Patterns for Supervising Thesis Projects

Till Schümmer
FernUniversität Hagen, Germany
Universitätsstr. 1
D-58084 Hagen
+49.2331 987 4371
till.schuemmer@fernuni-hagen.de

Axel Schmolitzky
University of Hamburg, Germany
Vogt-Kœlln-Str. 30
D-22527 Hamburg
+49.40.42883 2302
schmolitzky@acm.org

Abstract: Thesis projects are a challenging task for students as well as their supervisors. Students have in most cases not managed such a large project before. Many supervisors are good researchers but have not yet received training in didactics and project management. This means that students as well as supervisors often lack best practice in managing the thesis project. This paper fills this gap by providing a set of best practices for the supervisor that may help to better structure and focus the collaboration between student and supervisor so that the thesis runs smoothly towards success.

Note to the shepherd: The paper still has several open sections. We plan to complete these within the next weeks.

1. Introduction

The following patterns describe best practices for supervisors of students’ theses projects. Students have to write such a thesis at the end of their bachelor, masters, or diploma programme. These projects are typically long-term interactions between the supervisor and the student that last between 3 and 12 months, sometimes even longer.

Typically, after applying for a topic, the students can take some time to familiarize with the topic and prepare for the official work on their thesis. They use this time to reach a good understanding of their subject and create a realistic plan for the practical and theoretical work. Quite often this time precedes the official processing time of the thesis.

One common problem is that the students are not co-located with their supervisor. Even in cases, where the students participate in a research group, the full time researchers often do not find the time to interact with the student all the time. Many students in addition have a half-time or even full-time job so that the thesis work has to take place in the evenings or at weekends. This is especially the case at distance teaching universities like the FernUniversitaet in Hagen. Thesis projects are thus typically taking place in a blended learning setting. Colocated synchronous phases of interaction interleave with phases where students works at home, following their individual schedules and preferences for the work setting. Unfortunately, the freedom of working
independently of the supervisor can lead to phases where the thesis moves out
of the student's focus. Often, private matters or a high work load at the student’s
workplace causes the student to quit the work on the thesis before he or she
has actually started the official part of the project. To our experience, a closer
interaction between supervisor and student starting at the day of the first
encounter helps to reduce the number of drop outs and maintains the student’s
focus on the thesis.

The patterns of this pattern language guide supervisors in such a close
interaction. We started to write down these patterns for several reasons:

- After several years of experience in supervising students during their final
  thesis, certain patterns were becoming too obvious for us to be ignored.
- Some best practices we apply today would have saved us a lot of time in our
  early years as supervisors if we had been aware of them or been able to use
  them. And we regretfully notice that novice colleagues tend to make the
  same mistakes as we did in our first supervised thesis projects.
- Some books on the subject, such as [Deininger et al.], give good advice, but
do not cater for new developments such as agile methodologies. As many
  student’s thesis projects are more similar to an expedition than to
  manufacturing a product, agile practices helped us a lot in improving the
  process of thesis projects.
- The integration of supporting computer technology (such as wikis, email,
  repositories) into the supervising process further changed and improved the
  processes for us. We are not aware of any literature that captures how
  technology support interrelates with the social practices of thesis
  supervision.
- Initially, we thought that there should be patterns on this subject already.
  However, we were not able to spot articles in this area.
- Finally, we think that a compact description in pattern form has more
  potential to be widely noticed than any book on the subject, even if it is as
  concise as [3].

Even though these patterns are targeted at thesis supervisors, we experienced
that these patterns can also help the students working on their final thesis.

Most of the patterns are applicable in any domain where students have to write
a final thesis, independent of the specific research method applied in the thesis.
Some patterns are specific to theses that involve designing a solution and
validating the solution with experiments or empiric findings, which is a common
type of thesis in computer science. This is especially the case for patterns that
are used in an iterative process for thesis projects as it is shown in the center of
Figure 1.
As said above, we consider thesis projects as instances of a blended learning setting. Consequently, the patterns of this pattern language are written as socio-technical patterns. They start with a context description and a problem statement that summarizes the situation in which the pattern is to be used. After that, we list a set of forces that were considered in the pattern. We understand these forces as conflicting requirements in the interaction between supervisors and students. The goal of the pattern should be to change the socio-technical setting of the process in a way that the forces are less conflicting. In an ideal situation, the solution would remove the mentioned conflict between the forces.

Since the patterns address problems in socio-technical contexts, the solution is formulated as three sections. It starts with a social solution that outlines how the interaction between student and supervisor should change. The second part of the solution explains how the social process can be supported by technology that is in place at the students’ and the supervisors’ working contexts. This typically includes communication technology (telephone, e-mail or instant messaging systems) and shared information spaces like Wikis or shared file systems (e.g., BSCW or Google Docs). Finally, we propose an integrated groupware solution that shows how the social process can be mapped to an ideal learning management system.
2. The Pattern Language

This paper contains the following patterns:

2.1 FIRST ENCOUNTER: Give your first meeting that creates the basis for a trusty and efficient work relationship.

2.2 Manageable Task: Ensure that the task is scientific enough but also manageable.

2.3 AGILE EXPOSÉ: Make the student write a short exposé of the thesis and keep this updated whenever the task is modified during the thesis project.

2.4 STUDENT MANAGES SCHEDULE: Ask the student to create a project schedule and ensure that the student updates the schedule when the work progresses differently to what was expected.

2.5 Diary: Propose that the student writes daily notes on the progress in a diary so that thoughts stay persistent throughout the project.

2.6 PROJECT HEARTBEAT: Request status updates on a regular basis to ensure that the student is still participating in the project.

2.7 LITERATURE POOL: Let the student collect and reflect on literature.

2.8 BAD COP, GOOD COP: Be strict when the student diverges from the plan but ensure that the student also knows that you will help him to resolve the underlying problems of a schedule shift.

2.9 VELOCITY CALCULATION: Ask the student to reflect on the relation between estimated and spent time in a project schedule and ask him to update the schedule accordingly.

2.10 DEFENSE: Ask the student to present the core of his research at different stages of the thesis project.

2.11 FINAL GRADING: Use the same schema for grading all thesis projects and make the grading schema available to the student at the beginning of the thesis project.

The following pattern map shows the relations between the patterns:
2.1 FIRST ENCOUNTER

Context: A student is looking for a subject for his thesis. You fulfill the formal prerequisites for being a supervisor. The student asked for a meeting to talk with you about possible subjects.

Problem: You need to find out whether cooperation with the student can work out.

Forces:
- You might not know the student too well, maybe from one or two previous courses. Especially you might not know much about the student’s abilities.
- The student might not know you too well, either. He especially might not know what exactly you expect from him.
- Procedures might not be clear if no formal framework for theses is applied in your institution.
- In an ideal case, the topic should be tailored to the student’s preferences & capabilities.

Social Solution: Tell the student how you handle thesis projects. Give as much information about your way of working as possible. Ask the student about his personal situation, including:
- What degree is the student aiming at (Bachelor, Diploma, Master, Ph.D.)?
- In which program (e.g. Computer Science, IS) is the student aiming at a degree?
- When is the student planning to start working on the thesis?
- Are there any external formal or hard deadlines, e.g. exams, expecting a child?
- Is the student planning to be working full-time, half-time or evening-time on the thesis?
After you got an impression of the formal context, ask the student how much time per week (in days) he is willing to spend on the thesis. From the answer, calculate the earliest date you can think of for finishing the desired type of thesis. Try to fit this with your personal context (e.g., you might prefer to get the final thesis in your semester break) and fix a deadline with the student. Even though this might not be the actual final deadline, having the time frame fixed gives both the student and you a good base for planning.

**Instant Technology Solution**: When agreeing for a date for the first encounter, you can ask the students to send you a short cv in which their backgrounds are shown. Together with a confirmation of the meeting, you can send out an agenda as well as a link to your personal thesis guidelines. These guidelines are a public document in which the general rules and assumptions for the supervision of thesis projects are shown.

**Integrated Groupware Solution**: In cases where you use a shared workspace system for supporting the interaction between you and the student, you should prepare the First Encounter by cloning a template workspace that already contains information about structuring a thesis project.

**Discussion**: Although it can work in some cases, we cannot advice to start a thesis project without a face-to-face meeting first. The meeting helps to create a mutual understanding as well as an impression of the student (and the student will get an impression of you). See also “Face to Face before Working Remotely” in [2].

**Related Patterns:**

- **MANAGABLE TASK**: The dimensions of the task can be discussed at the First Encounter.
- **STUDENT MANAGES SCHEDULE**: You can start discussing the cornerstones of a schedule at the FIRST ENCOUNTER.
- **FINAL GRADING**: If you decide to use a grading schema, the FIRST Encounter is a good place for sharing this schema with the student.
2.2 MANAGEABLE TASK

We are still discussing the need of this pattern

Context: The student has expressed her interest for a specific problem area. You have identified project goals that could be reached by the student.

Problem: Supervisors are interested in specific results like the creation of a software component, the analysis of usage data, or a literature overview of a specific field. While all these results are valuable for the researcher and help to gain new insights in the context of a larger research agenda like a doctoral thesis, they are often not scientifically sound on their own. But a student's thesis should add insights to the research community.

Forces:

− The task should be challenging.
− Supervisors lack a solution idea.
− Tasks with an obvious solution from the beginning do not pose an intellectual challenge.
− New obstacles emerge while the student works on the thesis with the effect that the thesis takes much longer to complete.
− The thesis cannot be shortened once it was started.
− Supervisors have to guarantee that the task is appropriate for a thesis, at least when it comes to the time of grading the thesis.

Social Solution:
We are still working on this ;-).

Instant Technology Solution: probably not applicable

Integrated Groupware Solution: probably not applicable

Discussion: ...

Related Patterns:

− AGILE EXPOSÉ: After evolving a MANAGABLE TASK in the FIRST ENCOUNTER, you should ask the student to quickly summarize the task in an EXPOSÉ.
2.3 AGILE EXPOSÉ

Context: The student has selected a topic and the problem statement for the task was discussed with you in a face-to-face or distributed meeting.

Problem: Supervisors and students often have a different vision and goals for the result of a thesis project. If the goals are too different, the student will create a solution that does not meet the supervisor’s expectations.

Forces:
- You might have a clear visor for the thesis but you might have failed to communicate it to the student.
- The student this to meet the supervisor’s goals but only has access to the information that the Supervisor provided in the FIRST ENCOUNTER.
- The more the students works on the topic, the more aspects will he / she contribute to the topic.

Social Solution: The Student summarizes the plan for his thesis in his own words by writing an exposé. A exposé is a text of 2 to 4 pages length, describing the context, the problem, the approach for a solution and a rough schedule for the work on the thesis. You comment on the exposé and ask the student to reformulate it until there is a shared understanding of the task. This process is repeated at later stages to match the thesis with the task.

Instant Technology Solution: The supervisor creates an empty wiki page for the task description. At the end of the meeting, he asks the student to summarize his understanding of the task and to send the supervisor a mail when the summary is complete. After receiving the mail, the supervisor edits the wiki page and highlights points where he has a different understanding of the task. This is repeated until the supervisor sees no more differences.

Integrated Groupware Solution: The e-learning system can support the coordination between supervisor and student by providing an explicit FLOOR CONTROL [Schümmer & Lukosch, 2007] for the document. After the student has finished the task summary, he passes the floor on to the supervisor who will get informed immediately. The supervisor can use SHARED ANNOTATIONS [Schümmer & Lukosch, 2007] for pointing out differences in the understanding and pass the floor back to the student.

Discussion: ...

Related Patterns:
- DEFENSE: The AGILE EXPOSÉ should be defended in a meeting so that other researchers and peer students can judge its appropriateness.
2.4 Student Manages Schedule

Context: Student and supervisor have agreed on a problem statement and the student is about to start working on the thesis.

Problem: Students are independently managing their time. However, they often lack the experience in planning a long-term project like a thesis. If this management is done in an unstructured way, students overlook critical deadlines. As a result, the final phase of a thesis project in most cases goes together with a high level of stress and a quality decrease.

Forces:
- Plans are not accurate.
- Personal problems or the job may require more time as expected.
- The supervisor fails to intervene or help the student when help is required.
- The student is not happy with the progress but fears to discuss problems with the supervisor since this might reduce the final reward / mark.

Social Solution: The student creates and maintains a schedule for the thesis project and discusses it with the supervisor. Both parties agree on a set of milestones where the student presents intermediate results to the supervisor. They renegotiate milestones if the student was unable to complete the required steps for a milestone.

Instant Technology Solution: The supervisor creates a skeleton wiki page that includes the typical milestones for the thesis project. Before the student starts working on his thesis, he adapts the schedule to his needs and fixes dates and content for the milestones. The supervisor approves the schedule, e.g., by e-mail. Shortly before a milestone, the student informs the supervisor by mail about the current status of the project and arranges a date for a presentation of the milestone. Updates to the schedule are also negotiated by e-mail. Finished tasks are marked in the schedule wiki page.

Integrated Groupware Solution: Integration in the e-learning system eases the process of planning. Instead of thinking about concrete dates, the students estimate the required time for each task and define the sequence of tasks. The system afterwards creates a time plan that is visible to the supervisor and the student. Students are informed about approaching deadlines and the supervisor is reminded of missed deadlines. This ensures that there is a high awareness on tasks that are over due. When all tasks for a specific milestone are done, the system automatically arranges a review meeting where the supervisor comments the milestone.

Discussion: A comparable pattern has been described as Instructor Evaluation pattern [Dernstl, 2005]. The main deficit of the Instructor Evaluation pattern is that it does not explicitly focus on the underlying social interaction. Several systems support project management in a comparable way. However, most e-learning environments do not support task planning.

Related Patterns:
- **DIARY:** The schedule should be reflected in the DIARY as soon as the plans become reality.

- **VELOCITY CALCULATION:** The schedule should undergo a constant refinement and adaptation as outlined in the VELOCITY CALCULATION pattern.

- **PROJECT HEARTBEAT:** Another way of capturing progress is to send regular messages to the supervisor. If this is the only record, the student should keep these messages as a DIARY equivalent.
2.5 DIARY

Context: The student is working on his thesis.

Problem: The thesis project requires a long research and learning process. Students explore the state of the art, create hypotheses, and experiment to verify the hypotheses. The deeper the student is involved in performing the work, the less reflection takes place. Important insights and ideas may thus get lost during the project. In addition, the supervisor is in many cases informed too late on problems and thus has only limited capabilities to correct the student's current path of research.

Forces:
- Students work on the thesis and by that develop new ideas or gain new insights.
- The student forgets some ideas over time.

Social Solution: Supervisors ask students to create a diary that documents the activities in the thesis project. The diary serves as a knowledge sink for all thoughts and insights so that they are not lost when the final thesis writing takes place. The diary or excerpts of it should be shared among supervisors and students at least Agree with the student that the diary is shared between supervisor and examiner.

Instant Technology Solution: The easiest way to implement a diary is to write it as a shared wiki page. However, student and supervisor have to agree on visibility levels which not all wikis support. In cases where privacy is an issue, the diary can also be created as a restricted web site. The student is then responsible for uploading new versions of the web site frequently.

Integrated Groupware Solution: Students log in the system when they start working for their thesis. Before beginning the work, they summarize their plan for the day. In the process of logging out, the system prompts them for a sentence telling what they have achieved this day. The summary is stored in the diary system which allows the student and the supervisor to browse all daily summaries of the thesis project. If there are unsolved problems, the student can mark these as action items for the next working session. Note that the system should allow students to mark entries as private so that the supervisor cannot see these entries.

Discussion: [Derntl, 2005] also describes a DIARY pattern. Due to the pattern structure used by Derntl, the problem is not clearly stated. In addition, the staged solution description makes it easier to apply the DIARY pattern in different e-learning systems. BLOGs are often used to support the collaborative creating of a diary in e-learning contexts. Moodle, e.g., offers students and teachers to co-construct a so-called journal that fills the role of the DIARY.

Related Patterns:
- PROJECT HEARTBEAT also argues to provide periodic summaries of the progress made.
- **Velocity Calculation**: Whenever the student enters a note to the diary, he should re-estimate how this notable event helped to finish tasks of the schedule. Finished tasks should lead to a Velocity Calculation.

- **Bad Cop, Good Cop**: When the Diary shows deviations from the schedule, you should get in touch with the student and ask for reasons and problems.

- **Literature Pool**: An alternative for documenting insights of literature study is the Literature Pool.
2.6 PROJECT HEARTBEAT

Context: Students are working on their thesis. They are not co-located with the supervisor.

Problem: To successfully finish the thesis project, the students have to keep up their pace. However, there are many external forces that may hinder the student to progress in the anticipated way. Without support and sometimes pressure from the supervisor, the project loses its momentum and the student ruins into timing problems. But due to the distributed project setting the supervisor cannot easily detect changes in the student’s pace which makes appropriate support and coaching difficult.

Forces:

We are still working on this ;-).

Social Solution: The supervisor proposes the student a social contract that forces the student to report at least every 14 days on the project’s progress. Whenever a report is overdue, the supervisor reminds the student of the violation in the social contract and proposes a meeting where the future of the thesis work is discussed.

Instant Technology Solution: The student sends a mail to the supervisor reporting on the latest progress. The supervisor stores the latest mail in a thesis folder and marks this mail for tracking after 14 days. The supervisor frequently checks the mail folder and contacts those students who have violated the social contract.

Integrated Groupware Solution: The system keeps track of the last activity summary and prompts the student to update his activity summary in the agreed intervals. Both, student and supervisor can see the date of the last report. The supervisor in addition sees an overview of report dues for his all students.

Discussion: The project heartbeat is closely related to the ALIVENESS INDICATOR presented in [Schümmer & Lukosch, 2007]. In cases where the DIARY pattern is in use, the latest diary entry can be considered as a PROJECT HEARTBEAT. An integrated groupware solution would then just keep track of the dates of the latest diary entries.

Related Patterns:

− DIARY: The DIARY provides more information on the progress of the thesis. On the other hand, it requires additional efforts from the student. The PROJECT HEARTBEAT can thus be considered as an automated and lightweight version of the DIARY.

− BAD COP, GOOD COP: A missing PROJECT HEARTBEAT is an indicator for a reminder as discussed in the BAD COP, GOOD COP pattern.

− DEFENSE is another way for the student to brief his supervisor.
2.7 Literature Pool

Context: Students study the state of the art.

Problem: Students need to read research literature in order to relate their ideas to the state of the art. But in their previous studies, students were rarely confronted with research literature. Instead, they received pedagogically enhanced material that clearly stated questions, methods, and results. Researchers, however, are often not good in communicating their ideas in an educative way. Students thus have to learn how to read literature.

Forces:
- Working with literature is not as interesting as building a design artefact, such as a running software system.
- It is sometimes not easy to find relevant literature for a specific topic.

Social Solution: Ask the student to fill a literature pool. Let him search, summarize and comment the literature. Make sure you get access to the literature pool regularly and comment on the student’s summaries.

Instant Technology Solution: Use a wiki to manage the literature summaries. In cases where the wiki supports page templates, you should create a template that contains all required fields for the literature summary as well as the bibliographic data. After the student created a literature summary page, he sends the url of the new page to the teacher who can then comment the page.

Integrated Groupware Solution: An integrated solution would support the student in creating structured literature summaries and distribute the summaries to other students and the supervisor.

Discussion: Systems like Connotea (http://www.connotea.org) or WIKINDX (http://wikindx.sourceforge.net/) support groups of students in collecting literature summaries.

This pattern is closely related to the READ, READ, READ pattern [1] which emphasizes on the process of creating a literature summary.

Related Patterns:
- Diary: The Literature Pool as well as the Diary can help to document the progress of the thesis.
2.8 Bad Cop, Good Cop

Context: Students manage their own schedule in a thesis project.

Problem: Sometimes, students fail to reach a deadline. However, if they do not experience any consequences, they will most probably also fail for the next deadlines.

Forces:
- Sloppy students do not feel bad about this unless it is the final deadline.
- Timid students feel too bad about this, so that they are afraid to talk to you about it; this makes them being even later.

Social Solution: Make clear what happens when a student fails to reach a deadline and strictly follow these rules. Ensure that the consequences for the student are sufficiently hard but leave space for reacting on the student's personal situation. You need to keep up the discipline, so be clear about the possible consequences. But make also clear that you always have an open ear for the student and that you will find an appropriate solution together.

Instant Technology Solution: Make the student write you an e-mail with the subject “I missed the deadline”. In the body of that mail, an explanation must be given and a clear statement whether the student wants to talk to you about the problem. Frequently check the student’s schedule to see if there is a missed deadline. React instantly after detecting such a missed deadline.

Integrated Groupware Solution: Ensure that the schedule is part of the collaboration infrastructure (see STUDENT MANAGES SCHEDULE). The system monitors the deadlines and prompts the examiner when a deadline is approaching as well as when it has passed. In case of a passed deadline, the system provides template mails that can be used to remind the student of the passed deadline and ask the students about their plans for getting on schedule again. You as an examiner should then adapt the message and send it to the student. The system also tracks responses and reminds you on unanswered deadline failure notifications.

Discussion: We could reduce this pattern to the principle of being strict. Since students have a tendency to take a rather sloppy approach to time management, they have to experience an observer who is accurate with respect to deliverables and delivery dates. This accurateness also helps you to communicate to the student that the topic is still of interest to you.

It is important that the messages are adapted before they are sent to the student. Otherwise, students will learn from other students that the message is an automated message and take it less serious.

Related Patterns:
- STUDENT MANAGES SCHEDULE: The deadlines are defined in the schedule.
- DIARY: The progress is also documented in the Diary. Students should explicitly mark reached deadlines in the diary. In this case, the diary can be used as secondary information source for detecting missed deadlines.
2.9 **Velocity Calculation**

**Context:** Students manage their own schedule in a thesis project.

**Problem:** Thesis projects, as most research related endeavours, contain many uncertainties. These make the estimation of a schedule difficult.

**Forces:**
- Quite often the final deadline of a thesis is fixed, typically for formal reasons.
- Students often underestimate the time needed, especially for writing the text of the thesis, feeling comfortable with still some months to go.

**Social Solution:** Let the student annotate each task with an estimate of the required time and make her measure the time that was actually needed to complete the task. Let the student calculate a personal velocity as the ratio between estimated time and required time and make her dynamically update the schedule based on this experience. Ask for a log of these numbers before the final thesis is handed in. With such data you can learn about the time needs of the students and you can easily show students how much time their predecessors needed.

**Instant Technology Solution:** ...

**Integrated Groupware Solution:** ...

**Discussion:** ...

**Related Patterns:**
- **Student Manages Schedule:** A new velocity should result in an updated schedule.
2.10 DEFENSE

Context: The student is working on his thesis.

Problem: Writing a thesis is very time consuming. It is frustrating to find out after several months that the problem has been solved by many others before or that decisions made after the first half of the project are not good decisions.

Forces:

- The student has no good idea how to describe what he is doing. He has problems to find the appropriate level of detail and does not have a clear picture of the things to put into or leave out of the written thesis.
- The student is free to make design decisions but does not know how to test these decisions.
- The student has found his task but has no clear idea of the research path that he wants to follow.

Social Solution: Have a mandatory defense of the thesis at different stages of the project: after the EXPOSÉ is written, before the student starts to implement a solution, and at the end of the project.

The defense should clearly state:

- the importance of the problem,
- the current state-of-the-art,
- approaches that the student wants to take, and
- the expected contribution and benefits.

Invite members of your research group as well as peer students to the presentation. Also ensure that students who are currently beginning their thesis have a chance to attend a Defense of a student who is at a later stage and vice versa.

Instant Technology Solution: ... Presentation of the thesis in a forum (asynchronous) or a chat session (synchronous) – to be refined

Integrated Groupware Solution: ... Provide interaction spaces for the exchange between a group of students. – to be refined

Comments: It is important that the students defend the current status of the project, not their advisor. The defense can be in front of the whole research group or just with the student, the advisor and the professor.

If the discussion went well, the student is convinced that the topic is worth working on (not only the advisor providing the topic). Otherwise, the audience will provide useful hints for changing the topic. The student gets trained in defending project proposals (important both in academics and in industry).

This pattern is, e.g., practiced at Fraunhofer IGD in Darmstadt by Peter Tandler who proposed to include it in this pattern language. It is quite well-established at many US universities.

Related Patterns:
- **AGILE EXPOSÉ** can be used as input for the defense.
- **MANAGABLE TASK:** The Defense reduces the chance of yet-another-whatever thesis.
2.11 Final Grading

Bewertung/Benotung? Spannender als Abschlussvortrag.

Context: The student has finished the thesis and formally handed it in.

Problem: At the end of a thesis, you have to grade it. This grade is very important for the student. However, especially if you are inexperienced, your grading will probably be based on feelings rather than objective facts.

Forces:

Social Solution: Create a grading scheme and communicate this scheme in the FIRST ENCOUNTER.

Instant Technology Solution:

Integrated Groupware Solution: ...

Discussion: ...

Related Patterns:

- ...
3. Other Relevant Pattern Languages

*We are still working on this ;-)*

Summarize pattern languages that complement the thesis patterns and explain which patterns must be used for a successful thesis project. Include each pattern with a short summary (1-3 sentences).

**Shepherd/Sheep Patterns**

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**Meeting Patterns**

- No Agenda - No Meeting
- It's My Agenda, It's My Meeting
- Mandatory Meeting Minutes

**Project Management Pattern Languages?**

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**Educational Patterns?**

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**E-Learning Pattern Languages?**

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**Typography Patterns von Andreas Rüping?**

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4. Patterns Applied

*We are still working on this ;-)*

This section is still under construction and will be available when the patterns have matured. We plan to provide 2-3 case studies that show how the patterns were used in projects at the FernUniversität in Hagen as well as the University of Hamburg.
5. Conclusion

This paper was a first step towards making the interaction between students and supervisors more reliable and transparent. Initially thought as a paper that describes the interaction between supervisor and student at a distance teaching university, we experiences large commonalities with the way how these projects are run at traditional universities. We also observed that, although we as authors did not experience the same universities at any point in time, there is an implicit agreement of how successful thesis projects look like. The same is true for failures that students make if they are not well supervised.

Having this paper, we hope to be able to initiate a broader discussion on good practices for supervising thesis projects. More high level theses as well as less drop outs would justify our work. Future will show if this will be the case.

Acknowledgements: Many people have helped to make this paper reality. First of all, we would like to thank our numerous students who have suffered from our way of advising thesis projects. Their pains made us look deeper into the problems and iteratively improve the interaction between supervisor and student. This means that we especially regret the less professional advice that we provided for our first students. We also thank our recent students since they made us more confident that we have found a good pattern of interaction by now. Additional thanks are due to our colleagues who shared and discussed their style of supervision with us. We thank Peter Tandler for his initial comments and his view on thesis project as well as his proposal of the DEFENSE pattern.

6. References

We are still working on this ;-).

[1] Bergin, J.: Patterns for the Doctoral Student, 
