Case Study: Ethics Concepts during a Student’s Final Year Project in the Middle East

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Abstract: The purpose of this study is to show concepts of ethics common during a construction project and how these concepts develop during a student’s undergraduate final year project. The study is based on a “case study” approach and it analyzes the concepts of ethics as they appear in various settings and documents. It was found that the focus on ethics concepts changed throughout the final year project. At the beginning, the focus was clearly on controlling and monitoring tools whereas at the end the focus changed to personal misbehavior as the core issue, necessity of clear expectations, importance of a role model, application of the “Golden Rule” and trust between project participants as the primary solutions for a variety of ethics issues on a construction project. Interaction of the student with an ethically minded project manager and other project participants contributed to a shift of the student’s focus. This revealed the value of “ethics talk” for shaping ethics concepts.

Key words: final year project, ethics concepts, case study, Middle East

1. Introduction

Following the definition of Robinson et al. (2007), ethics is the philosophical study of right and wrong in human conduct and the principles which govern it. Employees show different ethical attitudes and different levels of interest for society (Rodrigo and Arenas, 2008) and engineering students, the future employees, are no exception. Jonassen et al. (2006) reported that workplace problems are complex and ill-structured because they are, among other reasons, composed of conflicting goals. They are usually not sufficiently learned during engineering education. Although understanding ethical responsibility is one of the 11 learning outcomes as defined by the Accreditation Board for Engineering and Technology (ABET) (ABET, 2009, p. 3) and subjects such as professional ethics, ethics in engineering, or environmental ethics are part of many engineering curricula, graduates are usually left with little understanding of their own ethics concept and how this may influence their decision-making in the workplace. Learning from case studies and the meaning of professional codes of ethics may not be intensive enough to realize the importance of ethics in the workplace and to develop a solid ethics concept, especially since many business decisions in construction are also ethical decisions (Moodley et al., 2008).

Johnson (1991, p. 191) sees the reason for limited ethics awareness among engineering students in “the limited and exploitive education they often receive”. Students need to have a clear understanding of their own
ethics concepts and the challenges involved in applying them in the workplace in order to play an active role in improving ethics on construction projects. They also need to be effective participants in shaping organizational values (Zhang et al., 2008; Mills et al., 2009).

Ethics is perceived differently in different geographic regions and cultures (Liu et al., 2004; Libertella et al., 2007). Izraeli (1997) reported that business ethics is not yet institutionalized in the academia of the Middle East with the consequences that business ethics courses are not taught, little research is carried out and no regular training on business ethics takes place. Although there have been changes since then and ethics related courses are part of some curricula in the Middle East, there are still many negative stereotypes concerning business ethics and many find Western norms of business ethics incompatible with business in this region. The concept of washa (nepotism, using an intermediary to gain advantage) is interwoven in Arab culture (Cunningham and Sarayrah, 1993, p. 3) and bakshich (tip or bribe) is a widespread practice. Corruption in the Middle East is a severe problem (Transparency International, 2005) and its elimination is considered a most significant challenge (Enderle, 1997). This however is in line with the tendency of considering business and ethics as incompatible concepts in most countries throughout the world (Izraeli, 1997).

It is important to note that there is no commonly used term for business ethics in the Middle East since, speaking about ethics and the meaning of ethics related terms, are strongly affected by cultural factors (Enderle, 1997).

After the above general considerations of ethics in construction, ethics within engineering education, and ethics within the Middle East, a closer look at engineering education in the Middle East and consequences for ethics awareness among students is of interest. Webb (2008) showed that undergraduate engineering curricula at educational institutions in the Arabian Gulf require students to complete a smaller proportion of humanities and social science courses when compared to institutions in the US. In addition, critical enquiry is comparatively absent and the educational system prioritizes rote learning over analytical investigation (Webb, 2008). This leads potentially to less interaction with the topic of business ethics in general and ethics dilemmas specifically. Engineering graduates have therefore most likely no solid workplace related concept of ethics which makes them vulnerable to adopt, without reflection, whatever concept they find most convenient, or to follow a concept which seems to be expected by their employer.

However, what makes a student develop a solid concept of ethics? The case reported here of an undergraduate engineering student and his final year project “ethics on a construction project in the Middle East” gives valuable insights.

2. Purpose

Following a call for integrating regions which are widely neglected in business ethics research (Choi et al., 2009), the case presented here is located in the Middle East.

The purpose of this case study is to show concepts of ethics prevalent during a construction project and their development during a student’s undergraduate final year project due to interaction for a period of time with project participants of one of the largest construction projects in the region. It is expected that the student’s ethics concept changed during his final year project and that one or more factors caused this change.
3. Method

Research based on a case study needs to clarify whether a single case study or multiple case studies are necessary. Yin (2003) describes five criteria, each of which makes a single case study appropriate:

1. The case is critical and allows testing a well formulated theory;
2. The case is unique or extreme;
3. The case is representative or typical;
4. The case allows analysis of a previously inaccessible phenomenon; and,
5. The case is longitudinal in nature (i.e., covering an extended period of time) and allows analysis at different points of time (Yin, 2003, pp. 39–46).

The case considered here is unique (criterion 2, above) in several regards:

- When confronted with the topic idea and, contrary to his fellow final year project students, the student was interested in accepting this topic for his final year project;
- The construction project manager brought the topic up and strongly emphasized the need for changing ethical behavior on construction projects in his country;
- During his final presentation, the student mentioned that his project led him to shift paradigms from perceiving ethics as something unimportant to perceiving ethics as a topic of paramount importance; and,
- The case took place in an area which is known for significant ethics issues: one of the GCC (Gulf Cooperation Council) countries (Transparency International, 2005).

In addition, the case allowed insights into the engineering student’s change of ethics concepts (criterion 4, above) and allowed a longitudinal analysis (criterion 5, above) over 89 days. Hence, a single case study is considered appropriate.

3.1 Case Identification

Identification of this case was unique regarding both the identification of the topic itself and the identification of the student. The topic was suggested by the project manager (representing the client organization) after a presentation given by one of the authors in the project manager’s field office. The presentation covered four potential topics for final year projects, all related to construction management. However, the project manager remarked at the end:

“There is even a more important topic for a graduation project: Ethics! ...”

In the following he elaborated on ethics problems in his country, the consequences, and the need to find solutions. It became obvious that this topic constituted a felt burden to him.

Contrary to his eleven fellow students taking the final year project subject, one student was interested in dealing with this topic although it was open in which direction it would eventually develop. The particular student was known to the final year project supervisor (one of the authors) from four subjects the student finished during preceding years. He is known as a rather quiet student, but followed classroom sessions actively and was among the top 30% students for all four subjects.

3.2 Data Collection and Measures

The data collection process was in line with four of the six principles of case study research (Yin, 2003, pp. 83–108) and the times of data collection is shown on Figure 1.

1. Analyze documentation: At various stages of the final year project, the student had to submit documents
which were assessed and were also part of the basis for the analysis carried out here: a preliminary plan (submitted day 15), a progress report (submitted day 43) and a final thesis (submitted day 89). In addition, he prepared and submitted a questionnaire (submitted day 41) and meeting minutes of an ethics workshop (submitted day 49); both documents are described and analyzed below.

(2) Analyze interviews and discussions: The supervisor conducted three recorded interviews with the student and two recorded discussions with the student and the project manager. The interviews and discussions covered the student’s progress and next steps.

(3) Analyze observations of participants: As part of his final year project, the student prepared and carried out an ethics workshop for seven construction project participants, including the project manager (PM), two engineers from the client side (client 1, client 2), two engineers from the consultant side (consultant 1, consultant 2), and two engineers from the general contractor side (contractor 1, contractor 2). The student also conducted follow-up interviews with each of the participants after the workshop. The supervisor participated in all of the interviews as a silent observer and in the workshop as an active participant and recorded the communication processes as well as observing behavioral issues.

(4) Analyze direct observations: During the supervisor-student interviews, the supervisor observed the student and took notes of his attitude, behavior, reactions, etc.

The principles of analyzing physical artefacts and analyzing archival records (the other two of six principles, Yin, 2003) were not applicable to the case study carried out here since the student did not present or mention any artefacts or archival records, which would have allowed insights into his ethics concept.

Figure 1  Timeline Data Collection

ST = Student
S = Supervisor
PM = Project Manager
CO 1, 2 = Consultant 1, 2
CL 1, 2 = Contractor 1, 2
CL 1, 2 = Client Engineer 1, 2
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The recorded data allows chronological measuring of the frequency of used concepts, first and last time appearance of concepts, and the tracking of concepts as expressed during the 89 days of the final year project.

4. Analysis

Following Yin (2003, p. 109), the three general analysis strategies are:

1. Relying on theoretical propositions: These are derived from the foregoing literature review, identification of the issues, and the initial precursors for the case study and final explanations will be based on comparing findings with the initial propositions. This study is based on the propositions that the
   • Student’s ethics concept changed during the 89 days of his final year project;
   • Emphasis of the importance of ethics by the project manager contributed to cause this change; and,
   • Sequence of final year project activities (including literature research, student-supervisor interviews, discussion during workshop, student-project participant interviews) contributed to cause the change of the student’s concept.

2. Considering rival explanations: Alternative explanations might have caused the same phenomenon and need to be considered when discussing the results. For example, although the supervisor stayed consciously neutral throughout the final year project, the student might have identified signals during the interviews which may have led the student to change his concept on ethics.

3. Developing a descriptive framework (case description): This is principally used when the two proceeding strategies are not applicable (Yin, 2003, p. 109) and, therefore, is not further considered here.

Case study analysis may be based on one unit of analysis or more than one unit of analysis (Yin, 2003). A unit of analysis is a message or message component which can be clearly identified (Neuendorf, 2002, p. 71). Here the units of analysis are concepts as they relate to ethics principles and as they were recorded during interviews and used for the student’s preliminary plan, progress report and his final thesis. The time series analysis will show how these concepts occur over time. Using single terms as keywords has been found to be unsuitable because the student and the workshop participants used English as their second language.

Analysis of case study data consists of examining, categorizing, tabulating testing and otherwise recombining quantitative and qualitative data. The use of analytic software tools to facilitate coding and categorizing data is recommended (Yin, 2003, p. 109). Here, NVivo9 (QSR, 2011) has been used to analyze ethics concepts and conceptual relationships of the student’s written documents, i.e., the preliminary plan, progress report and thesis.

Based on a logic model (Yin, 2003, p. 127), the researcher stipulates a chain of events over time that link cause and effect. This means the outcome of an earlier stage becomes the causal event for the next stage. Predicted outcomes are then tested against evidence found in the data. Here, the interviews, discussions and submissions of documents present all parts of the logic model (Figure 2) and are expected to cause effects on the following stages. This does not ignore potential direct effects of stages before the immediate preceding stage. However, the continuing reflective interaction of the student with the topic is assumed to be similar to a chain of events. The student's parallel and ongoing literature research is expected to have some effect, which needs to be tested by analyzing the literature he found. Since he submitted the references of researched literature with the preliminary plan, progress report and, finally, the thesis, the expected effect on the therein presented ethics concepts can be tested by looking for these concepts in the used literature.
4.1 Results and Discussion of Qualitative Analysis

This section covers the results of the qualitative analysis of collected data in chronological order. To improve readability of this study, the results are immediately followed by discussions.

4.1.1 Day 1 (Introduction of Topic)

When the supervisor introduced “ethics on construction projects” as a final year project, the student’s first reaction was a smile which seemed to say: “In our region we don’t care about ethics”. However, when he heard that a project manager of one of the largest construction projects in the region was interested in it, he became more serious and listened attentively when the supervisor presented a rough idea about the scope of this final year project. Although the student revealed through his following questions that he did not have a real concept of business ethics, he did indicate that he was interested in exploring this topic.

4.1.2 Day 9 (Discussion of Student, Supervisor and Project Manager)

After the supervisor introduced the student to the project manager and expressed his appreciation for the opportunity to carry out a final year project based on a real construction project, the project manager justified his concept that ethics on construction project is one of the most important issues. He mentioned:

“I could easily put a lot of money from the budget into my pocket and nobody would find out.”

He added other examples of unethical behavior such as bribery and unjustified claims, as well as “controlling tools” such as a specific project-intranet for consistent project communication, Building Information Modeling (BIM), to enable realistic cost and time estimations, a “project team experience matrix” to ensure that experience and qualification of staff match their task assignments and site surveillance cameras; all would contribute to enforce ethical behavior. However, he admitted that it is always merely a matter of time until these “tools” are identified and consequently left to be ineffective. Therefore, more effective means of ensuring ethical behavior should be developed and implemented, such as honoring staff of project parties in the presence of their supervisors or ensuring that staff understands that the project is about a national issue and not merely about profit. He suggested to the student to start his final year project with identifying the five most critical issues regarding ethics on construction projects and then to research for means to prevent these issues.

The student listened very attentively, but did not contribute to the discussion (which was in fact dominated by the project manager’s explanation) until the end when the student mentioned:

“I will try to find out about the five most critical issues and hopefully I find a solution.”
The student seemed to be impressed by the project manager, although it was unclear if this was because of the project manager’s position, appearance, ethics concept, eloquence, or other factors. However, from this discussion onwards the supervisor did not see the student smirking when talking about ethics and he seemed to consider it to be an important topic.

4.1.3 Day 15 (Submission Preliminary Plan)

The student began his preliminary plan by establishing a link between ethics and the construction project and its project manager, and, continued with expressing the goal of his final year project:

“...to come up with a guide for ethics management for other construction companies to follow.”

In the following he began using terms such as “big effect, larger effect, successful, unique topic, one of the largest construction projects, cooperation between the public and private sectors” in order to explain the importance of his final year project. He also introduced terms such as “waste of public money, ethics issues” to refer to the consequences of unethical behavior. His preliminary plan confirmed the result of the previous discussion on day 9: The student perceived ethics as something important and concluded his final year project to be an important one.

4.1.4 Day 20 (Supervisor’s Interview of Student)

The main reason for this interview was to focus on the previous discussion with the project manager on day 9 and to see if, and how far, it had changed the student’s concept of ethics.

S: ...How did the project manager seem to define ethics?
ST: ...quality of work performed ...behavior ...experience of staff
S: What did the project manager perceive to be the biggest ethical problem?
ST: He mentioned that claims are most critical, that was the only one...
S: What did the project manager think is the solution?
ST: ...controlling tools to force on workers...

The degree of details of his answers to the supervisor’s questions regarding the discussion with the project manager eleven days earlier and the spontaneity in answering these questions revealed the high impression the project manager must have had on the student. However, the student did not comment on the project manager’s concepts by comparing with other concepts. The student confirmed the importance of ethics and the importance of controlling tools to avoid ethics issues, but no emerging new concept could be realized and it became obvious that the student had not thought about the topic since submitting his preliminary plan. At the end of this interview, the student agreed to research literature for the five most important ethics issues and potential solutions for a week later.

4.1.5 Day 27 (Supervisor’s Interview of Student)

The student explained that, based on Vee et al. (2003), he found negligence, bribery, fraud, claims and misbehaviour to be the five most critical issues, and he emphasized that claims was also an issue the project manager had mentioned. Interestingly, the project manager had also mentioned the other four issues and, in addition, Vee et al. (2003) do not mention claims as an ethics issue whereas they list further issues which the student did not perceive as belonging to the five most important ethics issues. The influence of the project manager on the student’s ethics concept seems to be much stronger than the influence of literature.

However, based on his literature research, new concepts had emerged. The student found that ethics is not only a problem, but constituted a chance: “…ethics has potential to improve competition and profit and productivity, and the “Golden Rule” [i.e., do to others as you would have them to do (Merriam-Webster, 2011)]
can create an ethical workplace...”

This concept was based on literature and was not articulated by the project manager before. Also, the implementation of an ethics office as point of contact for employees with ethics related questions and concerns was a strategy he found in literature and he agreed that this may be an important approach.

4.1.6 Day 29 (Supervisor’s Interview of Student)

Potential solutions to the previously identified ethics issues were the focus of the interview. The student explained solutions for the issues of negligence, claims, and misbehavior which were already mentioned by the project manager on day 9. Regarding fraud, he mentioned a solution the project manager explained before (web-cams), but, in addition, he mentioned “additional inspectors”. Concerning bribery the student said that he found in the literature that payment records can solve the issue. The student’s concept concentrated clearly on controlling tools to combat ethics issues.

The supervisor observed that the student had still no solid understanding of how negligence, fraud and claims can be ethics issues on construction projects although the project manager explained all three issues during the discussion on day 9.

Asked whether the “Golden Rule” could be implemented in contracts, the student responded spontaneously:

“No, that’s not possible. It’s unusual, contract parties might be frightened because they would not be sure about the consequences, it’s new to them...”

After pausing, he continued:

“Maybe it would increase commitment? May be a client could mention in the contract with the General Contractor that the “Golden Rule” should be part of the contract between the General Contractor and the Subcontractors.”

Based on the student’s literature research and as expressed on day 27, the student knew immediately what the “Golden Rule” is about. However, visualizing the implications of the supervisor’s question seemed to be necessary in order to realize the involved challenge before the “Golden Rule” actually may constitute a chance.

4.1.7 Day 30 (Discussion of Project Manager, Student and Supervisor)

The goal of the discussion was the student’s presentation of the most significant ethics issues in construction projects as well as potential solution strategies. The following excerpt reflects the tone of the discussion and the approach the project manager took:

ST: One of the five identified issues is fraud...
PM: [interrupts] What is fraud?
ST: [explained example of contractor who committed fraud]
PM: You want to talk in general, do not just look at the contractors, speak in general...

The project manager interacted with the student positively, critically in that he asked the student to explain statements further, took an objective stance towards the topic and gave advice regarding dealing with the topic.

Further in the discussion, the project manager confirmed the student’s opinion, recommended caution concerning some examples, encouraged the student to see the “big picture” of construction as a contribution to society, reflected ethnic objectivity (i.e., no ethnocentrism) and used negative as well as positive examples. It is noteworthy that adopting the stakeholder concept in order to develop business ethics in the Middle East was suggested by Middle Easterners before (Enderle, 1997).

The student mentioned that he did not find an example for the issue of claims. This showed that he neither understood the issue through the project manager’s previous explanation on day 9, nor through his literature...
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research as he mentioned on day 27. Furthermore, the student raised the issue of claims as one of the most important issues already on day 20, but it seems that he was hoping for further explanation of that point since he had still not clearly understood it. Here (on day 30), the atmosphere and tone of the discussion with the project manager may have allowed him to admit openly a weakness, i.e. that he did not find an example related to claims. The project manager helped the student with a negative example, showing unethical behavior of consultants and contractors related to claims, and, in addition, with a positive example of himself and the need “to be more a politician or psychologist than an engineer” (project manager) in order to ensure that all project team members understand the project strategy in the same manner.

At this stage of the discussion the leading site manager (representing the general contractor) entered the office, was updated about the previously discussed points and was invited by the project manager to join the discussion. The project manager used this opportunity and exemplified one of the previously given examples, the importance of praising project team members, by praising the site manager’s opinion about success factors for project teams. The site manager returned this praise by saying:

“...ethics spreads like a virus. I tell my team always: We don’t want to make <the PM> mad...”

The project manager and the site manager continued to agree that a pioneer, a positive example of a role model is most important in the improvement of ethics on construction projects and that “curing” people’s unethical behavior is the solution. They also showed interest when the student was explaining the idea of an ethics office which he found earlier in the literature (day 27).

There was a clear shift from the previous focus on controlling tools towards the focus on honoring team members and being a role model. Also, the discussion of ethics issues focused more on misbehavior in general, as opposed to the more specific consequences of unethical behavior.

4.1.8 Day 41 (Student’s Submission of Questionnaire for the Ethics Workshop)

The student submitted a questionnaire which included questions related to the definition of ethics, importance of an ethics code, relationship between ethics and the law, the meaning of the “Golden Rule”, ethics issues and differences between different cultures and societies. However, more revealing was his introductory purpose statement on the head of the questionnaire: “The answers you provide will help in valuable research” (student, emphasis added). Similar to the findings related to the preliminary plan, the importance of his final year project, and, with that, the importance of the topic, seemed to play a major role in developing his concept on ethics.

4.1.9 Day 43 (Student’s Submission of Progress Report)

The manual analysis of his progress report revealed concepts which the student showed earlier: importance of ethics (day 15), “Golden Rule”, the positive consequences of ethics on the work environment (day 27), five most important issues, controlling tools as a solution, the importance of a leader as a positive example, “Misbehavior...is one of the most important issues concerning ethics”, and the ethics office (day 30).

However, some emergent themes are also pointing to new concepts which were not evident before: “Engineers, architects, project managers and contractors have the fundamental right of professional conscience (Martin and Schinyinger, 1996)” and “personal ethics’... (Badger and Gay, 1996)”. The student began shifting from business ethics and a set of rules for personal ethics.

The student’s explicit connection between the “Golden Rule” and the “perceived most important issue of misbehavior” was also new. Analyzing the progress report’s reference list revealed that, besides Badger and Gay (1996), Encyclopaedia (2011) may have contributed to establishing this link. The other references (Appelbaum,
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1990; Australian Institute of Builder, 2001; Fryer, 1997; Schwartz, 2002; Johnson, 1991; Vee et al., 2003) are not shown as in-text reference and a clear influence could not be established.

4.1.10 Day 49a (Discussion during Workshop)

The project manager welcomed the workshop participants, stressed the importance of ethics and expressed the desire of all participants to help the student with his final year project. The student emphasized the importance of ethics, explained the purpose of his questionnaire and administered it to the participants. He continued with a presentation of the five most important ethics issues in construction projects. During the following 1.5 hours discussion, the student followed the discussion actively, but did contribute to the discussion only two times:

When discussing the reason for unethical behavior, contractor 1 remarked that forcing project team members to apply ethics principles would not work since the principles would be overcome after some time and, therefore, the principles would need to be engraved in their minds. Then, the student raised his voice and said:

“Unethical behavior is contagious as <the PM> once mentioned...”

“Contagious” was the term the project manager used before on day 30 when he explained the necessity to “cure” unethical behavior, and at this point of the discussion the student remembered this and saw it as a reason for unethical behavior.

Later, the participants discussed how to avoid unethical behavior. At one point, the project manager mentioned that also contractors loose at the end if they work unethically, e.g., by raising false claims. This led to the following exchange of words:

ST: How can it be ensured that the rules are followed?
PM: The leaders need to ensure this! Others will follow the initiators!

Although the student had recalled the importance of role models in his progress report (day 43) as a consequence of previous discussions with the project manager, he did not remember this aspect here.

4.1.11 Day 49b (Student’s Submission of his Workshop Minutes)

One reason that the student himself did not contribute more to the before mentioned workshop discussion was due probably to the fact that he took notes which, however, led to another important document available for analysis here. It can be assumed that the student tended to take notes of those issues which he found to be more interesting than others — especially since the discussion was fairly lively (not allowing him to write down every word) and it was taking place in his second language.

The following concepts were already raised on previous occasions; however, some of them were discussed during the workshop in more detail which may have caused the student to understand better or even for the first time and, hence, making him to record them. For example, the student recorded that “engineers will find a way to ignore it [ethics]”, although the problem that controlling tools will eventually get “cracked” was already raised on day 9. The project manager’s statement “We live in a contagious environment” was already made on day 30 and earlier. “If the managers are bad, they would influence the whole structure below them and vice versa” was discussed on day 30, however, here the project manager stated this explicitly together with the concept of trust:

“There should be an agreement and trust between managers, we work together and help each other...”

The student also recorded “They see me anywhere, even if I’m done”, referring to one of the controlling tools, the surveillance cameras, discussed on day 9. However, this time the fact was added that using surveillance cameras also reveals when a worker finished his work (versus supervising the workers’ work activities). Regarding the “Golden Rule”, the student noted “I think it will work. If I like to be treated well, then I will work hard for them.” This was also already the quintessence on day 27, however, here a limitation was added: “If I
like...” Furthermore, he recorded “Apply it [the “Golden Rule”]. Somebody needs to take initiative and do the first step”, which is again the necessity of having a positive example, as discussed on day 30, but this time linked to applying the “Golden Rule”.

Besides the concept of trust, another new concept emerged which covered “Moral ethics exam/course to teach engineers, because engineers are as important as doctors”. Also, the project manager’s view that “We supervise or judge ourselves: did we do it rightfully?...Teaching from childhood is necessary...There is only one solution, which is me [emphasis added]. If every person treats himself, then everyone would do so...When I believe it is right, then I have to do it.” was mentioned for the first time. It was added that culture affects ethics, although the “Golden Rule” was considered to be “global/universal”. The student also recorded an example of applying the “Golden Rule” which was given by consultant 2:

“They think if they are yelling, then they have to yell back, which is wrong!”

Another emerging theme was mentioned by the project manager and the student recorded:

“We have to change the principle of awarding the bidder with the lowest price. Contractors give a low price, but later they behave unethical to make up for the loss.”

Finally, the student noted the concluding remarks of the project manager:

“Help others without expecting things in return. Treat myself: ME [capitalized in original]. Help people without expecting anything in return... You will gain something at the end of the line: reputation.”

During the following mentioned interviews, the student followed up on the questions of the questionnaire if these were answered ambiguously or not answered at all. A further impact on the student’s ethics concept beyond a reinforcing impact could not be identified since the student did usually not comment the answers. However, the few occasions where he commented on the interviewees answers, and the occasions where he added questions beyond the questions of the questionnaire are further analyzed in the following.

4.1.12 Day 70a (Student’s Interview of Consultant 2)

The following verbal exchange revealed a mental combination the student reflected already for the first time on day 49: the link between the “Golden Rule” and the importance of having positive examples:

ST: Applying the “Golden Rule” would probably improve mutual respect, would it also improve other areas? Which?

CONS2: It basically treat people as equal.

ST: And being a role model?

CONS2: We have to be role models too...

The student considers someone who applies the “Golden Rule” a role model. The conversations prior to day 49 linked the role model to ethical behavior, but did not further define ethical behavior. Here, the student seeks confirmation from his interview partner that someone applying the “Golden Rule” would be a good role model.

A new theme emerged based on the student’s following question.

“If project members detect unethical behavior, should they report it? To whom?”

The student did not assume that a high level of ethics awareness, like the level of this construction project, would avoid all possible unethical behavior and he wondered about the handling of such issues.

Finally, the student was interested if the previous ethics workshop caused the [Consultant 2] to change his opinion about ethics.

4.1.13 Day 70b (Student’s Interview of Consultant 1)
After consultant1 explained that a code of ethics should be attached to the specifications in order to ensure that all project parties know about the expected ethical behavior, the following exchange of words erupted:

ST: May be it [i.e., ethics] should be discussed in a kick-off meeting?

CONS1: The kick-off meeting focuses on the technical, organizational and emotional things, but no actual rules regarding respect [the following example clarified that he meant ethics, not merely respect] are discussed. For example...

On day 29 the student had developed the thought that prescribing ethical behavior as part of a contract may be difficult. Here, the consultant’s explanation may have triggered the same reservations and the student perceives the mere discussion of expectations regarding ethics as something more realistic.

A second situation revealed another aspect of the student’s ethics concept at this point. Asked about cultural differences regarding applying the “Golden Rule”, consultant 1 answered:

CONS1: It should be common, because it’s about global fundamentals [paused and looked unconfident to the supervisor]

The student complemented:

ST: like an international language

At this stage of his final year project, the student had less doubts than his interviewee that the “Golden Rule” would be applicable in all cultures and societies.

4.1.14 Day 71a (Student’s Interview of Client 2)

Regarding the question whether a project member who detects unethical behavior should report this, the following dialogue took place.

CL2: This is not the solution. Fear from supervisors is not the solution.

ST: But how should this be handled?

CL2: I [pause], reporting creates new problems...

ST: How do you prevent a second time?

CL2: I would confront him directly and say: “I think you are a honorable man...”

The student was convinced that unethical behavior must be addressed in some way in order to avoid repetition of the incident.

4.1.15 Day 71b (Student’s Interview of Contractor 1)

The question regarding to whom to report unethical behavior led again to insight concerning the development of the student’s ethics concept.

ST: If project members detect unethical behavior, should they report it? To whom?

CONT1: They should, in writing, directly to [PM]

ST: Why not to <site manager> [the superior of CONT 1]?

CONT1: Because the PM needs to know everything.

Although the student was confronted a day earlier with the idea not to report the incident, but to confront the culprit directly, he enquires as to why it should not be reported to the direct supervisor of the culprit. The student still considers reporting as a necessity, but does not see the need to involve the PM.

4.1.16 Day 71c (Student’s Interview of Contractor 2)

During this interview the student did not reflect any new thought, but, for the first time, he was confronted with the following concept regarding ethics conflict situations:

ST: Would the “Golden Rule” be applicable for someone whose company expects unethical behavior?
CONT2: What do you mean?
ST: [explains the question]
CONT2: If my boss [pauses, continues interview in Arabic, student translates answer for supervisor]... behaves ethical, then yes! In the end it all depends on the orders of my superior!
The student did not comment, but the answer had potential to strengthen the student’s concept of the importance of supervisors as role models.

4.1.17 Day 77 (Student’s Interview of Client 1)
Following the question regarding how to train ethics the following dialogue took place:
CL1: In my opinion, number one: workshops. They need to know the ground rules. Number two: role models.
People need to have role models with experience [student interrupts]
ST: like the PM [client1 interrupts]
CL1: Yes, I learned so much from the PM on many sites [probably he meant “in many aspects”, since he mentioned later that it was his first project under the PM].

The previous encounters with the project manager made the student realize that the project manager was a role model for this project. It is unlikely that the student intended to receive a confirmation of this impression by throwing in his remark about the project manager, rather, it was a typical interrupting remark which shows in Arab culture that one enjoys the conversation and is attentively following the conservation (Bouchara, 2002). However, it showed that a role model was not a theoretical construct for the student anymore and the project manager came immediately to his mind when he heard the term.

The question regarding the “Golden Rule” and its application in different cultures led to another insightful dialogue:
CL1: I think it’s universal [paused], at any place. But sometimes it’s different because of different cultures, for example different standards of work [student interrupts]
ST: different traditions [client1 interrupts]
CL1: Yes [pauses]
ST: [repeats question again]
CL1: There is a useful technique: use a supervisor from the same culture, for example, we have Koreans and they are supervised by a Korean, and Egyptians supervised by an Egyptian...

Although the student was convinced on day 70 that the “Golden Rule” is like an international language and applicable in all cultures, here he reflected that different traditions may pose a challenge to applying the “Golden Rule”.

4.1.18 Day 85 (Discussion of Project Manager, Student and Supervisor)
The student’s goal of the discussion was to reflect on the questionnaire questions and to discuss the topic for a last time before he would finalize and submit his thesis. Some statements gave again insight into the student’s concept regarding ethics.

After the project manager explained that the leaders of the three main parties (client, contractor, consultant) of this project agreed upon a certain ethics basis and that it worked at least for this project, the student said:
ST: It’s contagious
PM: Yes!
The student used again an expression which was used by the project manager on day 30 and which was quoted by the student already on day 49. Obviously, this expression had some impact on the student. Applying the
expression in the right context shows that the student realized again the crucial role of the role models. Regarding
the question whether trust between superiors and subordinates would improve ethical behavior of subordinates,
the following was said:

PM: It [i.e., ethical behavior] would improve. For example,
ST: [referring to the given example] Trust increased ethical behavior.
PM: Yes, some don’t come [to work] in spite of trust; some are not equal to others.
ST: What do you do?
PM: [paused] I find out the reasons...

On day 49 the project manager had mentioned the importance of trust as it relates to being a role model. Here
he used an example which made the student realizing again the role of trust. However, the project manager did not
conceal that it still may involve challenges.

4.1.19 Day 89 (Submission of Thesis)
Since the student’s thesis consisted of 86 pages, only his conclusion will be analyzed qualitatively before the
whole thesis will be coded and analyzed quantitatively using NVivo9 (QSR, 2011).
First, the student stated explicitly: “I didn’t have any idea that ethics was at this high importance, but
throughout the semester I have really learned a lot from this case study research.” He continued by remarking that
he learnt something which could not have been taught at school and that he understood the importance. More
specifically, he mentioned that he learnt how to make ethics an aspect in daily lives and that it is important
because peoples’ lives are affected. He continued to list increased trust, meeting expected project quality, and a
reduced budget as advantages of projects based on clear ethics principles and all three issues were mentioned
before by the project manager (days 49 and 85; day 9; day 20).
Furthermore, he described the necessity to start with ourselves and “to treat ourselves before treating others”,
the requirement of a role model, and that everyone on the project team would be treated equally with respect if the
role model creates an ethical environment. Again, a clear impact of previous input is identifiable. On day 49 the
student recorded in his workshop minutes that the project manager mentioned the necessity of changing ourselves
first. The requirement of role models was raised first on day 30 and day 49 by the project manager, before the
student subsequently added this aspect within the interview with consultant2 on day 70. The consequence of equal
treatment of all project team members was described by consultant2 on day 70.
Finally, the student emphasized that his final year project was merely based on one construction project and
that the situation on other projects may be totally different. This reflects the understanding that ethics on
construction projects depends on the ethical attitude of the involved project team members and confirms the
preceded conclusion regarding the importance of role models.

4.2 Summary of Qualitative Analysis
Table 1 summarizes the qualitative analysis by indicating the student’s ethics concepts as they emerged from
the collected data of discussions, documents and interviews in chronological order. Black shaded cells symbolize
the student’s explicit discussion of the concept, whereas the grey shaded cells show that the concept was not
discussed explicitly, but may have had some influence on the data generating activities and, therefore, an indirect
influence on the student’s ethics concept.
The student perceived a high importance of ethics through the project manager’s concepts during the initial discussion and this concept did not change till the end of his final year project. The found ethics issues were similar to the issues found by others (Bowen et al., 2007), but by the interaction with the project manager the student perceived personal misbehavior as the biggest problem. This concept is not surprising since personal misbehavior could be considered as the root cause of all ethics issues instead of a separate ethics issue. Controlling tools were intensively discussed during the first half of his final year project, whereas it did not play a major role in the student’s concept after the workshop. The open discussion of the workshop participants and their
The concept that ethics may improve an organization’s competitiveness came from the student’s literature research. However, it was not brought up again and seemingly it did not become part of the student’s concept on ethics. The same can be said regarding the introduction of a project ethics office, an ethics examination or ethics oath for engineers, education from childhood and, finally, the influence of bidding regulations. All of these concepts were initially discussed at one stage of his final year project, but there are no indications that they became an integral part of the student’s ethics concept. Except for the project ethics office, these concepts did not emerge before the workshop. In addition, the concept of bidding regulations was probably perceived to be more legal in nature than ethical.

On the other hand, after the student’s literature research, he raised the “Golden Rule” in various contexts and it became part of this ethics concept. Although there is no universal theory of ethics (Liu et al., 2004; Libertella et al., 2007) and business ethics are considered culture specific (Izraeli, 1997), the student perceived the “Golden Rule” as an universal rule applicable across cultural boundaries. The project manager’s emphasis on beginning with improving one’s own behavior had probably some influence, although the “Golden Rule” was not discussed explicitly with the project manager during the last discussion with him. The “Golden Rule” may have been closer to the student’s own situation than education of children, changing legal regulations, or initiating an ethics office or ethics exams/oaths for engineers.

Similar to the occurrence of the “Golden Rule”, the concept of a role model, the “contagious nature” of unethical behavior, and the need for some type of clarification regarding ethics expectations were emerging throughout the student’s final year project, and, also mentioned in the conclusions of his dissertation. The project participants’ limited support for a code of ethics was probably a consequence of never experiencing an effective code of ethics and doubting the possibility of an effective code of ethics (Schwartz, 2004).

The project manager, who exemplified a role model and who used unforgettable terms such as “contagious”, was the initiator for the student’s role model and “contagious nature” concepts. The importance of ethical leadership and the consequences if it is missing have been shown before (Toor and Ofori, 2009). However, the project manager had a secondary influence on the perceived necessity for clarified written expectations (such as a code of ethics), which initially emerged through the student’s literature research and was reinforced during the workshop and some of the interviews. The student’s concept is also perceived by many scholars (e.g., Ibarra-Colado et al., 2006; Liu et al., 2004; Ho et al., 2004) and a basis for tools such as a stakeholder ethical responsibility matrix (Moodley et al., 2008).

The concept of trust was first raised during the workshop by the project manager who reinforced this concept again during the final discussion with the student. This may have influenced the student to make trust part of his ethics concept and to emphasize it in his thesis’ conclusion. Trust is important for an ethical environment (Rodgers, 2009), it leads to work empowerment which has been shown to increase motivation and commitment (Liu et al., 2007) and it is the basis for an ethics of care which has been shown to be more effective than the utilitarian approach (Smyth, 2008).

The necessity of consequences for unethical behavior did not emerge before the follow-up interviews and it did not seem to become part of the student’s ethics concept, although he agreed in principal to reporting unethical incidents (days 71a, 71b). The requirement for whistle blowing and consequences of unethical behavior have been mentioned in literature (e.g., Kaptein, 2011; Sohail and Cavill, 2008) and a likely reason for the student not to include it in his final ethics concept may be that he thought a strong role model would play an active part
regarding accountability, which is not unrealistic for superiors such as the project manager of this case study.

Enderle (1997) suggested that non-Western approaches to business ethics should be considered and that the Middle East should examine differences between normative ideas about business ethics in the Middle East and the West. Comparing with the West, the results shown above suggest a stronger focus on role models, the “Golden Rule” and trust and less importance of institutionalizing ethics through an ethics office, ethics exams or ethics oaths. Furthermore, the student’s collectivistic culture supported developing an ethics concept through interaction with others (Hofstede, 1994; Ali et al., 1997). However, cultural differences and their influences on ethics are not the focus of this study and are not further considered here.

4.3 Results and Discussion of the Quantitative Analysis with NVivo9

After coding the whole thesis regarding different ethics concepts, ethics issues, influences on the student’s ethics concepts and the importance of ethics, a cluster analysis of word similarities was performed. The program’s analysis of similarity is based on the Pearson correlation coefficient and the cluster analysis generates a diagram which clusters selected nodes consisting of the same concept if they have many words in common (QSR, 2011). The following cluster map (Figure 3) shows the result for the analysis of ethics concepts and influencing factors.

![Cluster Map of Student’s Ethics Concepts and Influencing Factors](image)

Some of the similarities allow the following interpretations and add to the previous insights. The usage of words to describe the “Golden Rule” concept and the role model concept show similarities which may be interpreted that, from the student’s perspective, a role model applies and follows the “Golden Rule”. This impression was also apparent during the workshop.
The word similarities might indicate that the workshop contributed to the understanding that personal misbehavior is a core issue. Similar, the project manager seemed to have influenced the student’s concept of trust as it relates to ethical behavior. The general importance of ethics seemed to be primarily influenced by the student’s literature research. For his thesis he supported the importance of ethics predominantly with literature which may have also been a consequence of a desire to produce many pages.

The clusters including one or more cluster-groups have been excluded from further interpretations since they are prone to a higher level of pure chance. Especially the ESL- (English as Second Language) background of the student and the project participants as well as the strong cultural influence on ethics and its semantics (Enderle, 1997) require interpreting the analyzed word similarities with great caution.

NVivo9 allows also analyzing the frequency of coded concepts and Table 2 shows the frequencies of the concepts listed in Table 1 within the student’s thesis.

<table>
<thead>
<tr>
<th>Coded concept</th>
<th>Number of references coded</th>
<th>Number of references coded [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Importance of ethics</td>
<td>27</td>
<td>47</td>
</tr>
<tr>
<td>Controlling tools</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Improves competitiveness</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>“Golden Rule”</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Ethics office</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Role model</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>Personal misbehavior</td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td>Ethics code</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Trust</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>Ethics exam / oath</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Education from childhood</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Influence of bidding regulations</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Consequences unethical behavior</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>58</strong></td>
<td><strong>101 (rounding consequence)</strong></td>
</tr>
</tbody>
</table>

This confirms the qualitative analysis in that the importance of ethics for a construction project became very clear to the student. Furthermore, the concepts of personal misbehavior as the core issue, role model, trust and the “Golden Rule” were found more frequently than the other concepts, and hence, seem to play a more significant role in the student’s ethics concept than the other concepts. Some concepts, the improvement of competitiveness, ethics office, influence of bidding regulations and the necessity of consequences for unethical behavior, played a role at some point of time during the 89 days, but were not mentioned anymore in the student’s thesis. This confirms the result of the qualitative analysis which showed that these concepts were not part of the student’s ethics concept towards the end of his final year project.

5. Conclusion

It was found that the student’s ethics concept changed throughout his final year project. At the beginning he considered the topic unimportant, but gradually became aware of its significance without a clear conceptual understanding. His final concepts were, that personal misbehavior is the core issue, and that clear expectations, a role model, applying the “Golden Rule” and trust between project participants are the primary solutions for a variety of ethics issues on a construction project. Although literature had some influence on shaping the student’s
ethics concept, especially regarding the “Golden Rule” and the necessity for clear expectations, the main influence have been the discussions with the project manager and the workshop discussion which influenced his concepts regarding the core problem (personal misbehavior), the role model concept and trust.

5.1 Limitations

Yin (2003, p. 34) mentioned that construct validity, internal validity, external validity and reliability influence the quality of case study research results. For the case study presented here the following can be said.

First, construct validity (i.e., utilizing correct measures) has been established by using a variety of sources (i.e., interviews, discussions, documents, observations). However, language was the major means to collect data, and the quality might have been influenced negatively by the ESL-context of the student and the construction project participants. Secondly, internal validity (validity of explanatory or causal factors) has been limited to the obvious causes of ethics concept change (i.e., interpersonal interaction and interaction with literature). The supervisor tried his best to appear objective and neutral, but the student may have perceived signals which may have manipulated his ethics concept. Thirdly, in addition to the described influencing factors, external validity (validity to generalize findings) depends also on the student’s personality which has not been further analyzed within this study. Also, during the encounters with the student and during the workshop there has been an influence on the project participants and, consequently, their ethics concepts might have changed as well, which may have had again an influence on the changes of the student’s concept. Fourthly, reliability is ensured by establishing a logic model and following a case study protocol which allows repeating the case study and leading to the same results within the limitations of the above described limitation of external validity.

5.2 Implications

If an engineering student from a region, which is considered to be known for ethical issues, is changing his ethics concept during a final year project, then this may be true for engineering students of other regions as well. Increased sensitivity towards the topic and utilizing the analyzed causes to increase students’ ethics awareness may contribute towards a more ethical global construction industry in the future.

It has been shown that the attitude and concept of the project manager had a major influence and this needs to be considered when choosing a project for a similar final year project or a semester assignment. A project manager with rather low ethics would have led to a different result. However, literature research has been shown to raise new concepts which may not have been discussed without. In addition, the open atmosphere of a workshop impacted the student’s concept, whereas the follow-up interviews with the workshop participants were of limited value which may have been the result of the questionnaire based style of the interviews and the time-pressure of the interviewees. Open and unguided interviews may have been more fruitful.

5.3 Future Research

Future research related to ethics concepts and influencing factors on construction projects should consider the impact that the student had on the project participants. Furthermore, the role of engineering education in shaping ethics concepts of practicing engineers would require further discussion. Finally, a longitudinal study covering a longer period of time and further case studies would be necessary to verify the conclusions which have been drawn here.
References


Robinson S., Dixon J. R., Precece C. N. and Moodley K. (2007). Engineering, Business and Professional Ethics,


