

Supervisor and Student Co-Writing: An Apprenticeship Perspective

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Abstract: This is a story about the creation of a co-authored research article. The purpose is to emphasize co-writing as a significant pedagogic practice within doctoral supervision. Regarding apprenticeship as a pedagogical methodology as well as a theoretical framework makes co-writing more than an output-driven technique for increasing productivity. Becoming a researcher requires intense involvement in real research, and it is difficult to teach somebody how to do it. It entails practice. This practice is presented by means of an e-mail correspondence between a doctoral student and her supervisor during the article production. These real-time reflections show that effective apprenticeship in this context is a matter of giving access to the practice of doing research, opening up the field and thereby providing direction. However, it is also a theoretical perspective concerned with adding materiality and real tasks to the relational space between supervisor and the novice researcher.

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1. Introduction

The high status of and pressure associated with publishing is not new in academia. What is somewhat novel is the growing expectation that students publish while they are pursuing their degree (LEE & KAMLER, 2008; NETTLES & MILLETT, 2006). Many doctoral students struggle with the requirements for article production, and regardless of publication success or failure, the whole process is often one of tremendous effort and anxiety for students (KAMLER, 2008; KAMLER & THOMSON, 2006). Doctoral research is a major source of new knowledge, and encouragement from supervisors is an important aspect of the publication process (KAMLER, 2008, p.284). However, the supervision of students can be time consuming and regarded as an additional workload. A possible result is that students feel isolated and on their own and do not really benefit from the full learning potential of doing research (KVALE, 1999). An even more severe result is drop-out. A study of doctoral students at 29 U.S. and Canadian universities reports that only 40 to 50 % of Ph.D. candidates complete their programs within a decade (SOWEL, ZHANG, BELL & KIRBY, 2010). The report concludes that attrition runs high in Ph.D. programs, despite rigorous selection processes in graduate schools and high achievement levels among those seeking doctoral degrees. Attrition is highest in the humanities, while the completion rates are higher in mathematics and the physical sciences. Similarly, in Denmark, 30 per cent of doctoral students in the humanities never finish their dissertation, 22 per cent within the social sciences and eight per cent in health science (EPINIONCAPACENT & UNIVERSITETS-OG-BYGNINGSSTYRELSEN, 2007). This Danish report concludes that the quality of supervision and a strong academic environment are the key factors for reducing dropout. How can these requirements be met? Co-writing with supervisors is one possible answer, which offers considerable potential, though not without some pitfalls. We will address both in this article. [1]

Traditionally, researchers in the social sciences and humanities do not produce articles in groups, as do researchers in the natural sciences, where co-authorship with supervisors are seen as standard and as an important tactic in preparing for post-doctoral work. Accordingly, science graduates are far more successful in publishing in international refereed journals. "Education graduates, by contrast, appeared more reluctant to submit their work to international refereed journals, had fewer strategies for doing so and received less supervisor support in the process" (KAMLER, 2008, p.287). [2]

In this article, we highlight one strategy with potential to strengthen learning, supervisor-student interaction and the publication outcome. An e-mail exchange over the course of ten months serves as a real-time documentation from which we extract the student-supervisor interaction that ran parallel to the creation of a chapter in a Danish book of readings (WEGENER & TANGGAARD, 2012) and subsequently an article (WEGENER & TANGGAARD, 2013) for an international journal. Our aim is to reveal how the craft of research can be taught and learned through a form of apprenticeship as a pedagogical methodology, as well as a theoretical framework. [3]

The article is structured as follows. Firstly, drawing on the literature on situated learning, we argue that co-writing may be regarded as a highly productive process of apprenticeship. Secondly, we deal with writing as a method of inquiry and especially with established practices of collaborative writing, and we discuss the legitimacy of co-writing within the supervisor-student relationship. E-mails produced during co-writing constitute an exchange of both student and supervisor perspectives and highlight several steps of apprenticeship during the process of co-writing, from the first invitation into the research community, to the building of an argument, the iterative process between theoretical considerations and empirical analysis, taking turns, the interpretation of reviewers' comments, revising and finally getting published. Concluding, we discuss the advantages and pitfalls of supervisor-student co-writing and consider the implications for an apprenticeship perspective on co-writing, as well as on co-writing as a pedagogical practice within doctoral supervision. As noted by COLYAR (2009, p.433): "When we write a description of methods for our dissertations or journal articles, we might include a paragraph that acknowledges our debt to the writing process." Here, we dedicate an entire article to this end. [4]

2. Learning the Research Craft

KVALE (1999) has suggested that research is a craft that can be learned through apprenticeship. The notion of apprenticeship in academia builds upon a perception of research as grounded in situated activities that are associated with situated knowledge and intuitive expertise, a process which does not necessarily follow analytical and conscious rules. Qualitative research methods and methodology are regarded as a craft to be practiced together by a master and an apprentice (BREUER & SCHREIER, 2007). From this perspective, learning processes must include real production. One key means of doing so would be to rethink co-authorship more explicitly as a pedagogic practice, rather than as an output-driven maneuver merely aimed at increasing productivity (KAMLER, 2008, p.292). [5]

In their presentation and elaboration of the situated account of learning, NIELSEN and TANGGAARD (2011) explain that the situated account of learning underlines the importance of access to and transparency in the field of learning. This does suggest that learning is not only a cognitive process of information processing or knowledge acquisition (an epistemological process), but more fundamentally an ontological process, an essential part of becoming somebody, an identity-constitutional process (PACKER & GOICOECHEA, 2000). Accordingly, learning the craft of research requires access to the communities of practice within research, trying out a distinct way of living, learning the "tips and tricks of the trade," and learning to live and feel and think as a researcher. [6]

Based on the work of LAVE and WENGER (1991), KVALE (1999) argues that apprenticeship learning is situated in concrete forms of local production; learning of a craft takes place by the production of specific articles of trade, with the master representing the exemplary status of mastership to be emulated by the apprentices. All of this requires intense involvement in real research and it is very

difficult to teach somebody how to do it. It entails a broader embodied and materialized practice involving particular technologies along with: joy, suffering, excitement, failures, experiments, discussion, collaboration, and feelings of insecurity. It is first and foremost a daily affair. If considered a method, it is a matter of being together with other researchers, doing research and living, feeling, thinking and acting as a researcher. For example, HASRATI (2005) and LEE and ROTH (2003) argue that the concept of legitimate peripheral participation is a productive tool for understanding the nature of the doctoral learning process as well as the relationship between students and supervisors. The main characteristics of this perspective are twofold: 1. that novices are supported and given enough credibility to be considered legitimate members of their target communities and 2. that they are gradually given more demanding activities, so as to learn the craft. Similarly, WALKER, GOLDE, JONES, BUESCHEL and HUTCHINGS (2008) devote a book chapter to reconsidering apprenticeship, arguing that apprenticeship pedagogy entails revealing the professional expertise that is all too often taken for granted. The mentor must create this visibility by deliberately constructing occasions and assignments that allow the student to practice key tasks. Additionally, they argue for an organizational approach to apprenticeship, which avoids the unintended consequences of pairing a student with a single adviser. This is a critique of classical apprenticeship which we will address in Section 6. [7]

As such, a sound apprenticeship process is not just a matter of "good chemistry" between supervisor and student but a matter of providing access to the real practice of conducting research, "inviting in," opening up the field and thereby providing direction. All of this is based on the conception of research as a social practice which is first and foremost learned as such. However, it is also basically a theoretical perspective concerned with adding materiality, objects and given tasks to the relational space between supervisor and novice researcher. This implies an approach of knowing as doing. As argued by BRINKMANN and TANGGAARD (2012), we see with our eyes, but take with our hands. Experiencing the world—and knowing it—are functions of our practical activities, of our *handling* the world. What we experience and know about the world are primarily aspects of things that we interact with and manipulate (literally "operate with our hands"). Accordingly, we argue that experimentation, training with real material in order to write a paper, and an adequate amount and level of feedback, can be viewed as a *pedagogy of doing*, which serves as a basis for productive researcher training. No human being is able to be creative or original "out of the blue." The basis for creativity and original work by the novice researcher is not flexibility in a vacuum, but is found in the ability to "dig deep" within a particular field, which requires considerable time and hard work. The implicit values of craftsmanship that point towards virtues such as working hard and collaboration are not in opposition to creativity and the true realization of an independent trajectory of participation on behalf of the novice researcher, but they constitute the conditions for its realization (see also SENNETT, 2008). Unfortunately, many students do not encounter positive apprenticeship experiences and may accordingly fail to develop their full potential (WALKER et al., 2008). In the

following section, we will address one specific way to establish a positive apprenticeship experience, namely co-writing with the aim of getting published. [8]

3. Co-Writing as a Pedagogic Practice

In their introduction, DENZIN and LINCOLN (2005) suggest that writing is not simply the activity researchers begin once the inquiry is complete. Rather, writing is a kind of data collection, or a method of inquiry (RICHARDSON, 2003). The latter encourages researchers to pause over the writing process and use exploratory writing forms (what RICHARDSON calls "creative analytic practices") and makes suggestions for writers who wish to experiment with new writing modes. However, this issue has been difficult to explore, and conversations about writing have inevitably favored product rather than process (COLYAR, 2009). Academic writing is complex, disciplined and identity-related work, and it is not enough merely to offer a set of tips and tricks to increase output in narrow and short-term ways (KAMLER, 2008). Writing well entails decoding academic writing conventions and becoming a critical, creative researcher. As indicated above, we view doctoral writing as a discursive social practice (FAIRCLOUGH, 1992), as a form of discipline-specific social interaction embedded in institutions and social structures. Through the lens of apprenticeship and with a perspective on learning as a matter of gaining access to the "trade" in the field, we consider co-writing as a core activity aiming at learning the craft of writing, knowledge production and publication. "I write in order to learn something that I did not know before I wrote it," RICHARDSON (2003, p.501) aptly noted, indicating that the researcher's engagement in learning is the driver for all research writing. While writing, the researcher acquires new ideas and insights. Unfortunately, reflections, agreements and advice during supervision and teaching are not necessarily remembered, transferred or even understood by the student. In contrast, a co-writing process continuously produces evidence of the student's experimenting with the material, struggling and progressing. Learning the craft of writing manifests itself step-by-step in each version of the manuscript. Thus, the supervisor receives instant feedback about the student's learning, which is difficult to achieve from oral dialogue alone. Likewise, the student receives instant feedback from the supervisor's revisions and additions to the text and experiences the evolution of a tangible product of the learning process. [9]

Literary apprenticeship is not new, and has been formalized through writing classes and workshops at universities (DAWSON, 2004, p.48). However, writing classes may not assist doctoral students in their struggle with the research material and article format, and writing classes do not create access to research communities of publication. For example, NELSON (2008) has argued that practice and not pedagogy is the proper object of study for an area of creative writing. Moreover, it is not sufficient for academic writers to forge a body of critical knowledge through research on practice, but also a question of forging a body of experiential knowledge through practice and about process (NELSON, 2008). From an apprenticeship perspective, however, pedagogics and practice "for real" are not independent of one another. KAMLER (2008) argues that co-authorship with supervisors is a significant pedagogic practice that can enhance the

robustness and know-how of emerging scholars as well as their publication output. There is a need, however, to rethink co-authorship more explicitly as a pedagogic practice, particularly in the humanities and social sciences. [10]

4. E-Mails as Real Time Data

WOLCOTT (1990) discusses the usefulness and importance of "writing early." He argues that writing about our work provides a baseline, an articulation of where we have been as researchers. This emphasizes the importance of field notes about assumptions and impressions during the process of analysis. The e-mails in the present article are not created as early writings or conscious field notes about process. However, unintended as they may be, they constitute a comprehensive record of learning and collaboration, because each exchange of a new manuscript version is followed by a commentary e-mail. [11]

McMORLAND, CARROLL, COPAS and PRINGLE (2003) note that collective reflection on the practice of PhD supervision is under-developed amongst the community of academic supervisors and students, and few studies inquire into practice "from the inside." Our empirical material does not express conscious reflection or focused baseline construction. However, we apply those here into retrospective reflections and for this purpose, they serve as glimpses into the main features of supervision, learning and production through co-writing. [12]

E-mails as data imbedded in communities is comprehensively discussed by, for example, ORLIKOWSKI and YATES (1994) who analyzed almost 2,000 e-mail messages revealing certain aspects of a community's organizing process (p.570). Based on the notion of communities of practice (BROWN & DUGUID, 1991; LAVE & WENGER, 1991), ORLIKOWSKI and YATES (1994) claim that e-mails are communicative actions situated in a social practice which shapes, and in turn is shaped by, individuals. E-mails have also been used as data, with the aim of analyzing unity and diversity in a cross-university collaboration project (AKKERMAN, ADMIRAAL & SIMONS, 2012). Also, they represent a currently very typical medium for research communication, serving as a supplement or alternative to face-to-face meetings and in this regard, this present research reveals supervisory processes as they occur in this increasingly common virtual reality of research. [13]

The empirical data for this study comprises 55 e-mails, which represents the complete communication related to the published book chapter and the article, as we did not discuss these co-authored works at our physical meetings. The 23 e-mails (translated from Danish) actually presented in the following analysis have been selected and shortened with the aim of conveying the main features of apprenticeship during a process of combined doctoral supervision and co-writing. They are those which most clearly articulate the supervisory process, while the remaining 32 e-mails did only involve conversations concerning small details and minor interchanges concerning corrections involved in the writing process. [14]

The following e-mail dialogues involve Lene (the supervisor), Charlotte (the apprentice), and David BOUD (the editor of the journal). We present the e-mails in the original chronological order to highlight the dynamics and progress of the interaction; the critical parts in the student's writing process, her considerations about the work, how she asks more or less directly for help and how the supervisor handles her response, sometimes with contributions to the text, and sometimes giving instructions to encourage that the student proceed on her own. As such, the analysis takes the form of a narrative to illustrate an apprentice-master interaction. Described is the process of the initial invitation to the research community, providing access, the apprentice learning the craft through imitation and instruction, gradually becoming confident enough to make more decisions on her own. The narrative also indicates that access is never fully accomplished, as there is always a new or wider community in which to become involved and there is always the quest for credibility. [15]

5. Analysis of E-Mail Dialogues

5.1 Inviting in—unconditionally accepting

The co-writing process takes its point of departure in this brief e-mail from the supervisor to the student. The supervisor has received an invitation to contribute to a book, and she asks the student to join her:

25 August 2011 16:08 Lene Tanggaard wrote:

Dear Charlotte

Today I was asked to contribute to a book on Innovation Psychology. There is a short time, and the final manuscript must be ready in December. However, it struck me that maybe we could write the manuscript together?

Alternatively, I can write it myself, but it would be great with an empirical article based on your interviews.

Please consider it but I understand if you turn it down, of course.

Regards, Lene

25 August 2011 16:24 Charlotte Wegener wrote:

Hi Lene

I don't need to think about it. Of course I would like to do it. How do we start?

Charlotte

25 August 2011 16:35 Lene Tanggaard wrote:

Hi Charlotte

Super! I can do a big chunk of the theory—set the psychological framework. So you do a draft and I take over? And then we can send it back and forth by e-mail and talk it over.

Best regards, Lene [16]

This e-mail communication pinpoints the initial step of an apprentice learning process of the craft of producing an academic paper. However, there is no instruction about how to initiate this work, no information about editorial requirements or text format. Being a member of a research community, the supervisor is capable of an "open sesame" to the research community with just one e-mail query to the student. She knows the student's empirical material and initial analysis and emphasizes the student contribution (empirical material) making clear its potential value. She also specifies her own contribution (the theoretical framework). The student is recognized for her work so far and responds to this with unconditional acceptance and a fundamental question: how to embark. The supervisor frames the collaborative process: "we can send it back and forth by e-mail" and hands over the initiative to the student: "you do a draft." [17]

5.2 Idea testing and getting the student to work

The student does a draft, suggesting that her empirical material reveals two distinct perceptions of innovation: levers which are understood as methods, techniques and management detached from the daily work practices, and craft, understood as professional skills bounded in actual work situations where ideas emerge and problems must be solved:

28 August 2011 14:13 Charlotte Wegener wrote:

Hi Lene,

Here are some initial ideas. It feels good to get started so here is a raw sketch. It will be easier for me to continue when I see your suggestion for a theoretical framework.

What about the target group? What role should the empirical material play? I have blocked my calendar all Friday for writing.

Regards, Charlotte

28 August 2011 15:18 Lene Tanggaard wrote:

Hi Charlotte,

Impressive—I love your analytical distinction between innovation as "craft" and as "levers". Both conceptions of innovation are valid, but we could emphasize the importance of linking craft and levers if innovation is to change practice for real. I can frame the chapter, outline the dominant theories of creativity and set the scene for our approach. However, I don't have time the next couple of days.

The empirical material should play the leading role—that indicates that we are really conducting research.

If you have the time, you can describe the method before I take over.

Regards, Lene [18]

This dialogue takes place only three days later. And for a reason: The student is quick to present her main idea to prevent performance anxiety, and to avoid potential critique, she mentions that this piece of writing is just a rough sketch. She also asks for feedback to test the idea about different understandings of

innovation as craft and levers, and she asks for the supervisor's theoretical input and seeks advice about the audience. Finally, she demonstrates her commitment by telling the supervisor that she devotes substantial time to this work. The supervisor is very supportive, praises the work so far and suggests a theme, a main hypothesis to guide the student's work. She also leaves additional work to be done by the student before she takes over. Gentle pressure and a few guidelines are provided. [19]

5.3 Theoretical framing

The student writes a draft of the method chapter as advised, and soon, the supervisor does what she promised and returns a new version with the theoretical framing:

1 September 2011 10:25 Lene Tanggaard wrote:

Dear Charlotte

I have given the chapter a thorough theoretical going-over. Actually, it was fun to clarify that we are continuing the latest trend within the psychological creativity and innovation research, and also taking it a step further through qualitative empirical study.

You are welcome to complement and comment. I have inserted some references. It is important that we specify the main themes in the concluding discussion. Please think along those lines and send back the chapter when you have worked with it.

Kind regards, Lene [20]

The supervisor has now made a major contribution to the manuscript where she clarifies their shared theoretical foundation and contribution to the research field. She invites the student to add more and takes stock of the remaining tasks to be completed. She restates central issues and advises the student to keep these in mind when proceeding.

2 September 2011 19:02, Charlotte Wegener wrote:

Hi Lene

Here is what I have achieved so far. I have rearranged some sections without tracking changes, but all new text is tracked. I have not worked on the discussion yet, but I have tried to emphasize the themes in the Introduction. When we have decided more precisely on the themes, I will go through the analysis again.

Have a nice weekend - Charlotte

4 September 2011 22.25 Lene Tanggaard wrote:

Hi Charlotte

You have made some good additions! When you rewrite the empirical analysis, try to make use of our introductory theory. Like: "This resembles N's definition of ..." and "Here are clear parallels to ..." This allows for a dynamic reading process and our introductory reflections will explicitly guide the reader through the empirical data.

Theory and data will both challenge and verify each other. You might also rephrase some quotes and include them in the body of the text.

Best regards

Lene [21]

The student feels uncertain about how to proceed in making theory and empirical data interact. She rearranges some sections and adds text, but she hesitates to finally decide on the analytical themes and arguments. She implicitly asks the supervisor to be involved in the decision-making as she writes; "when we have decided more precisely on the themes" The supervisor; however, does not respond to this call, but instructs the student by suggesting specific wordings and phrasings that might help her proceed on her own. [22]

5.4 Focused asking for advice and making structural adjustments

The following dialogue reveals the student's impatience and dissatisfaction and the way the supervisor both contributes to the manuscript and guides the student. According to the supervisor, what is needed now in the manuscript is a necessary movement back and forth between empirical material and the theoretical landscape of innovation literature. The supervisor suggests briefly which concepts might be useful and where it might be appropriate to insert these in the manuscript. At this point, the student has worked very hard finding themes in the empirical material, but she still needs help in order to find out how to distinguish the possible theoretical contribution.

9 September 2011 13:32 Charlotte Wegener wrote:

Hi Lene,

Now the manuscript needs a good think.

I will comment on the model on the last page if you think it makes sense. I am not happy with the analytical categories/headings, but I will take a look at them in the next round.

Additionally, I need relevant literature about couplings and decouplings. It is not quite the same as "points of coupling" is it?

The mental side (innovation as thinking) is empirically significant. What part of the creativity literature deals with this?

I have time to work during the weekend.

Kind regards, Charlotte

10 September 2011 17:23 Lene Tanggaard wrote:

Dear Charlotte

I have written a clear introduction—it was missing. I have made some minor adjustments to the theoretical part. I have referred to Bilton to highlight the celebration of the new within the innovation discourse.

It really works now. The interview quotes are funny (or tragi-comic). It is fine to use my concept "decoupling"—I suggest that you refer to it briefly where you mention Engeström.

In my opinion, the strength of the empirical material is that it shows that the innovation concept tends to be decoupled from professional practice and its values. It is both an advantage and a disadvantage—mostly the latter.

In my opinion, the informants' focus on thinking reveals the prevalence of the classic psychological model of creativity as divergent thinking (I have added a few sentences on that). Additionally, we could emphasize the need to develop creativity models, which does not just deal with thinking, but includes questions on how to make things happen, how to integrate innovation into professional contexts, how to make creativity meaningful in relation to values, ethics and professionalism. The decoupling of the creativity concept from these additional concepts is the main problem.

Your idea to introduce the empirical sections with a diagram is good. The model in the final section works well—we could use it earlier to prevent an abrupt closure. It might be better to conclude with the above mentioned decoupling problem.

I can look through the text once more, but we are almost there.

Regards, Lene [23]

At this moment, the student has worked as instructed, made a model displaying the analytical themes and made decisions about headlines to organize the themes. She effectively presents one of the main themes in the empirical material; the understanding of innovation as a mental process, and she is able to specify her needs: help with definitions and theory to qualify this finding. She knows what is missing, but cannot complete the analysis herself at the moment, or perhaps she is unnecessarily self-critical. It appears, in fact, that the supervisor feels that only small adjustments are needed as shown in the following correspondence. However, the manuscript needs "oxygen"—and so does the student. The supervisor knows that the paper is almost ready for submission and makes some small adjustments. Additionally, she moves to another level of abstraction through commenting on their theoretical contribution to the research field. She thus indicates that creative investigation and introspective learning are no longer enough. [24]

5.5 Fine tuning and some deletions

Now, it is time to consider the form of presentation, the strengthening of arguments and their positioning in a wider community of practice:

14 September 2011 22:28 Lene Tanggaard wrote:

Dear Charlotte,

I have made some small changes and deleted a section prior to the method chapter. Is that okay? I think it was a bit too chatty ... but if you really want to, we can keep it.

Regards, Lene

15 September 2011 10:21 Charlotte Wegener wrote:

Hi again

The deletion is fine. I have done a language check, and if you find it ready for submission, we submit.

See you tomorrow—thank you for pushing me.

Regards, Charlotte [25]

Until now, the supervisor has refrained from deleting any of the student's writing. Instead, she has guided the wording by adding to the manuscript or by identifying the main theoretical themes in the e-mails. This gentle support has allowed the student to develop her personal "stamp," an angle on the research problem (KAMLER & THOMSON, 2006) and a "writer stance" (HYLAND, 2002), and from the supervisor perspective, it was indeed intended to be just that. There were probably other "chatty" sections, but the student removed some of them along the way, while developing her ideas through writing and rewriting and while exercising the craft of academic writing. The rest is left to the reviewers. The student is rather self-confident for the time being and accepts the deletion with ease, and clearly appreciates the supervisor's initial "push." This wording reveals the delicate balance between providing access to the research community and expecting the student to contribute. Access and guidance are not provided once and for all, but must come in measured, situational doses; occasionally specific and firm, while space and trust are required at other times. [26]

5.6 Sharing completion

The manuscript has now been submitted and the next e-mail addresses the reviews:

2 October 2011 10:07 Lene Tanggaard wrote

Dear Charlotte

The feed-back is quite good. Congratulations to you (and me)—I know from John [a colleague who also submitted a paper] that some reviewer comments were very tough, so we are lucky ...

Did you look through it to ensure a nuanced discussion and conclusion? These are minor requests. I will take a look at it afterwards.

By the way, let's do our own revision and develop the paper further. I think we could develop our over-all conception of innovation and learning even further and write about it for a more international audience. We will discuss that later.

Kind regards, Lene

2 October 2011 17:13 Charlotte Wegener wrote:

Hi Lene

Here is an attempt to meet the editors' requests. We still need to include the role of psychology and the fact that we are trying to complement the management research.

Something has been replaced, something is new.

Best regards, Charlotte [27]

After a second revision, the book chapter is accepted for publication and e-mails concerning other tasks pile up in the mailboxes until:

14 November 2011 09:54 Lene Tanggaard wrote:

Dear Charlotte

At some point, we should develop our paper further and publish it more internationally. The journal *Studies in Continuing Education* is an obvious choice. Moreover, it is ranked second on the bibliometric research indicator, so you will be well positioned if we succeed.

Regards, Lene [28]

In the first e-mail, the supervisor congratulates the student and leaves the revision to her, reassuring her that it entails "minor requests" and she promises to look through it afterwards. The student gains experience about responding to reviews and the supervisor frees up time for other tasks. The book chapter is completed, but there is no time for complacency, while the work is still fresh and current. [29]

5.7 Extending the radius of the research community

The supervisor assesses the material as worthy of further publication and now offers the student access to the international research community. However, this is unmanageable and vague to the student, and she does not respond to the initial request, so a "bait" from academia is mentioned, namely the bibliometric research indicator. As the final e-mail conversation in this paper reveals, the two of them indeed managed to continue the further cooperative development of the paper:

1 December 2011 08:50 Charlotte Wegener wrote:

Hi Lene,

I managed to upload the manuscript. It took some time but practice makes perfect, I guess ☺

Regards, Charlotte

12 May 2012 10:57

To: Charlotte Wegener

Subject: *Studies in Continuing Education*—Decision on Manuscript ID CSCE-2011-0060

Dear Ms. Wegener:

We have now received responses from the referees of your paper 'Educational Innovation: A Craft or a Lever?' submitted to *Studies in Continuing Education*. My apologies for the delay, we needed to approach many referees before finding some suitable ones.

They recommend that your paper be published subject to revision. The reviewer comments are included at the bottom of this email.

Sincerely,
David Boud

16 May 2012 15:23 Lene Tanggaard wrote:

Dear Charlotte

The review is quite positive and we are almost there. It is a good idea to read the suggested articles. Both reviewers ask for a more focused literature review regarding innovation/elder care/public sector. The first reviewer even did some of our work for us by referring to specific articles. I'll take care of the concepts "craft" and "levers". They also suggest that we have a new title, which is a good idea.

Let's keep in touch ... I won't start writing until I get your "go ahead", but I will read and reflect.

Regards, Lene

19 May 2012 15:33 Charlotte Wegener wrote:

Hi Lene

This is my preliminary revision. The paper needs to be reorganized to give the model a more prominent position, but I need to get a better grip on the contents first. However, you may find a brutal cut and paste simple and know what to do? If so, please do it.

We need to cut about 2.500 words (required maximum length is 8.000 words)

The title gets weirder the more I try, so I leave it for a while.

Regards, Charlotte

21 May 2012 09:25 Lene Tanggaard wrote:

Dear Charlotte

You have made some great changes. I have added quite a lot. I have tried to clarify our aim and stress that human creativity is a prerequisite for successful innovation. By doing so, craft and creativity are linked (which is a little funny, per se). Maybe even more clarification is needed, but we are almost there. The learning dimension is clarified too.

I have deleted the introductory quotation and therefore deleted the reference to it in the discussion. I have deleted the section about Grounded Theory; I think the paper works well without it. New title—what do you think?

All changes are with track changing mode and still changeable, of course.

Kind regards, Lene [30]

Although reduced in some sections, the manuscript is now too extensive, and for the first time, the student makes deletions in text written by the supervisor. However, the supervisor has also made major changes, and the work is now more co-collaborative in its character showing the progress in the student-

supervisor relationship. While the overall structure and idea of the first co-written chapter for the Danish Book was decided upon by the supervisor, as well as which literature to focus upon, the student is now asked to contribute more directly by finding her own theoretical sources. The supervisor also deletes the section on grounded theory methodology (GTM) which has troubled her all along. Initially, she did not want to shake the methodological ground of the student too much (as well as the ground of GTM), but she now insists on working with a more theoretically informed analysis than what is usually allowed by GTM. From the classroom, attending an optional course about research strategies for PhD students, the student now writes in response:

21 May 2012 15:40 Charlotte Wegener wrote:

Dear Lene

I have removed around 1.300 words. If you cut another 1.000, we are within the limit. I have added information about the actors and the interview guide. I am listening to a lecture about how to write popular science articles ...

Regards, Charlotte [31]

The student does not comment on the choices of the supervisor, nor on her selection criteria in the deleting process, instead focusing on the shared efforts at streamlining the manuscript. Additionally, she makes a discreet joke about the irrelevance of a lecture, which aims at improving her writing skills, while she simultaneously improves her writing skills for "real."

22 June 2012 10:34

To: Charlotte Wegener

Subject: Studies in Continuing Education - Decision on Manuscript ID CSCE-2011-0060.R1

Dear Ms. Wegener:

Ref: The concept of innovation as perceived by public sector frontline staff

We are pleased to accept your paper in its current form which will now be forwarded to the publisher for copy editing and typesetting.

Thank you for your contribution to Studies in Continuing Education and we look forward to receiving further submissions from you.

Sincerely,

David Boud

Editor in Chief, Studies in Continuing Education

22 June 2012 11:14 Charlotte Wegener wrote:

To: Lene Tanggaard

FW: Studies in Continuing Education—Decision on Manuscript ID CSCE-2011-0060.R1

Yes! [32]

6. Discussion—A Pedagogy of Doing

We will leave the student and the supervisor in their state of academic satisfaction and gentle negotiations regarding the content of the papers they write and turn to potentially generalizable knowledge that can be extracted from this specific empirical process. Critical perspectives on co-writing will be considered along with some methodological reservations. Finally, we shall list key advantages and pitfalls of student-supervisor co-writing and suggest themes for further research on doctoral supervision within an apprenticeship perspective. [33]

6.1 Summing up

Our aim was to shed light on the process prior to and during a co-authored publication. How can a co-writing process be initiated and driven while being part of a student-supervisor relationship? What student attitudes and supervisor skills are required? How can co-writing become an integrated part of learning and supervising within doctoral study, and which potential disadvantages or hazards may be important along the way? [34]

To sum up, what is perhaps most evident from the above examples is the relatively brief and more implicit style of the supervisor. Even if the e-mail conversation gives the impression of continuous and elaborate conversation, the paper is actually written on the basis of a relatively small set of virtual interactions. It is written through a process of working together, based on an implicit and mutual understanding of writing and getting things done. JOHN-STEINER (1997, p.52) captures some of this essence by stating that:

"[I]earning that leads to creative work requires an individual to work at it. Creativity lies in the ability to see more sharply and with greater insight that which one already knows or that which is buried at the margin of one's awareness." [35]

In other words, what is required to write and get published is not always elicited verbally, detached from the actual everyday process of writing and trying to publish. It lies in the activity itself and is sometimes seen more clearly and precisely by both supervisor and novice researcher when they engage in the activity together. Additionally, there is undoubtedly an interest from both parties in getting the work done as both are dependent on publishing their work. In this light, co-writing must be seen as a mutual investment and, accordingly, yielding mutually benefits. Students serve as "data-providers" and "publishing motors," and students who really learn the craft contribute to more publications, both while learning and over the longer term. This shared understanding creates a no-nonsense alignment and common purpose, which allows the supervisor to be quite explicit about production expectations and allows the student a fair amount of the supervisor's time and attention. The student gets the opportunity to decode academic writing conventions while reading the supervisory contribution, and at the same time, she is on her own to practice and thus has the opportunity to become a critical, creative researcher. She does not have to worry that she might "put her foot in it," as she can leave the initial assessment of her ideas and writing

style to the supervisor. Gradually, she gets increased knowledge on how to operate in terms of the discourses of publishing. Her own judgments are thus not critical in this phase, because the supervisor acts as a gatekeeper:

"The term 'first cut publisher' evokes an understanding of the supervisor as a critical mediator and representative of the broader scholarly community, embodying its conventions, reading the text to help it stand up in the international arena. Again, it is the supervisor who keeps the student in the game" (KAMLER, 2008, p.290). [36]

Accordingly, studies have shown that co-authorship with supervisors is significant in developing a profile for student writing in both education and science research communities. It was co-authorship that produced internationally refereed publications—without it, they would not occur (p.292). Co-authorship helps the students avoid many of the struggles and anxieties of publishing reported as one of the reasons for giving up doctoral studies (KAMLER, 2008). In the present case, the first paper of the student was co-written with the supervisor. We believe that this is the main reason why the student did not experience these often reported feelings, mainly because she did not feel alone in the process. She was literally taken by the hand and guided into the publishing landscape by the supervisor. This fosters the student's ability to cope and be robust within the social practice of academic work. In our own co-authorship narrative, it is evident that the supervisor serves as an "accomplice" during the review processes, and despite the fact that reviewers' comments might sound harsh, the student is not alone in receiving them, decoding them and returning to the manuscript for revision to meet the requirements. [37]

6.2 Limitations

As mentioned above, the present analysis is based on only 55 e-mails from one single co-authorship process and thus, evidence from only one single supervisor-student relationship. Each supervisor-student relationship is unique and may also change over time and reveal diverse aspects, depending on the actual shared task. As such, several reservations in terms of generalization must be made. What worked well in this case, might be dysfunctional in others. For example, the rather brief and implicit supervisor style that encouraged the student in our case may block other students and thus, more instruction or explicit guidance may be what it takes. Our aim is not to advocate "one size fits all," but to learn from an efficient and stimulating, but relatively subconscious process that might inform a broader field of doctoral students and supervisors to make their own informed choices. Research on co-writing for production is, as mentioned, sparse, and evidence from processes that work well seem ever sparser. [38]

6.3 Future practices and research themes

With these reservations in mind, what can be learned from the present analysis? What would constitute imperatives for a successful process and product? At least two things stand out from our experience with the initial creation of a space in which both supervisor and student can move with ease:

1. The student must be involved in all parts of the job, including the parts that are unpleasant, or involve hard, practical work. "Getting her hands dirty" from the start avoids performance anxiety and creates concrete (text) material with which to work.
2. The supervisor must encourage rapid exchanges of written material. The student can be redirected or advised with minimal effort and small hints, which maintains the speed and spirit of the process and work. [39]

Here are, however, both advantages and potential pitfalls of such a co-writing process. Although a dominant practice within the sciences, it has been perceived negatively, particularly in the field of education, for ethical reasons regarding questions of ownership, autonomy and self-exploration (KAMLER, 2008, p.285). A general criticism of apprenticeship is that it entails the risk of reproduction and intellectual conformity (WALKER et al., 2008, p.90). These reservations should, of course, be taken into consideration in a co-writing process, as well as in all other activities within doctoral supervision. Collaboration always involves power dynamics, and when the collaborators have uneven access to power, it may be even more important to keep the question of power and ethics in mind and for the supervisor to act accordingly. The student might not feel safe enough or be too focused on doing well in academia to express feelings of being overruled. Thus, we believe that the supervisor has the power and even an obligation to continually be involved in and build on the students' ideas during a co-writing process. Additionally, it seems important (as the supervisor does in one of the e-mails) to invite the student explicitly to revise the supervisor's writing. Co-writing should not be the merging of two authors' texts; rather it should end up being one product with two personal "stamps," and a shared angle on the research problem as mentioned by KAMLER and THOMSON (2006). [40]

From this perspective, what is often neglected in reservations towards co-authorship seems to be the sharing and building of power inherent in a co-writing process. From an apprenticeship perspective, the power of production and the sharing of a goal (and not goals invented by the supervisor to construct artificial milestones for the student) somewhat evens out the power balance. Doctoral writers need to learn how to adopt an authoritative stance in a field of "expert others," and to assert their contribution to that field before they feel authoritative themselves (KAMLER, 2008, p.286). Co-authoring supports this process by lending power to the student; power that enables the student subsequently, or simultaneously, to work towards publishing alone and with peers. [41]

In general, our advice is that doctoral processes include interaction with a diverse range of people and with as many collaborators possible or as needed by the student. We find, that in the case of supervision, apprenticeship teaching is often practiced as "private" one-to-one interactions between the supervisor and the student (WALKER et al., 2008). GOLDE and WALKER (2006) argue that doctoral education programs should be structured to prepare students as "stewards of the discipline" —scholars who imaginatively generate new knowledge and critically conserve valuable ideas—but also transform such new understandings through

writing, teaching, application, and of course, publication. Students cannot do all this on their own or with the supervisor as the only source of inspiration. Doctoral programs and doctoral courses that encourage co-writing and, in general, collaboration with different partners are surely to be favored. [42]

The apprenticeship learning perspective sheds light on how the process of getting published is a way of gaining access and entering into the academic community. This is a process of both learning the craft and developing researcher identity. From this point onwards, co-writing is likely to yield a steep learning curve for the student, enhance the effectiveness of the time spent on supervision and produce a research article of high quality. It would be both interesting and instructive for future doctoral supervisors, students and doctoral program providers to produce and have access to more research that delves into the dynamics of co-writing. Data for such research could take the form of students and supervisors keeping diaries, interview studies or retrospectively reviewing published co-authored papers, in order to identify and analyze patterns of the student-supervisor interaction. [43]

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