to the research that they “signed up for” and was now “firing on all cylinders” (AL2). Another administrative lead (AL3) suggested that they had learned more about each other as individuals, as well as the team’s strengths and weakness. Finally, a third member of the administrative team (AL4) reflected that they had found that the “team can be supportive” of a member when that individual is dealing with outside challenges. The team has been able to translate these positive relationships into the research and is now producing papers, presentations, interface designs, and other forms of collaborative research outcomes.

Second, the GRAs commented that they have been able to deepen their collaboration and academic skills. For example, GRA1 stated that they have been able to get “more of a sense of collaboration,” as well as learn more about expectations related to collaboration and ways to interact with the other sub-research areas in the second year. They also realized that, unlike most graduate students, they had an opportunity to make an “intellectual contribution” (GRA1) to a large project, to meet “people from Canada and around the world,” and to gain insight into “how big SSHRC projects work” (GRA2). The postdocs echoed these thoughts and remarked that they had a chance to “build a scholarly network as a new scholar” (PD1) and bolster their academic curriculum vitae, something that many Humanities postdocs in traditional positions have more difficulty achieving.

Finally, INKE strengthened links with partners, stakeholders, and between members of the larger Digital Humanities community and beyond into the more “traditional” Humanities and Social Sciences disciplines (AL3). For example, the 2010 INKE outreach event was combined with another event at the Dutch National Archives in The Hague and allowed for new links to be made with the European e-book community. This has in turn created further research collaborations with new groups (AL3).

CHALLENGES

At the same time, INKE is in transition and responding to new and reoccurring challenges. First, human resource related issues with regards to several key positions

became critical in Year Two, particularly with the attraction and retention of postdoctoral fellows with technical skills, as well as a project manager. Given the digital-oriented nature of its research, INKE competes with the Sciences for postdocs. Due to a difference in funding levels, Science postdocs can earn \$15,000-40,000 more than those in the Humanities, which can make attraction of qualified individuals difficult (AL3). Further complicating the situation, when someone was hired, INKE found it difficult to keep them, as better-paid opportunities often beckoned. While this could be viewed as success, in that INKE is training people with desirable skills, the project has not been able to “reap the benefits” associated with this training (AL3). Differing cost-sharing arrangements between participating institutions also impacted INKE’s ability to hire postdocs. Given the funding cost models, which focus on full cost recovery for research activities in British universities, the equivalent amount of money allocated for a full-time postdoc in Canada translates to a part-time postdoc at the UK partner, which limited the amount of work that the British-based postdoc could undertake relative to the work plans (PD3). IM and UX were the most heavily affected sub-research areas in this regard and were not able to undertake their research as originally planned nor collaborate as fully with ID and TS.

The project manager position also proved problematic, particularly since INKE desired someone with both a Humanities background and project management skills. This combination is difficult to find because Humanities students are not often trained for project management, from either an “expertise or mindset” perspective (AL3). For example, Humanities students generally work towards a faculty post, with its accompanying freedoms to self-select research projects, work patterns, and accountabilities. As a result, they feel tension when hired into a research support staff position, with its perceived constraints on freedom to determine activities and work organization. Several project managers were hired but left after a short time due to these reasons.

Second, INKE is undergoing a series of transitions within the sub-research areas, administrative team, and with new GRAs, postdocs, and active researchers. In response to some of the above challenges, INKE has restructured from the original four sub-research areas into three, with a subsequent reallocation of funds, researchers, and partners from the two dissolved groups. Also, given the focus on the newly created sub-research area (M/P), INKE needed to bring in new researchers who had not been actively involved previously. As a result, the sub-research areas must develop ways to incorporate new members, either from dissolved sub-research areas or from outside INKE fully, into the collaborative relationships already in place. One administrative lead commented that they realized that they had to figure out “how to work together” with a researcher transferred to their sub-research area from the dissolved one (AL1). They further added that the development of these new relationships had to be done quickly to ensure that work could continue as planned.

Finally, and as anticipated, the first wave of GRAs and postdocs is leaving the project. This situation presents challenges, as noted by the GRAs and postdocs themselves, as well as the researchers and administrative leads. One researcher noted that they had been “lucky to have the same RA for over two years” and had gotten “very comfortable with [GRA]” and their ways of working, but will now have to learn to work with a new GRA (R1). As a result, the knowledge and skills gained and contributed by these GRAs

and postdocs must be transferred to the next group so that it is not lost. In one case, where there was little overlap and documentation between a Year One postdoc and the Year Two postdoc, the latter postdoc “had to reverse engineer” the work of the first in order to understand it, which was perhaps an inefficient use of time (PD₁).

Lastly, Year Two highlighted the tensions that can exist between the amount of work involved in INKE and other responsibilities held by team members. Over the year, the team responded to increased outside administrative responsibilities (AL₄), sabbaticals (AL₁), teaching schedules (all researchers and administrative leads), and other research projects, and still had to find ways to ensure that INKE research moved forward. As one administrative lead commented, there is “too much going on” (AL₄). In some cases, researchers found it difficult to remain engaged and ensure that the work moved forward.

Several challenges remain issues from the first year. In particular, given the project’s scale and interdependencies, communication within and between sub-research areas continues to be an issue. GRAs and postdocs who are hired into one sub-research area but need to interact with another one found this to be a problem, particularly since they did not know the researchers personally before joining INKE, and thus were more reluctant to contact team members directly. As one GRA highlighted, one challenge was “finding out what others do and then be[ing] able to call on them for help” (GRA₂). One postdoc echoed that they were always wondering if there was someone with whom they “should be talking to or working together?” (PD₁). The end result was a time-consuming process, as they worked to determine who it was that they needed to contact, and for what information.

Second, administrative functions remained factors to mitigate. The administrative leads needed to manage yearly planning cycles and corresponding fund transfers between institutions to ensure that sub-research area project plans could be approved in time for funds to flow to each institution. As one administrative lead (AL₂) commented, they are not trained nor have interest in these tasks. Further complicating institutional relationships was the fact that different cost-sharing and in-kind arrangements existed, resulting in fewer funds to pay GRAs and postdocs at some places, as indicated above.

STRATEGIES

INKE has devised some strategies to mitigate the above challenges. As the team responds to transition and change, the governance documents provide a mechanism for facilitating these in a thoughtful manner that preserve existing relationships and overall research focus while making allowances for new interactions, collaborations, and ideas. For example, the decision to restructure INKE occurred over the period of several months. Over fall and early winter in Year Two, the administrative leads spent time discussing human resources challenges that stemmed from the issues outlined above and the ability of administrative leads to balance outside commitments with INKE responsibilities. The need to resolve these became critical in early spring, as the sub-research areas needed confirmation of human resource availability and commitment, so that they could begin planning research tasks, responsibilities, timelines, and resource allocation. From this point, the administrative leads outlined a proposal for restructuring and created a draft document, which articulated the issues and principles that would guide decision-making.

From there, they outlined how a restructuring might work and its implications. The final result was a document that articulated the formal restructuring of sub-research areas and reallocation of leadership, individuals, and financial resources upon which the administrative leads voted. With that in place, the sub-research area leads completed their Year Three planning.

To facilitate communication, team members took advantage of conferences and other interactions to hold conversations within and across research sub-areas. As one example, the INKE conference in The Hague (in December, 2010) proved to be very productive. There, researchers not only met and exchanged research papers at the gathering itself, but also continued conversations with coffee, meals, museum visits, and walks over several days. This created “dedicated” time for interruption-free discussions, not often possible at conferences where research conversations might be limited to the standard question and answer period (AL2) or short lunch and coffee times (AL1), often hurried because individuals wished to attend another panel. One administrative lead suggested that the “strangeness of the situation” helped because no one was at their home institution and thus, might be more open to “strange ideas” (AL2). They further added that this meeting also reaffirmed the team as a whole and provided a chance to get the “motor fired up” for the research. Other conferences, particularly the Society for Digital Humanities/Société pour l'étude des médias interactifs at the Congress of Learned Societies (in May, 2011) and the Digital Humanities Summer Institute (in June, 2011) facilitated additional INKE-related meetings between researchers, GRAs, and postdocs. Others took advantage of additional travel to meet with INKE team members to move forward on several interdependent tasks. These conversations were then supplemented by regular conference calls and emails, and document and data exchange within and across sub-research areas. Regardless of the particular venue, joint publications and research between sub-research areas, clearer research direction within and across sub-research areas, and forward movement on tasks resulted.

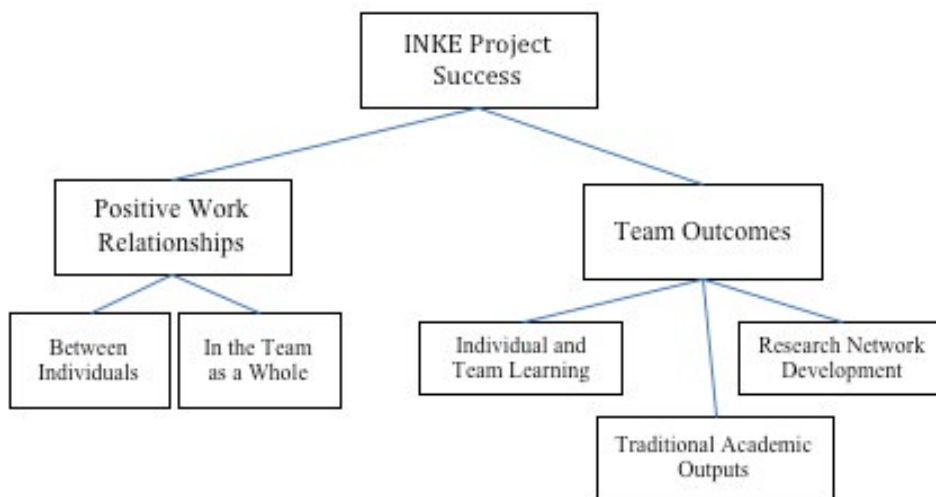
To ensure the continuity of knowledge and skills, GRAs and postdocs are mentoring and guiding new ones. Some of this is happening informally as GRAs share office space and participate in sub-research area meetings. More formally, they are developing manuals and other reference documents for their replacements. One postdoc noted that they spent their last month with INKE “writing a document” for the next postdoc (PD1) to reduce the INKE learning curve. To this end, GRAs and postdocs also suggested that their replacements “take the time to survey basecamp” and learn INKE’s history and overall research objectives and the focus of sub-research area (PD2).

Discussion

While the INKE research team remains in the grant’s early stages, some preliminary conclusions can be drawn. As this collaboration continues to deepen and builds on the foundational first year, INKE is drawing upon those processes that have the potential to create long-term project success, as defined by positive work relationships and outcomes (as shown in Figure 2), and deepen knowledge about how projects like this function (Corley, Boardman, & Bozeman, 2006; Kraut et al., 1987; Siemens & INKE Research Group, 2009; Trnka, 2008). As indicated above, the interviewed INKE team members reported very positive feelings about INKE at the team and individual

working levels. These are reinforced with team outcomes in terms of academic outputs, such as articles and conference papers, collaboration and project management skill development, and strengthened research networks at the discipline and individual member levels. As found in other studies of large scale research projects, the GRAs and postdocs are particularly enthusiastic about this final point and the contribution to their careers (Kishchuk, 2005). Ultimately, as one researcher highlighted, as the team gets more comfortable with collaboration, the more “collaboration sustains itself” (R1). Of course, INKE and the Social Sciences and Humanities Research Council (SSHRC), as funder, will only know how successful the collaboration has been at the mid-term and final project reviews.

Figure 2: Components of INKE project success at end of year two



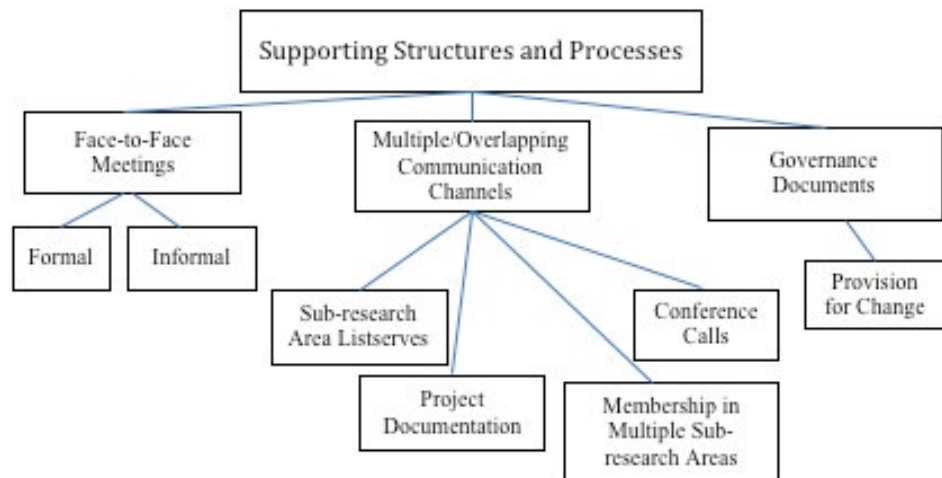
As seen in Figure 3, several structures and processes are in place to support and strengthen the collaboration. For example, team members discovered the value of intensive and extended face-to-face meetings as venues to talk about the larger research project and joint activities. As noted, conferences and formal team meetings provide opportunities for these important discussions (Kishchuk, 2005; Lawrence, 2006). However, they are not sufficient as the only outlet because they are highly structured events with little time for those informal conversations where innovation, creative breakthroughs, and problem solving can occur (Kraut & Galegher, 1990; Lawrence, 2006; Olson & Olson, 2000). As a result, INKE is testing a hybrid model that combines the formal structure of conferences and agendized team meetings, with more flexibly structured days before and afterward to create a space for the larger discussions about research objectives and tasks, as well as a reaffirmation and commitment of the team spirit and collaboration (Cummings & Kiesler, 2005; Poole & Zhang, 2005).

These very intensive interactions can then be sustained and supplemented with multiple and overlapping communication channels, including emails and conference calls (Handy, 1995; L. Siemens, 2010). Given the need to collaborate across sub-research areas, INKE has found it beneficial to involve some team members as active researchers in more than one sub-research area and include others in more than one sub-research area of “basecamp” (the online project planning space), in an

informational capacity. (Each sub-research area had its own space in basecamp where they conducted discussions and stored works in progress, data, and documents.) In this way, information about activities, timelines, tasks, and handoffs can flow more easily within and across sub-research areas (Lawrence, 2006). Finally, INKE as a whole, the administrative leads, researchers, GRAs, and postdocs are documenting the project in various forms to ensure that knowledge about the research, people, and other important context becomes part of the team's collective memory and survives the transitions that occur within these long-term research projects.

This collaboration's second year shows that transition in people, research activities, and other aspects of a given project is inevitable. The priority is to ensure that a team has processes established to facilitate these changes and transitions with minimal disruption, while incorporating new people, tasks, research priorities, and participating institutions. As was the case in its first year, INKE tested its governance documents and then developed new clauses to allow the change in structure, from four sub-research areas to three, and the introduction and reallocation of researchers and resources within team as a whole. As intended, these documents are living and respond to team needs (Siemens & INKE Research Group, 2009, 2010a). In effect, these governance documents are a "safety net" for the larger team (AL1) and allow the group to take risks and make changes. The success of these changes will be determined in the third year as new relationships are forged within INKE, a challenge faced by other large scale research projects (Barry, Britten, Barber, Bradley, & Stevenson, 1999; Flory, 1998; Lingard, Schryer, Spafford, & Campbell, 2007; Newell & Swan, 2000).

Figure 3: Supporting structures and processes



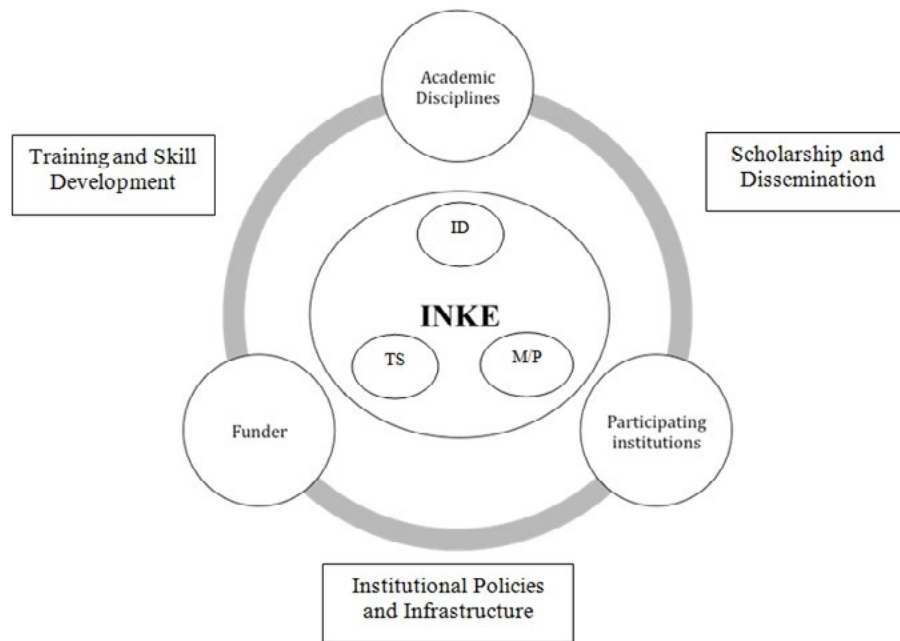
Finally, as seen in Figure 4, any discussion of the opportunities and challenges experienced by INKE must occur within the larger context in which this collaboration is situated (Kishchuk, 2005; Lawrence, 2006; Siemens & INKE Research Group, 2010b). First, the larger academic community, as represented by disciplines, plays several important roles. Given that INKE is an academic research project, its important and necessary outcomes include articles, books, conference talks, and other forms of appropriate academic scholarship. Not only does the larger academic community provide these outlets, it plays an important role in legitimizing e-book research and

other digital endeavours to “traditional” scholars who may be sceptical of its value. For example, the traditional Humanities associations, such as the Canadian Association for the Study of Book Culture and the Bibliographical Society of Canada, have given their “stamp of approval” on this by sponsoring joint conference panels and publishing research from INKE (Canadian Association for the Study of Book Culture, 2011; Siemens, Dobson, Ruecker, Cunningham, Galey, Warwick, & Siemens, in press). However, this relationship with the larger community is not one-sided, but rather reciprocal. Given its profile, INKE can support the efforts of researchers in other countries and academic communities to undertake similar initiatives, by providing catalyst points for discussions. For example, the 2010 INKE meeting in The Hague was held in conjunction with the conference Text & Literacy – it brought together like-minded researchers and started discussions for other collaborations (INKE Research Group, 2010). These types of gatherings have been repeated: the 2011 INKE meeting in Japan was held with the 2nd International Symposium on Digital Humanities for Japanese Arts and Cultures (Digital Humanities Center for Japanese Arts and Cultures, 2011).

At the same time, due to the nature of Humanities graduate training, many digital projects are having difficulty finding project managers with the required methodological and content knowledge, in addition to the technical and project management skills (Leon, 2011; Siemens & INKE Research Group, 2009). INKE is no different. In response, the project director and administrative leads have taken this administrative work on along with their INKE research and other responsibilities. At the same time, this collaboration has been successful in building these skills in the researchers, GRAs, and postdocs, as required by SSHRC’s MCRI grant objectives (Kishchuk, 2005; Social Sciences and Humanities Research Council, 2010; Trnka, 2008). In particular, the GRAs and postdocs realize the unique opportunity that they are getting in this regard. Ultimately, the larger community will benefit when these individuals join other projects and bring these skills with them.

Finally, in addition to extending boundaries on (electronic) books, INKE is pushing the understanding of the infrastructure and knowledge at the individual, institution, and funder levels needed to conduct large-scale Humanities digital research projects. Working across international borders, this team is navigating different institutional policies for expenses, salaries, cost-sharing, and other factors, all of which can have an impact on research progress and outcomes, a theme echoed in the first year reflection (Siemens & INKE Research Group, 2010b). Further, the second year’s challenges in attracting and retaining people with the necessary technical skills suggests these types of projects may be better thought of as “applied science” (AL3) with a Humanities focus, rather than a Humanities project with a technical component. As a result, new thinking about the necessary skills, cost-sharing arrangements, budgets, institutional support, and other areas is needed, and will feed into the discussion about the necessary cyber-infrastructure for Digital Humanities (Babeu, 2011; Unsworth, 2007). Humanities graduate training may need to be enlarged to include project management, research support, and technical skills, as well as include a discussion of the role and expectations of the “alternative academic” within research projects, thus better preparing graduates for the available jobs. In this capacity, the “alternative academic” includes project managers, researchers, and others who do not hold a traditional academic post (Scholars’ Lab, 2011).

Figure 4: INKE's larger context



Conclusion and recommendations

While each academic collaboration must develop its own mechanisms and processes that support its work (McGinn, Shields, Manley-Casimir, Grundy, & Fenton, 2005), this reflection on INKE's second year suggests some processes that are important to support the research and relationships underpinning that work.

First, and especially for those with geographically distributed members, teams must hold regular in-person meetings which are supplemented, but not replaced, by regular conference calls, emails, and online project management sites (Cummings & Kiesler, 2005; Lawrence, 2006; Trnka, 2008). Face-to-face interactions, in the form of both formal agendized meetings, and more informal times in discussion over meals, drinks, walks, and even museum visits, become fundamental to the innovation and creativity that are at the heart of large scale research projects, such as INKE. Further, these types of interactions and meetings facilitate direct accountability for research and tasks (Cummings & Kiesler, 2005; Olson & Olson 2000; L. Siemens, 2010). These meetings, which are held in conjunction with conferences and other gatherings, also offer opportunities for a project team to make connections with various academic communities and other stakeholders. In addition, by presenting papers at conferences and then participating in the team meetings, GRAs and postdocs gain more training in collaboration and academic skills (Siemens, Cunningham, Duff, & Warwick, 2009; Siemens & INKE Research Group, 2010b). At the same time, project teams must lobby for increased funding for travel and the associated hospitality to ensure that these important face-to-face interactions can occur (Lawrence, 2006; L. Siemens, 2010; Trnka, 2008).

As seen, change and transition is inevitable in long-term research projects. With this in mind, academic teams must establish mechanisms to handle these with minimal disruption. In particular, teams must find ways to ensure that knowledge transfers

among the most transient team members, including GRAs and postdocs, leadership is redistributed at the sub-research level, structural accommodation can be enacted, and new members brought in smoothly. Ultimately, these mechanisms need to be both formal and flexible so that the team can evaluate when and how to make changes in a timely manner (Lawrence, 2006). An important part of these processes is a strategy that will ensure coordination and task, a particular challenge when working within an academic environment, which tends to lack “strong management controls that help motivate or punish employees” (Lawrence, 2006, p. 407; see also Cummings & Kiesler, 2005).

Finally, particularly for those spread across institutions, academic teams must take into consideration how different institutional policies of partners will impact the project and its internal relationships. This may be a particular challenge when different cost-sharing arrangements and priorities exist (Lawrence, 2006). Cummings and Kiesler (2005, 2007) argue that coordination costs increase with the number of institutions involved, which can ultimately impact a project’s success. In those cases, when significant differences exist in funding formulas across institutional policies, a research team may need to examine their resource allocation formulas. For example, following SSHRC policy, the INKE team allocated funds for the various research positions (researcher, GRA, and postdoc) on a dollar for dollar basis, regardless of where the position was based. The end result was that the British partner could not “purchase” the same amount of research as was possible in Canada, which reduced the amount of research that they could deliver. This raises the question of whether the resource allocation formula, as outlined by the funder SSHRC and by team equity principles, should take these differences into account and perhaps ensure that each sub-research area has sufficient funds to gain the same amount of research, even if it results in relative funding differences in absolute monetary terms. At the very least, teams need to understand and not underestimate the impact these institutional differences may have on the project in advance of undertaking the work.

While only time will tell how successful INKE is in meeting its overall research objectives (R. G. Siemens et al., 2009), by the end of Year Two, the team was continuing to deepen its collaboration and was beginning to produce articles, papers, and other forms of scholarly output. The INKE team is also training the next generation of scholars and alternative academics, while connecting with the larger academic community. Through an examination of the INKE team’s experience, more can be learned about the nature of academic collaboration, its associated benefits and challenges, and strategies that can facilitate team interaction, and these learnings can then be applied to other large-scale research projects (Amabile, Patterson, Mueller, Odomirok, Marsh, & Kramer, 2001).

Note

1. Individuals will be identified by abbreviation for the group that they represent. For example, a graduate research assistant will be named as GRA#1.

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