A Study of the Issues in Technical Writing E-Collaboration and Methods to Enhance

Collaborative Cooperation with a Focus on Global Collaboration

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Abstract

Research on issues in technical writing e-collaboration is still in its early stages. While several studies touch upon various aspects of these issues, ranging from technical issues to psychological ones, few of them refer specifically to intercultural technical writing e-collaboration issues. In particular, of the few that refer to this topic, fewer still address how to resolve and/or prevent these issues. In this pilot study, I sought to discover what kinds of issues professional writers currently encounter in international e-collaboration and how these issues were dealt with. Through this, I found that while culture clashes were common, only one out of eleven participants had been provided with formal training on how to deal with these potential issues by his or her employer. Further research on this topic could potentially aid professional writers and the companies they work for to more effectively e-collaborate internationally.

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When collaborating with others on technical writing group projects, a commonplace phenomenon in the field, issues are bound to crop up due to any number of reasons ranging from personality clashes to technology to ill-defined expectations. These issues only become more complicated when the main method of collaboration is through technology. Throw in projects where not only are the group members not working in the same state but are not even in the same country and the numerous already complicated issues become even more complex as they get tangled up in the mire of potential culture clashes.

It is a well-established fact that people from different cultures behave and think differently. Hall (1976) says, "…the natural act of thinking is greatly modified by culture…" (p. 7). In other words, people grow up immersed in social systems, values, and attitudes often at odds with those of people from other cultures. This immersion affects how individuals think about things as well as how they interact with each other. Hall goes on to say:

> Culture is man's medium; there is not one aspect of human life that is not touched and altered by culture. This means personality, how people express themselves (including shows of emotion), the way they think, how they move, how problems are solved, how their cities are planned and laid out, how transportation systems function and are organized, as well as how economic and government systems are put together and function. (p. 14)

These cultural differences not only affect how individuals must interact with each other on a personal level but also how they must interact in a business setting. This becomes particularly relevant in a field like technical writing, where many of the projects are collaborative and increasingly international and e-collaborative in nature.

However, despite all of this, research into how those cultural differences affect technical writing e-collaboration is relatively undeveloped. Therefore, the goals of this pilot study is to first see what sort of research exists on the topic and then explore what avenues of further

research would most benefit technical communicators currently in positions where they either must work with others from foreign cultures or have clients coming from other cultural backgrounds.

<div align="center">Literature Review</div>

Although few studies directly touch on technical writing e-collaboration and fewer still with distinctly global issues, many concepts proposed in other fields like business and psychology easily apply to the issues surrounding technical writing e-collaboration.

Psychological Issues in General E-Collaboration

One of the main psychological issues in e-collaboration in general is the inability of people to see each other's physical cues. This becomes especially problematic when working remotely with people from varied cultural backgrounds because of the increased dependence on physical cues for determining intent. According to Konijin and Van Vugt, "…emotions play an important part in guiding behavior, revealing what is important for one's goals, and have social communicative functions, among others" (Konijin & Van Vugt, 2008, p. 100). They go on to say, "An individual's inner emotional state, or 'having an emotion,' may become apparent in three ways: subjective experiences, physiological responses, and behavioral expressions" (Konijin & Van Vugt, 2008, p. 107). Furthermore, they say, "…to communicate one's emotional state helps to shape the social interaction; to inform the observer of a person's motives for action and the emotional significance of certain events; to allow the observer to derive assumptions about a person's personality; and to form a consistent pattern of beliefs and behaviors" (Manstead et al, 1999; Smith & Scott, 1997 qtd. in Konijin & Van Vugt, 2008, p. 110). When technical writers work with each other virtually, they are incapable of seeing those physical cues.

Especially when individuals are unfamiliar with each other's culture, nonverbal communication becomes an important method for interpreting the behavior of group members who are not necessarily from the same culture. Bente, Krämer, and Eschenburg (2008) say, "…nonverbal channels account for socio-emotional variance in human interaction…reduced bandwidth in this respect can principally cause an increase in interpersonal communication" and that "Summarizing findings from different studies, Burgoon (1994) suggests that approximately 60-65 percent of social meanings is derived from nonverbal behavior" (p. 131; p. 135). In other words, using technologies which prevent the observation of nonverbal behavior can result in a reduced understanding of the social meanings of group member actions. This can go on to cause issues in collaboration as group members will have a reduced understanding of each other's intent. This is further complicated in international technical writing e-collaboration as many of the remaining verbal cues differ from culture to culture, increasing the chances of miscommunication.

General Issues in Virtual Teams

In addition to these culturally-enhanced issues, global technical writing e-collaborators encounter many of the same issues as those working solely with people from their own culture. Hinds and Bailey (2003) state that "Geographically distributed teams face a number of unique challenges, including being coached from a distance, coping with the cost and stress of frequent travel, and dealing with repeated delays" (Armstrong & Cole, 2002 qtd. in Hinds and Bailey, p. 615). Additional difficulties arise from a lack of a shared context, familiarity, friendships, and homogeneity, all of which tends to reduce conflict (Hinds & Bailey, 2003, p. 617). Hinds and Bailey also mention that "…issues of information transfer and coordination may have an equal, if not greater, bearing on group conflict" than the "relational outcomes of technology mediation

for distributed teams" (2003, p. 619). Teams with international members or international clients face increased difficulties due to the sorts of additional challenges such teams must endure, including differences in expectations, schedule coordination issues, etc.

Building on this, Rusman, van Bruggen, Sloep, and Koper (2010) state that the main issues in virtual teams are: 1) Unequal distribution in time for communication (sporadic at the start of the project and overload at the end), 2) the exchange of incomplete information, 3) infrequent and unequal "spread of interaction between team members…," 4) "…'flaming' (online name-calling), personal conflicts and enduring misunderstandings between group members," and 5) low overall group performance (p.835). All of these collaborative issues arise when the members of the members of a team do not trust each other; however, trust in virtual teams develops more slowly and is more delicate than face-to-face teams (p. 834-835). This trust develops even more slowly when group members have even less in common due to culture.

Successful E-Collaboration Practices

Extensive research exists on the qualities successful e-collaborative teams possess. Nunamaker, Reinig, and Briggs (2009) list nine principles they see as being essential for effective virtual teams: "…realigning reward structures for virtual teams" (p. 113), "…find new ways to focus attention on task" (p. 224), "…design activities that cause people to get to know each other" (p. 114), "…building a virtual presence" (p. 115), "…agree on standards and terminology" (p. 115), "…be more explicit" (p. 116), "…train teams to self-facilitate" (p. 116), and "…embed collaboration technology into everyday work" (p. 116). These principles could be applied to e-collaboration both in domestic e-collaboration and global.

In a similar vein, Larbi and Springfield focus on remote collaboration, in particular the qualities of a successful remote writer and the best practices for remote collaboration models.

According to Larbi and Springfield (2004), remote writers following best practices should "have systems in place to manage from the office, establish ground rules for behavior and communication, choose the correct media to communicate with each other, share leadership roles, and exercise discipline" (Larbi and Springfield, p. 106-107). These practices can reduce the amount of conflict within an e-collaborative setting as well as enhance the productivity of projects completed within the setting. Similarly, these practices can help mollify and prevent culture clash issues.

Further developing the topic of good practices in e-collaboration, Fisher and Bennion focus on communities of practice within the technical writing field and methods to enhance those communities of practice. They describe the common components of a community of practice as including, "[p]eople with a shared interest or problem, a means of communication, and conventions for collaboration and for capturing and transferring tacit knowledge and experience (Lave and Wenger, 1991)" (Fisher and Bennion, 2005, p. 278). Though Fisher and Bennion focus on in-person collaboration, they describe in great detail methods to enhance collaboration and strengthen communities of practice which could also be applied to e-collaboration, including mentoring, informally sharing ideas and information, and creating a cross-departmental group working on a specific goal (p. 279-280). They also include some useful tools for measuring the effectiveness of collaboration, including reviews and interviews, surveys, and e-collaboration analysis (Fisher and Bennion, 2005, p. 283). These tools could be used to not only monitor the effectiveness of e-collaboration but also detect any potential issues.

Traits of Successful E-Collaborators

Just as there are some practices that would enable technical writers to do a better job working e-collaboratively, there are some personality and background traits which greatly help

them e-collaborate, traits which could be further applied to successful international e-collaborators. In her 2004 article, Giammona focuses on the future of the field of technical writing through a series of interviews and surveys. She emphasizes that technical communicators are "becoming more than writers" (Giammona, 2004, p. 351). One of her interviewees states that the current key skills for technical communicators are to be quick learners, flexible, good researchers, tolerant of change, experienced in their industry, and good communicators" (Giammona, 2004, p. 354). Individuals with these personality and background traits would also be more capable of dealing with the sort of cultural differences and issues which crop up as a result of global e-collaboration.

Building on these traits, Olson and Olson (2000) divide their analysis of longer term, synchronous collaboration into three work settings: collocated, distance work today, and distance work in the future (2000, p. 142-143). In analyzing their data, the authors focus on four key concepts, including common ground, "dependencies of group work" (coupling), "collaboration readiness—the motivation for coworkers to collaborate," and "collaboration technology readiness—the current level of groupware assimilated by the team" (p. 144). Olson and Olson (2000) claim in their review of "over ten years of field and laboratory investigations of collocated and noncollocated synchronous group collaborations" that:

> Groups with high common ground and loosely coupled work, with readiness both for collaboration and collaboration technology, have a chance at succeeding with remote work. Deviations from each of these create strain on the relationships among teammates and require changes in the work or processes of collaboration to succeed. (p. 139)

In other words, group members with a lot in common who do not necessarily need to closely rely on each other in order to complete their work and who are already prepared for and used to collaboration and collaboration technology are more likely to succeed with e-collaboration than those who do not share these traits.

Solving Trust Issues

Thus far in my research, I have not encountered specific methods to solve cultural issues in technical writing e-collaboration. However, several studies proposed solutions to more general e-collaborative issues. In their study, Rusman, van Bruggen, Sloep, and Koper (2010) propose a "cognitive model for the formation of trust" in order to solve the lack of trust issue. This model has three parts, including input, cognitive process, and output (p. 837). Input is the signs and signals people base their impressions of each other on (p.838). The cognitive process includes information collection, "assessment of trustworthiness," and "…the assessment of the overall situation in which trust is required (influenced by mood and trust predisposition and by taking trustworthiness and context into account)…," "…trust state (a cognitive and emotional psychological state)…," and the trust decision (p. 838). Output includes trusting behavior, interaction, and the result (p. 838). This model could be applied in order to see what methods would be most useful in enhancing the level of trust between group members.

On the note of enhancing trust through re-inserting some sort of physical cues, Bente, Krämer, and Eschenburg (2008) say that, "Embodiment in the broadest sense can be defined as the existence and/or the visibility of humanlike physical properties that enable the transmission of nonverbal signals…Embodiment is a given fact in all face-to-face encounters but is absent in mediated communication" (p. 131). They go on to say that avatars or "virtual representatives of real human beings" are a way to insert embodiment into e-communication (p. 131). In their view, inserting embodiment would improve the quality of e-communication. In other words, by using some sort of avatar to represent physical behaviors and reactions, individuals would be better able to interpret their group members' reactions and intentions.

Resolving Conflict Issues

However, the ability of group members to deal with internal conflict could also have a significant impact on how well they deal with global e-collaboration. Montoya-Weiss, Massey, and Song (2001) studied how virtual teams manage conflict using Lotus Notes because they wanted to find out the "effects of temporal coordination on virtual teams supported by an asynchronous communication technology" in order to discover how effective virtual teams can be created (p. 1251). Montoya-Weiss, Massey, and Song (2001) define synchronous interaction as "an orderly process wherein verbal and nonverbal cues help regulate the flow of conversation, facilitate turn taking, provide immediate feedback, and convey subtle meanings" (p. 1252). The authors conclude that how virtual teams manage internal conflict greatly determines their success and that "temporal coordination has some significant moderating effects" (p. 1251). In other words, in order to be successful, virtual teams need to be able to negotiate through internal disputes, particularly through making sure at least part of the communication is synchronous. This becomes especially important when group members have a limited ability to physically meet each other, as in global e-collaborative situations.

Collaborative Methods

However, the method of collaboration should be tailored to the goals of that particular instance of collaboration. Mabrito (2006) found that students collaborated more in synchronous session than in asynchronous sessions (p. 97). However, while synchronous sessions generated more conversation topics, they did not include much follow-up or topic expansion (p.97-98). On the other hand, asynchronous sessions generated less conversation but participants went into far greater depth on the topics (p. 99). In summary, synchronous communication was good for team building and providing direction, but not so good for decision making while asynchronous communication was better for planning and revising texts with little attention spent toward

deciding group procedures (p.101). Mabrito also found that while students preferred synchronous communication, they acknowledged that asynchronous communication was more useful for their purposes (p. 104). While this study focused on an educational setting, much of it can be applied more broadly to a technical writing e-collaborative setting. In an actual workplace situation, for example, groups working on a collaborative technical writing project could distribute individual tasks and set up group goals via synchronous communication and comment on each other's drafts through asynchronous methods, thereby making sure any communication between group members was productive.

Further Theoretical Solutions

Focusing on more of a philosophical solution to enhancing e-collaboration, Brizee argues that stasis theory, a "four-question invention heuristic developed in ancient Greece and refined by Roman rhetoricians…" can "help improve teaming, critical thinking, and decision making" (p. 364). These four questions include conjecture, definition, quality, and policy, which analyze, respectively, the existence of an act, the definition of the act, the seriousness of the act, and if the act needs to "be submitted to some formal procedure" (Brizee, 2008, p. 370). This theory could be used to resolve both normal e-collaborative issues as well as global ones.

A Lack of Global Perspective

While many of these articles discuss the general issues in e-collaboration and methods to mediate them, they often either skirt the additional complexity of global collaboration or avoid it altogether. To be fair, many of the methods could be applied to global collaborative situations. However, different cultures have different standards for business behavior. One country's idea of proper business etiquette could be another's idea of rudeness; Olson and Olson (2000) noted such an instance when a group of Americans who were working with French and German

engineers via video conferencing cut the video feed as soon as the meeting was over in the interest of saving money without saying goodbye to one of the French engineers who was being forced to retire due to a misunderstanding (p. 172). When technical communicators must work with multinational teams, cultural issues come into play which must be addressed in order to enhance the quality and effectiveness of the collaboration.

A Lack of Research

However, further research would be needed to determine what the best ways to deal with cultural issues manifesting from global e-collaboration. As a general rule, while many sources within the field of technical writing deal with inherent differences in the actual texts from country to country, few sources address collaborative issues. Furthermore, in addition to relatively few sources directly addressing the issue of global collaboration, even fewer address potential training programs built specifically for technical writers to help them improve on their ability to work with either international group members or international clients. Such a training program would allow technical writers to be somewhat, if not necessarily completely, prepared to deal with the sorts of differences in perception, practice, etc. that become readily apparent when working with foreign cultures.

Methods

In order to gauge how technical writers currently in the field perceive global e-collaborative issues, I posted a survey on a technical writing forum board as part of a pilot study intended to gauge how current technical communicators deal with foreign cultures within their jobs. The survey questions covered the general kinds of e-collaboration issues technical writers faced in their everyday job as well as technical and cultural issues that arose specifically due to working with global teams. More specifically, the results of this survey were able to reveal some

already existing strategies for dealing with these issues as well as some potential new areas to explore in terms of developing improved solutions. It also revealed a general lack of preparation on the part of the technical writers and their employers in readying them to deal with foreign cultures.

After gaining Missouri State University IRB approval for the study, I posted a link to a Survey Monkey survey of ten questions in three different locations: the Society for Technical Communication LinkedIn page, a technical writing listserv, and technicalwritingworld.com. I chose these locations because they are frequented by active technical writers and therefore would yield more participants with relevant knowledge. By participating in the survey, the participants gave informed consent.

I chose to use Survey Monkey as my survey tool so that I could streamline my data collection and easily compare results. Survey Monkey allowed me to copy and paste a hyperlink leading directly to my questions into my postings.

I asked the following questions of my interviewees:

Background Information

1. What is your current job title?

2. What does your current job entail (in general)?

General E-Collaboration

3. How much of your job involve collaboration?

4. Of the time you spend collaborating, how much of it is spent e-collaborating?

5. What technologies do you use to e-collaborate?

Global Collaboration

6. As part of your job, do you collaborate with international teams?

7. What form does this collaboration usually take?

8. What issues come up due to cultural differences?

9. How do you handle these issues?

10. What do you think would have been useful knowing before you had to handle these issues?

Results

Due to the limited time frame, the results were somewhat inconclusive. After a period of roughly two weeks, eleven people responded. Their answers varied quite a bit as did their job titles; however, some patterns did emerge. Most of the participants had "technical writer" in their job title in some fashion and focused mainly on developing documents, writing, editing, or interacting with customers. The actual amount of collaboration their jobs involved varies widely. Every participant used email as an e-collaboration method, several of them using web conferencing software or teleconferencing. Several of them also used some sort of web document sharing software like Microsoft Office Communicator or SharePoint as well as IM. A couple of them also used wikis to collaborate. However, all but one used multiple technologies for their collaborative methods.

Nine out of eleven participants had some sort of global e-collaboration as a part of their jobs. The extent to which this collaboration extended varies from participant to participant, ranging from occasional interactions with international customers to working with international work groups. However, most of the technologies used in their global e-collaboration were the same as for the domestic variety.

Cultural Differences

When asked about what issues came up in their jobs due to cultural differences, their answers varied widely. Two out of eleven participants cited time zone differences as the biggest issue while another three cited differences in terminology, colloquial language, and tone. However, six out of eleven listed cultural attitude differences to be the biggest issue. Issues cropped up in terms of project expectations, with the Americans interpreting the deadline to be the precise due date and the international group interpreting it in a different way altogether. One participant stated that, "Perceptions over deadlines are especially tricky, as are difficulties with scheduling among existing work. International customers typically want immediate results." This difference in perception can extend into even the level of formality with which group members and clients treat each other.

Dealing with Cultural Issues

Upon being asked about how they handled cultural issues, several of the participants recommended being more explicit when communicating with groups in other cultures, particularly with deadlines, meeting dates, and expectations. One recommended arranging meetings "ahead of time, and within a SME's time zone" and to use "the technologies that are in place. For those who are in ESL, sometimes it is better to work through email, as they might be able to write rather than tell you in person over the phone." Another participant commented that "My email style is more formal when working with Indians. I ask more specific questions to make sure I have all of the information I need." Yet another participant noted that his or her company "…provided a formal training class for working with Indian colleagues…," something he or she found very helpful. Otherwise, the participants recommended being careful when dealing with cultural issues and to "accommodate customer needs and my employer's needs in compliance with laws, policies, [standards], and management direction."

Helpful Practices and Preparation

When asked about what would have been helpful to know before dealing with cultural issues, the participants mentioned detailed expectations, cultural issues, and the results of their cultural business interaction training. In other words, when handling intercultural collaborative issues, being as specific as possible in detailing expectations is very useful as well as having a grasp of the culture with which one will work. Many of the comments focused on the difficulties in establishing and communicating project expectations, either between writers and clients or members of the group. Additionally, many of the participants experienced issues as a direct result of cultural differences, differences which were not easily coped with and appeared shocking and perplexing to the participants. However, many of these issues could be dealt with via detailed planning and research into the complex cultural nuances of the culture in question.

Particularly interesting to me was that only one person mentioned having gone through a formalized training procedure on the topic through their employer. By acknowledging that distinct differences exist between cultures through setting up a formalized training program for employees, businesses could avoid many of the culturally-inspired issues that crop up from working with people from different cultures. However, insofar as I can tell from this pilot study, businesses do not typically have such programs.

Limitations of the Survey

As a result of the small size of the sample, the results of this survey were by no means representative of the entirety of the field of technical writing. Also, as a result of using surveymonkey.com, the responders typically responded in answers ranging from one word to one brief sentence, limiting the amount of data gathered from their responses. That said, however, the

sample was large enough to get a glimpse into how the field views cultural issues in technical writing e-collaboration.

In future studies, I will gather a much larger sample to analyze. I would do this through directly sending the survey to technical writing organizations and employers as well as directly seeking out people working within the industry and interviewing them individually. This would allow for a much larger and representative sample as well as possibly more thorough responses. In such a future study, I will focus particularly on what kinds of training technical communicators receive through their workplace on how to write for and interact with individuals from different cultures.

Conclusions

While technical writing e-collaborative issues have already been extensively studied, fewer studies have focused on the sort of issues which develop as a result of working remotely with either international teammates or international clients specifically in the field of technical writing. Of those studies which address these issues, many of them refer to the localization of written texts or other product-based issues and processes. While those topics are no doubt of great importance to those working with international groups, they do little to propose potential solutions to the issues which arise from working in such situations.

According to my pilot study, many of the issues the participants experienced had either to do with a mismatch of business culture expectations or technological or temporal issues such as coordinating schedules and the like. While the latter set of issues could be resolved largely using traditional e-collaboration strategies, the clash of cultural expectations is more complicated. Hall states that people operate under the implicit assumption that all other cultures think and behave the way their culture does; only having had exposure to other cultures and observing other

individuals struggle with adjusting to foreign cultural nuances did he himself become aware that there were different cultural systems (1976, p. 39). In other words, without either some sort of training to give people that awareness or having some sort of intercultural exposure, technical writers would most likely not be properly equipped to smoothly deal with the sorts of issues that arise through culture clashes. Technical writers working with global e-collaborative teams need to first become aware of the root of the culture clashes before they would be able to properly deal with them in order to carry on with their projects.

Areas for Future Study

Some potential areas of study which will be explored in future research include discovering which technical communicator employer-provided training programs exist and evaluating their level of effectiveness in heading off or resolving some of the business-related cultural issues. Also, after evaluating what programs do exist, developing a set of qualities which define an effective international technical writing e-collaboration training program would aid the development of potential training programs tailored to help technical communicators learn how to effectively e-collaborate with those from other cultures.

Due to the presumed impracticality of trying to tailor such programs to deal with all cultures, ideally, these training programs would be individualized for individual companies, dealing only with those countries the specific company deals with. For example, as was the case for one study participant, the company provided a training program dealing specifically with India. This would allow the technical communicators to avoid the majority of the pitfalls commonly associated with international e-collaboration without being bogged down with trying to learn too many cultural nuances at once. These training programs would likely save companies and organizations both time and money and allow technical communicators to focus

more on their projects with fewer culture-clash inspired issues. At this time, however, this topic

has yet to be fully explored.

Appendix A: Study Questionnaire

Background Information

1. What is your current job title?

2. What does your current job entail (in general)?

General E-Collaboration

3. How much of your job involve collaboration?

4. Of the time you spend collaborating, how much of it is spent e-collaborating?

5. What technologies do you use to e-collaborate?

Global Collaboration

6. As part of your job, do you collaborate with international teams?

7. What form does this collaboration usually take?

8. What issues come up due to cultural differences?

9. How do you handle these issues?

10. What do you think would have been useful knowing before you had to handle these issues?

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