Part 1 Coding

ANALYSIS CODES

Code / Short Description / Long Description

1. TB / Any mention of tech benefits / Any observation or mention of affordances of technology
2. FR / Any mention of frustrations / Any observation or mention of some individual showing frustration at the task at hand
3. CO / Any mention of collaboration / Any observation or mention of collaboration
4. LM Learning moment / Any observation or mention of some time frame that is perfect for some specific type of learning
5. PR Evidence of Preparation / Any observation or mention of prior preparation for the current task at hand
6. EJ / Evidence of enjoyment / Any observation or mention of the user liking, loving, or enjoying the overall experience
7. UA / Evidence of usability / Any observation or mention of usability (human computer interface) issues
8. IW / Reflects individual work / Any observation or mention of individual work or working individually in the collaborative environment
9. TC / Evidence of taking control / Any observation or mention of some individual taking control of the task at hand
10. GC / Evidence of giving up control / Any observation or mention of some individual giving up control of the task at hand to another entity
11. TFAIL / Technology failures / Any observation or mention of technology failures or technology not serving the intended purpose

12. AWAY / Stepping away from the technology / Any observation or mention of deliberate movement away from technology or use of non-technology objects even when the technology is available for the same function

13. IS / Inconsistent statements / Any observation or mention of statements that ran contrary to something said by the same person before

14. DISPK / Display of knowledge / Any observation or mention of being able to do something that requires specific knowledge that is not common to the general population

15. BORE / Evidence of boredom / Any observation or mention of being bored of doing some task

16. DISTRACT / Evidence of distraction / Any observation or mention of sudden and temporary change in task of the moment due to some internal or external stimulus
David: Ok.

[TB] DK: And it has some features that was, that you don’t have when you work together at a place other than TS.

David: I see.

[TB] DK: So it is very useful.

David: So, so, would you do it again?

DK: Oh ya sure.

David: Like a training session…

DK: Ya sure.

David: …this morning.

David: Ok, that’s good, hmm, have you done something similar before. Like, ah, the training session. Have you done something similar before?

DK: No. Training session meaning using TS?

David: Ya, like what you went through this morning using TS.

[PR] DK: No, no.

David: Ok, hmm, so did you find the tool easy to use?

[UA, FR, TB, TFAIL] DK: Yes it is. Initially the installation and the joining part is not, is something which is cumbersome. But once you join TS then it is useful, easy to use.

David: So, hmm, if you are going to use two words to describe the learning experience this morning, what two words would you use, and why?

[TB, CO] DK: Hmm, I’ll say, useful and collaborative.

David: Useful and collaborative. Can you explain, how, how come you picked the words useful and collaborative.
David: In what ways?

[IS, TB, CO] DK: Ah, not much in terms of learning, but its in terms of collaboration and ah, saving of effort. And ah, it’s not very cumbersome like, uh, three or four people working on the same document, they have to look at the laptop, so it is very inconvenient.

David: I see. So who did you think, ah. I know that there was three people here working, ah, on this problem. Hmm, so who did you think took the leading role or the teacher role of uh this training session?

DK: Nobody was the teacher, actually. Because there are three people on the team, and everybody was like, peers. So there’s no teacher.

David: Did you feel that like there was, like, some type of role that’s being developed or?

[IS] DK: Ah, well, when SO was leading the discussion, he was instructing ah us over drag the document and over editing, but, SO was […] leading the team.

David: How, how did you feel about that? That, that someone took the, like, in the beginning you said there’s peers, and then later, people developed into these roles. How do you feel about that?

[UA, TC, GC, DISPK, TFAIL] DK: Actually, um, when three people work simultaneously, then the system, I mean, three cursors are there on one document. So who is editing the document, who is moving the document it’s not clear. And ah, the cursor also started shaking. So it’s better that one person moves his cursor, one person edit at a time.

David: So who was the person moving the cursor? Was it, was it the person that is leading the discussion or…
[GC, UA] DK: Yes. So it doesn’t happen always. Sometimes all three of us are moving our cursors, then, you see that we can’t do anything. Then everybody stops, then one person starts again.

David: So, if in the beginning it wasn’t this structure of being peers, it actually, you were given the role of planning for this training session. Ok, if you were, sorry, this role, what changes would you make, in terms of structure of, of the session, or the teaching method, or…

[UA, FR, DISPK] DK: Ah, when we join TS, the first time we join, we needed to enter the name of TS, the very first time. So, it was difficult to enter the, spelling mistake, so it doesn’t allow you to join. So you have find that there is one paper there, so you will need to find this and this. And you have to refer to this and find the name of the TS. You have to enter exactly the same name. So, instead of this name, there is a drop down box, and you just select “my library”, you join. This is one issue with the software. And, ah, the system, there are two screen but you are not allowed to drag document from one screen to the next. So you can drag the document from the laptop to the screen and back, but you cannot drag the document between two screens. And ah, what is the question?

David: Pertaining more to the learning experience…

DK: Ok.

David: …would you design the whole session differentl.

Wuping: I think… [Whispers].

[TFAIL] DK: Different? [Pause]. Ah, [Pause], I don’t think so. I think […] smoothly in terms of learning experience. The only issue was that of the system, of the software.
Part 2 Analytic Memo

**RESEARCH QUESTION:**

*What are some special aspects of the learning to use TS?*

*(TS is a collaborative software system)*

The motivation for the research question is that we wish to understand if the learning curve for TS is too high, such that it contributes to the minimal usage of TS.

**RESEARCH METHODS:**

The data gathering process revolves around two observations and two interviews.

*Observation 1:* Prior to formalizing our research question, we have contemplated the question “For the students who know about TS, why are they not using it?” In response to that research question, we sat in one of the TS sites, which is in a lobby of a library. We sat a distance away from the actual TS space, and observed all movements in and around the TS space. The general finding from that observation was that no one entered the TS space and only looked out of casual curiosity, never really stopping to investigate the space.

*Observation 2:* Because there were no subjects to observe, we changed our research question to the “learning experience.” As it happens, three TS interns were getting together to investigate the functions of TS, with the goal of doing a project related to their internship using TS, and also to learn about TS. Two of the interns were our classmates, while the last was one of us, a participant observer. During the observation, we tried to be as passive as possible, so as to minimize the tainting of data.
Interview 1: After the observation 2, we interviewed one of the TS interns. The line of interviewing was centered on the experience, particularly with “learning” in mind. There were also hypothetical questions dealing with how he would structure the learning experience differently.

Interview 2: A week after the first interview, we got together with the same TS intern again to ask about what he remembered from the experience a week ago. The rationale of the interview was that now the interviewee had more time to think about the experience, we wanted to know if his feelings or perceptions changed.

The analysis was conducted in group: first looking over the field notes and the interview transcripts, coming up with relevant codes for the data as a group, coding the data, and looking at the coded data as a group to come up with propositions. The propositions are then evaluated in terms of the research question, whether it helps to answer the question or not. Additionally, the data are re-clustered according to codes to see whether or not the propositions are truly supported. Lastly, the proposition generation process is iterated to generate a better set of propositions, along side with focusing (restructuring) of the research question.

ADDRESSING VALIDITY:

Validity of our research findings are based on triangulation: both data triangulation and investigator triangulation. For data triangulation, because we have both observational and interview data, we can assess whether our interpretations of the observations are inline with what
the person being observed thinks and whether or not the interviewer’s statements are inline with observations. For investigator triangulation, we have the privilege of three observations, one of us being a participant observer. Additionally, we try our best to use low inference descriptors, supplying as much inline verbatim quotes as possible with our analysis, which addresses some of the inference issues by allowing the readers to determine for themselves whether or not our inferences are justified.

**PROPOSITIONS**

1. *Social Protocol, the knowledge of when to take control and when to give up control when multiple teammates are accessing the same computer, is part of the learning experience*

Although we did not expect this, but the TS learning experience is unique in that it involves learning about how to socially interact with other people. The following data supports this proposition:

*Interview 1* DK first noted that “Actually, um, when three people work simultaneously… three cursors are there on one document… So it’s better that one person moves his cursor, one person edit at a time.”

*Interview 2* DK on the second interview continue to remark that “So it requires, hmm, some… social protocol… There should be an understanding that in a team only a member at one time to move the cursor.”

*Observation 2* Although DK noted that there needs to have Social Protocol, this was not prior knowledge, but instead came during the session. Particularly, at 9:44am, WP and DK were working on the LCD screen. WP remarked that “You took my control, man.” He then went on to give the following comments: “I don’t like this feature” and “I should
be able to refuse.” DK responded by saying “We are working together, so you can’t refuse.”

Overall, this suggest that the learning curve for TS might be too high in that there are hidden learning (ie. learning about Social Protocol) that must occur along-side with the visible learning (ie. learning about the software). The hidden learning might be difficult for some users, because the very nature of hidden learning is the lack of defined learning target and therefore lack of attention paid toward this particular learning. This then might detract from an otherwise good experience of using TS.

2. **Team member’s prior general computer knowledge help facilitate the learning process of the group as a whole**

There are rich evidences in the observation that team member’s prior general computer knowledge (not necessarily the knowledge of TS) facilitates the learning process of the group as whole. One of the TS interns has computer science background and seems very knowledge about computer systems in general. During the learning process, he offered help to his team members several times. The followings are field notes that support this proposition.

*(Observation 2)* Around 9:12 am, after having downloaded the software, he (WP) had to add TS into his list, but with a problem. SO left his seat and offered help.

*(Observation 2)* Around 9:24, after WP successfully finished the configuration, he met another problem. He needed a code automatically generated by the public desktop (server side) to join the ongoing session. However, the server failed in generating one. Leader (SO) left his seat, went to the server, and then unplugged and re-plugged in something there. Then the session code appeared. By entering the code, WP joined the session.
(Observation 2) Around 9:25, DK was still struggling with the mouse control problem. SO suggested DK disconnect his laptop from the ongoing session and then reconnect to it to solve the problem. DK did so and the problem was fixed.

As the field notes pointed out, there are several potential stop points (due to technical problems) in the learning experience. However, the problems can be alleviated by having someone with general computer knowledge, not requiring specific TS knowledge (i.e., unplugging and plugging devices is representative of general computer knowledge, vs. trying to solve the problem within the TS software). Overall, if taken from another direct, what this means for the learning curve is that without general computer knowledge, the user will have a difficult time learning TS, especially in light of the vast amount of technical problems that it presents to the user (there are numerous instances of technical failures as noted in the observations). This then suggest the importance of prior knowledge, which is not negligible.

ASSUMPTIONS AND BIASES:

Our motivation for this research is to understanding why TS is not being used by students. Further, we assume that a major contributor is the difficulty in learning TS. Therefore, our focus is on the distractions to the learning experience. However, this assumption might not be true in that perhaps there are other reasons for the lack of use besides the learning. Our bias, being students in the School of Education and being very much critical of all learning experiences (the critical-I), might lead us to be too narrowly focused on the negatives of the learning experience. At one point, our interviewee said that the software is easy to learn. We take that statement lightly, still focused on the numerous observed difficulties of learning to use TS. Perhaps that is another research question, why the discrepancy between observations and user perception?
Introducing Qualitative Research

What is qualitative research? How do I design a qualitative research? How do I conduct a qualitative research? Although I had never seriously thought about them before I took this course, I did have some ideas about these questions. But, they were very intuitive in nature. In a sense, they were just guesses (maybe educated guesses). The first thing in my mind was that the qualitative research was different from quantitative research in a way that it did not use numbers to explain the phenomenon. The second thing in my mind was that qualitative research was something related to interviews and observations. In terms of how to design and conduct a qualitative research, it should follow the same (similar) procedure as quantitative research: formulating the research question, choosing and designing the methodology, selecting subjects, implementing the research, collecting and analyzing data, and writing the report and presenting the findings, but in a different way. Beyond that, I really knew very little about qualitative research.

From my own experience, I do not think this course has changed my views on qualitative research, because essentially I had never seriously and explicitly thought about qualitative research issues before this course. It is more appropriate to say that I have learned a lot of what I did not know before rather than I have corrected what I misunderstood. So the learning process for me is more like being trained as a student researcher from scratch – a process guided by the instructor and TA and also my metacognition. The learning consists of continuous sections. In each section, I learned a chunk of knowledge. Now it is the time to see the big picture. Next, I would like to present what I gained from this course, how they are connected to each other, and also what I am still uncertain or doubt about, in the context of the research I conducted for this course.

What is Qualitative Research?

Qualitative research is to understand how people experience and interact with their social world, the meaning people have constructed about their world and their experience, and how larger contextual factors affect the ways in which individuals construct reality (Merriam, 2002). A specific research may study one of these aspects or combination of them. Obviously, these three aspects are different. What I am still uncertain or unclear is how to distinguish among these three aspects: are they exclusive from each other or do they overlap? In my point of view, they are somehow overlapping. For our research conducted for this course, we focused on the how people experience and interact with TeamSpot when they use TeamSpot for the first time, but may have also slightly touched the last two aspects.

How to Design and Conduct a Qualitative Research?

Formulate a research question:
To conduct a qualitative research, the first step is to formulate a research question. A research study begins with being curious about something which is usually related to our work, family, and community. A research problem can also come from social and political issues from the literature. Often these spheres intersect. Then, we have to translate the general curiosity into problem that can be addressed through research.

Our research question for this course comes from the internship I am doing with TeamSpot – a collaborative learning space at Stanford. We are curious about why few people use TeamSpot and what users’ experience when interacting with TeamSpot is. Initially, we formulated the research question as “Why people who know TeamSpot do not use TeamSpot. Soon, we found that the research question might not be addressed through a typical qualitative research. First, we needed to identify people who know TeamSpot do not use TeamSpot. If nobody knows TeamSpot, the research question is not researchable. Even if there are people who know TeamSpot do not use TeamSpot, we just need to ask them a few questions, no need to conduct observations. In short, this research question is not a question which will necessarily guarantee a typical qualitative research. However, we could ask people who did not use TeamSpot before to use TeamSpot to do real work, and then find out their experience when interacting with TeamSpot by observing and interviewing them. Therefore, we abandoned the initial study and developed a new research question “What’s the first-time users’ learning experience when using TeamSpot to do the real work.” (my teammate might phrase the question in different ways)

Lesson learned: formulating a right research question is the first and important step for a given research study. The research question should be a question which can be addressed by a qualitative research.

Select the Site and Subjects

After having formulated the right research question, the selection of the site and subjects is straightforward. Since qualitative inquiry seeks to understand the meaning of a phenomenon from the perspectives of the participants, it is important to select a sample from which the most can be learned (Merriam, 2002). In our case, obviously, the site is TeamSpot in the first floor of Meyer Library which is accessible to everybody; the subjects are there LDT students who had never used TeamSpot before and would learn to use TeamSpot to do a real job, which we believe fit the research question well.

Data Collection

a. Collection methods

The data collection strategy used is determined by the question of the study and by determining which source(s) of data will yield the best information of with which to answer the question (Merriam, 2002). Often there is a primary method of collecting data with support from another. If at all possible, researchers are encouraged to use more than one method of data collection as multiple methods enhance the validity of the findings (Merriam, 2002). These guidelines are pretty obvious. There are three high-level data collection methods or categories: observations,
interviews, and documents. Under each category, there are sub-categories. For example, there are structured, semistructured, unstructured interviews.

For a given study, one of the key points is, I believe, how to reliably determine which source(s) of data will yield the best information to answer the research question. In my point of view, one solution to this problem is gaining more experience. More you learn about the given research area and more research you have done, more you will be competent to determine which source(s) of data will yield the best information. Another solution is to learn from others – to see how others select the data collection methods for similar studies, especially those high-quality studies.

b. What to observe and to ask about

After having determined the data collection methods – in our case, participant observation and structured interview – the next logical step is to determine what to observe and what questions to ask. Obviously, we should observe and ask what can answer our research question, but how? This question introduces another key point for a given study: do the data collected really address and answer what I want to find out – the validity issue. Here, the foregoing solutions to the first key point still apply – gaining more experience and learn from others. It is unlikely that the capacity of observing right things and asking right questions can be achieved in a ten-week introduction class (at least, it is true for me). It is a long-term experience accumulation. I believe this is one of the most difficult things to learn for a novice qualitative researcher. For our research, we did have a list of things to observe and ask. However, I am still not confident whether they really aligned with what we wanted to find out. As I said, it is long-term accumulation; I need more experience to be capable to do that.

c. How to observe and interview

After having determined the data collection methods (assuming observation and interview) and the right things to observe and the right questions to ask, collecting the data in the field, although demanding skills, is straightforward and relatively easy to learn. In other words, these skills can be gained in short-term. The followings are key data collecting guidelines and techniques which I learned from this course and perceived as important:

Observation: putting informants at ease; informing confidentiality; establishing rapport but avoiding over-rapport or going native; avoiding acting and talking in ways that do not fit our own personality; avoiding any participation that interferes with the researcher’s ability to collect data; asking right question at right time in right way; encouraging informants to say more about what we are interested once informants start talking; asking for clarification of informants’ remarks; recording complete and detailed field notes as precisely as possible; including comments to the field notes; and video-taping the observation if it does not disrupt the natural flow of events (Taylor & Bogdan, 1998).

Interview: respect for the culture under study; respect for the person; establishing rapport; being natural; place the interviewee at ease; letting the participant think about the question and digest it for a while before responding (Fetterman, 1992); making question easy to understand, avoiding dichotomous (yes/no) questions, vague questions, and leading questions, using hypothetical or
presupposition questions and advice questions, and adding new question or replacing the pre-established ones when questions emerge in the course of interviewing (Glesne & Peshkin, 1992).

For novice researchers, these guidelines and techniques seem very overwhelming at first glance. It is true that novice researchers cannot apply all these guidelines and techniques effectively and wisely just after one or two research practices. In our research case, as a novice researcher, I paid most of my attention on taking notes as completely as possible, less attention on other aspects, due to the limited preparation time. However, I don’t think learning them is intellectually challenging. Mastering them is just matter of time. Apply these guidelines and techniques consciously whenever you are conducting a qualitative research and then you will master them quickly.

**Data Analysis**

The most difficult aspect of qualitative research is how to analyze data gathered through qualitative research methods presented earlier, because “it is not fundamentally a mechanical or technical process; it is a process of inductive reasoning, thinking, and theorizing (Taylor & Bogdan, 1998).” The followings are the data analysis steps and techniques I gained from this course:

**a. Discovery**

Read data, record any important idea, and look for emerging themes or patterns. Some patterns will stand out in the data. Others will not be so apparent. We have to look for deeper meanings. Construct typologies or classification schemes to make conceptual linkages between seemingly different phenomena and to help in identifying themes and developing concepts and theory. Develop concepts by looking for words and phrases in informants’ own vocabularies, the concept that unites statements and acts which are under a theme, and underlying similarities among different themes. By studying themes, constructing typologies, and relating different pieces of data to each other by developing concepts, we can gradually come up with theoretical propositions. Align with theoretical framework(s) from literature, if there is (are) one(s) relevant to the current study, to make sense of data. Develop charts, diagrams, and figures to highlight patterns in the data if they are helpful. The final step in the stage of discovery is to write analytic memos which summarize all of the major findings or comment on specific aspects. Meanwhile, think about what additional data we want to collect.

**b. Coding**

Coding refers to bringing together and analyzing all the data bearing on major themes, ideas, concepts, interpretations, and propositions. First, develop a story line to guide theorizing and analysis. In our case, the story line is “the first users’ learning experience when learning how to use TeamSpot to do group work.” The coding was organized along this story line. Then, list all major themes, typologies, concepts, and propositions and see how they relate to the story line. Collapse themes which overlap or relate conceptually and ignore those which do not relate to the story line. After that, we will have a master list of coding categories. Some examples of coding categories in our study are frustrations, collaboration, learning moment, preparation, enjoyment,
usability, boredom, distraction, etc. Then assign a symbol or number to each coding category, go through all filed notes, transcripts, and documents indicating which data fit under which coding categories. When coding, we may need to refine the coding scheme and the process might be iterative until the codes fit the data. Assemble all the data coded according to each category, compare and analyze together all data relevant to a theme, concept, or proposition, and then gradually move from quotes and observations to analytic propositions and/or discard concepts or ideas that will not fit the data and some propositions that will not hold up, and develop new ones to accommodate the data.

c. Discounting data

Discounting refers to interpreting data in the context in which they were collected. When interpreting the data, we should take into account the factors such as solicited or unsolicited statements, the researchers and other people’s role in a setting, direct and indirect data, the sources of the data, and the researchers’ own perspective (Taylor & Bogdan, 1998). We should clearly indicate the possible effects brought about by these issues.

Qualitative data analysis is an intuitive and inductive process. The capacity of inductive analysis cannot be easily trained. It comes with experience. In my opinion, the best way to learn inductive analysis is by reading (high-quality) qualitative studies and articles to see how other researchers have made sense out of their data.

Other Issues

Ethics

At beginning of the research, we, as researchers, need to clearly and explicitly emphasize confidentiality for the research findings and try to completely dispel subjects’ fear of disclosure of identity. But we should not tell them the details of the research. People tend to present their good face to others when they know what the research is going to find out in details. To interpret the data, we have to try our best not to reshape and sculpt the subjects’ words, “allowing my own words and ideas to permeate – and, perhaps, to alter – the text” (Altork, 1998). But, it may happen, as Altork did in her research (Altok, 1998). I think Altok did appropriately. If I were her I had done same thing: tell the truth and check with the subject. Therefore, before we present the final findings in public, we should present the findings first to the subjects and ask for their comments so that we may avoid wrong interpretations such as ones in Altok’s research. It is very possible that they will disagree with part of or the whole findings as the subjects did in Page, Samson, and Crockett (2000)’s research. If this is case, we need to be cautious. People always want their positive side to be presented in front of others and therefore they may lie. My point is that using our professional judgments to evaluate their comments. If their comments justifiable, modify our findings. If not, insist on our opinion but try not to hurt their feeling. For our research, I personally asked for comments on findings from our subjects and clarified some misunderstandings. For our research, whether the subjects want their positive sides to be presented in front of others is not an issue, because they perceived that presenting the findings would affect nothing associated with them.
Validity

Although the basic epistemological and ontological assumptions of quantitative and qualitative research are incompatible (Johnson, 1997), the concepts of validity should not be abandoned, but be applied in a different way. There are five types of validity in qualitative research (Johnson, 1997). Their definitions, strategy to obtain them, and application in our research are listed below:

<table>
<thead>
<tr>
<th>Type of Validity</th>
<th>Strategy to Obtain</th>
<th>Application in our Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Descriptive Validity: factual accuracy of the account as reported by the researchers</td>
<td>Investigator Triangulation: the use of multiple observers to record the data</td>
<td>Yes, we did. Three observers and cross-checking of observations</td>
</tr>
<tr>
<td>Interpretive Validity: to accurately portraying the meaning attached by participants to what is being studied by the researcher.</td>
<td>Participant Feedback</td>
<td>Yes, we asked for comments.</td>
</tr>
<tr>
<td></td>
<td>Using low inference descriptors</td>
<td>Yes, we used verbatim</td>
</tr>
<tr>
<td>Theoretical Validity: the degree to which a theoretical explanation developed from a research study fits the data and, therefore, is credible and defensible.</td>
<td>Extended Fieldwork</td>
<td>Yes, two interviews</td>
</tr>
<tr>
<td></td>
<td>Theory Triangulation: explained by different theories.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Investigator Triangulation</td>
<td>Yes, three researchers</td>
</tr>
<tr>
<td></td>
<td>Pattern Matching</td>
<td>Not sure</td>
</tr>
<tr>
<td></td>
<td>Negative Case Sampling</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Peer Review</td>
<td>Yes, in class</td>
</tr>
<tr>
<td></td>
<td>Methods Triangulation: types of research and types of data collection</td>
<td>May not be applicable, because we are not looking for cause-effect relationship</td>
</tr>
<tr>
<td></td>
<td>Data Triangulation: multiple data sources using a single method; collecting data at different times, at different places, with different people.</td>
<td></td>
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<tr>
<td>Internal Validity: the degree to which a researcher is justified in concluding that an observed relationship is causal.</td>
<td>All above</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Replication Logic: the more times a research findings is shown to be true with different sets of people, the more confidence we can place in the finding and in the conclusion that the finding generalizes beyond the people in the original research study.</td>
<td>Not yet, may replicate the research at another TeamSpot at Toyon Residency Hall with different users.</td>
</tr>
<tr>
<td>External Validity: to what degree a set of research findings can be generalized to other people, settings, and times.</td>
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Reporting and Disseminating Results

After designing a study that address some problem arising from practice, collecting and analyzing data relevant to the study, and interpreting the results, the next logic step is to report and disseminate results. A research report can take many forms (Merriam, 1998); I personally prefer the written form. My writing process is listed below:

1. Assembling the case record: assemble all the relevant study data organized in a chronological form with extraneous material sorted out.
2. Determining the Audience: internship supervisors and their interest is the study can inform
the current decision of learning programs which can effectively facilitate the users’ learning
when they learn to use TeamSpot to do group work.
3. Selecting a focus:
4. Outlining the Report
   a. Purpose of the study
   b. Methodology
   c. Presentation of the data
   d. Conclusions and recommendations
5. Beginning to Write

Summary

The learning is very productive. From what I presented above, you have seen my growth as
student researcher. I hope we could have had more time for this course.

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