Process Report

Experts in Teamwork- TPG-4851

Gullfaks Village 2010

Group 5

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SUMMARY

"Many times a day I realize how much of my own outer and inner life is built upon the labours of my fellow men, both living and dead, and how earnestly I must exert myself in order to give in return as much as I have received."

Albert Einstein

Group work is a challengeable field of study and also is considered as an efficient technique of learning. The idea behind EiT is to help students become aware of their own expertise and find how they can use their skill in a multi disciplinary group. Being member of an international team and involved in team work helps each student to reach a better insight of him or herself.

This report has tried to elucidate the process in which our group went through it for reaching its goal. Model used for analyzing development stages of our group, is Bruce Tuckman's final description of the stages of group development. It has been tried to find relationship between each stage and challenges that we experience in our group. Diverse understandings of each group member at each situation, is used to help the reader to become familiar with our group atmosphere.

Being engaged in a technical project and trying to overcome it's different challenges, at the same time as trying to overcome issues related to a team consisted of different backgrounds of each team member, in addition to different nationalities and languages, had provided a suitable base for learning about multi disciplinary team work in an international academic environment.

The format of this report is based on narration of each situation in reality and its link to theories related to team work.

As a conclusion, and according to our group total belief, being involved in teamwork and at the same time facing a technical challenge can be valuable for us especially when we are going to start working in industry. Facing different challenges that occur during team work and practicing to find solutions to them by help of facilitators, led our group through a path which was made for this purpose.

1 INTRODUCTION

The aim of the Experts in Team (EiT) course is to facilitate students in applying theoretical knowledge and learn practical skills in interdisciplinary teamwork. The development of student communication and cooperation with the other is also involved in the aim. It is natural for people who have different social-cultural and linguistic orientation to experience difficulties in working together. Difficulty in synergizing ideas could also result from differences in academic background. This experience is actually what the process tools are expected to correct.

In this report we outline how our group's process has evolved throughout this project. "The group process refers to *how* things are done, rather than what is done" (Schwarz 2002:23). This includes making decisions, solving problems, handling conflicts, and communication. In this report we will presents the application of process tools in shaping the behavior of the group of working together towards the achievement of our group's goals. We will highlight how the team process has influenced work on the project and what the team has learned about social interaction in a multi-disciplinary setting. The member reflections (in the end part of the report) are also considered since they are the bases for the use of process tools.

2 GROUP MEMBERS

In this chapter group members will introduce themselves and they will explain about their preliminary expectations before the course start.

Alireza Shakernia:

I am Alireza Shakernia, 29 years old and maybe the most aged one in the group, coming from Shiraz, a city known as city of flowers and nightingales in south west of Iran. I finished my bachelor studies in Industrial Engineering some years before this, and worked for three years in a telecommunication company. Four years ago, I got married and still, I have no child, right now I am leaving away from my family and waiting for her arrival.

Working for three years, I found the need of studying in myself, I was very interested to study in an international environment and after receiving a seat in master program "Project Management" in NTNU, I moved to Norway and in second semester I shifted my studies to RAMS (Reliability, Availability, Maintainability and Safety).

Curiosity is my most significant characteristic which urges me to investigate any unknown field in my life. I don't use to talk too much and I have a little tendency to work lonely most of the time. When I understood that we have to take a course called EiT and the idea behind it, is to develop team working skills in students, I didn't have any negative thought toward it, and I was very curious to know what will go on in this black box. After being involved in the course, I found it as a chance to interact with other students from different nationalities and cultures, in a team that I had no authority and choice on selecting team members, and it was a chance for me to develop this ability in myself to work with others in that situation.

Ivana Maza Vasquez:

My name is Ivana Maza and I am 29 years old, I was born in Venezuela. In 2003 I got a Mechanical Engineer degree from Universidad de Oriente, after that I spent 5 years working in a refinery, as rotary equipments inspector. In 2008 I got married and moved to Norway as my husband is half Norwegian and half Venezuelan. I started in NTNU in august 2009, I decided to study to get a petroleum engineering profile, and also because I thought it was going to be easier to study while I'm learning the language and get used to Norway; it is difficult for me to start studying again after 6 years but it is also a very positive experience to study a different career which is very important in this country.

I have a lot of experience in teamwork; in Norway I have had better experiences than in Venezuela, I am very glad that everybody is very enthusiastic. About me I can say that I am very friendly, hard working and calm, but not a controllable person, I am very talkative person. I am quite positive and peaceful.

As I am cursing the first year of the master in Petroleum technology my initial expectations were to learn more on this topic, and to improve my teamwork skills.

Nathalie Hemmingsen:

My name is Nathalie Hemmingsen. I'm 22 years old and am from Harstad in the northern part of Norway. I'm in my 4'Th year of studies, where my specialisation is Petroleum geophysics. I concider myself as an outgoing, friendly, social and hard working girl. I'm mostly in a good mood and I love talking with people, that be with old friends or new ones. I'm also one of those persons who love to organize, and I need to have control of things that is being done. When I'm assigned a task I always work hard to get the best possible result, and if I get into some kind of trouble solving it I never give up. This is probably my strength considering group work.

My weaknesses on the other hand may be that I can get a bit stubborn when discussing something that I'm devoted to. When facing problems with solving the assignment, I often want to manage to solve them myself and not get external help until it's completely necessary. This will of course give me a better understanding of things, but some valuable time can also be wasted.

I chose the Gullfaks village, because I wanted a village with a relevant subject for my education. I also wanted to be able to contribute with some knowledge when starting working on the projects.

Before starting the EiT course I really didn't know what to expect. I was a bit nervous on what my group would be like, especially when thinking about that this is an international village. My biggest fear was that me and my group members wouldn't go along at all and that we would have a complete culture crash. I was also a bit sceptical regarding the whole course, as I only knew what other students have told me, but I had decided to be positive to it and make this a fun experience.

Niken Puspa Handayani:

My name is Niken Puspa Handayani, I was born in Sukabumi - Indonesia, 26 years ago. I have graduated from Bandung Institute of Technology (ITB) majoring in Ocean Engineering for Bachelor Degree and I have worked for three years at National Development Planning Agency (Bappenas) which is one of the Government Agencies in Indonesia dealt with development planning in national level.

Currently, I am a Master Student in Coastal & Marine Civil Engineering at NTNU under Quota Program. I am interesting in coastal and offshore engineering particularly pipeline. I choose to study abroad because it is an opportunity for me to get new experiences. Live with different culture and international environment can develop my personality.

I really love doing sport, travelling, and watching movies. I am not very talkative and good in explaining things. I think in my group I am the one who doesn't talk so much. I choose Gulfaks village since this topic very interesting for me and related to my study background. My expectation from this village is that I can develop my knowledge and acquire with the latest offshore engineering development and improve my communication skill.

Terje Borlaug:

My name is Terje Borlaug. I am 24 years old boy coming from a place called Stathelle, a 2 hours car drive south from Oslo. I am now studying Msc in Natural Gas Technology at NTNU, after finishing my Bachelor in Energy Technology from Telemark College University. I am a positive social boy, always with a smile. I like sports, especially football, both watching and playing.

My strengths regarding Experts in Team is that I am a team-worker; I feel that can work efficiently with most kinds of people and I like to back the group up when facing problems. I also have a decent computer knowledge which can be part of my contribution.

One of my weaknesses is that I may use too much time on problems, without seeking external help. This can be time wasted for the group work.

The reason for choosing the Gullfaks Village was that I wanted to learn more about the oil industry, challenges and areas of focus. This village is also quite relevant for my education, since my bachelor degree was not focusing on the oil business - topics at all. I also wanted to improve my English, so therefore I chose an international village.

When the village started I was a little bit concerned about what kind of group members I would get, if we were going to get along. Since it was a international village I wondered if the difference in culture could be a problem. In addition to that, several friends of mine had spoken negatively about Experts in Team. Despite that I kept an open mind and looked at it as an opportunity to meet new people, practice team-work, and practice English.

3 STAGED DEVELOPMENT OF OUR GROUP

The interaction between the members during the project, especially through discussion and exercises, has stimulated the development of our group. For example, the discussion on which topic we wanted to choose indicated the initial development in our group. This is because it was the basis for our group to start working and it was the first time we made a decision. Here, we will illustrate the development of our group in more detail based on Tuckman's sequential stage theories which is focus on specific issues at the forming, storming, norming, performing, and adjourning stage.

3.1 THE FORMING STAGE

The forming stage period of our group happened in the first few weeks. On the first meeting, the village coordinator facilitates us to get to know about each other through the competence triangle exercise and sport activities (bowling and go-kart). Unfortunately only four members attend the meeting because Niken was in Indonesia. Through the competence triangle exercise we learned about each member's abilities and characteristics. In this way the members could easily figure out how to act in the group. The group atmosphere is very friendly and open.

> *"Today, I met my group for the first time. In the beginning I am a little bit nervous but when I met them I am really happy because they all very nice and friendly. They were very talkative and open, so I felt it will positive to working with them".*

> *Niken's log, January 20th, 2010*

On the second meeting we discussed about which topic we will choose. The topic was decided through consensus since we want to avoid ineffective discussion. The village coordinator offered us 6 (six) topics and we had to choose one of them. All members gave a score for each topic based on their priority, which should consider their academic background and on which they can contribute more. Each member gave highest score for their first priority and so on. After we added all the scores together, we agreed to choose Challenge no 3: "Improved oil recovery with smart wells" as our topic.

> *Today we have discussed which challenge we would like to work with. We tried to find the strength of the group members, and use that as a basis for our choice. We ranged the different challenges from 1-5, and then we summed the points. The task with most points became our 1st choise. All the tasks seem interesting. We all liked this way of making decisions. Our 1st choise became challenge no 3, quite surprisingly.*

> *Group's log, January 20th, 2010*

Unfortunately there was another group who also wanted the same topic as us, so we decided to discuss the topic again on the following meeting. We choose the topic again in

the same way as in the previous meeting, and we were a little bit surprised because our decition had changed to "Improved oil recovery with Water Injection and Water Alternating gas". It seemed that the team members have changed their priority and interest. Finally we all agreed to take "Improved oil recovery with Water Injection and Water Alternating Gas" as our project.

On the third meeting, we were facilitated by the village facilitator in defining a cooperation agreement for our group. The cooperation agreement is defined through discussion where all members were allowed to give an opinion on what kind of rules should be applied in our group. We chose this way because we want everybody notice and agree on the rules.

Tuckman described the forming stage as "a period of uncertainty in which members try to determine their place in the group and the procedures and rules of the group". The forming stage also includes feeling and behaviors of: (a) Excitement, anticipation, and optimism; (b) Defining the task and team concept; (c) Determining acceptable group behavior. It seems that our group's development was in accordance with the formation step described by Tuckman (1965).

3.2 THE STORMING STAGE

During the project, we have had several conflict and disagreement among the members. This indicates that our group has moved into the next step of development.

The conflict and disagreement in our group arise when the task became complex and some members felt that our group was not effective, since we had no clear task distribution among us. Because of this and us not having a person to control our work we were unorganized while we worked un part A, and it finally led us into having a conflict.

The first conflicts in our group happened in week 7 and, arose because of expectation differences between the members. Since the task on our topics was heavier on petroleum engineering, Alireza wanted the group to do Risk Analysis in addition to the assignments given us to accommodate his expertise. Others thought that it was too hard to be applied in our group since the initial task was big enough, and we needed to spend a lot of our time to learn about eclipse software and reservoir engineering, so it will be risk if we add more load to the existing task. To solve this disagreement, we discussed it deeply. Each member gave their opinion and since Nathalie did not come to the meeting, we called Nathalie to hear her opinion too. After we had listened to each member's opinion, we agreed to do the Risk Analysis if we have enough time to do it. A good communication in the group has played a key role in our debates since we want to maintain a good relationship among the members. Based on Aronson's definition, the conflict we had was interpersonal. Aronson et al. (1997) defines the interpersonal conflict as "a tension between two or more individuals who have incompatible goals".

We analyze the conflict in our group as low conflict because we can manage it without causing uncomfortable atmosphere in our group, and the conflict can be solved through discussion.

It seems that this period was the period of the storming stage in accordance to Tukman's theory which described the storming stage as "a period when conflicts begin to arise as members resist the influence of the group and rebel against accomplishing the task."

3.3 THE NORMING STAGE

The conflict, discussion, and cooperation in our group made the group more integrated and the group cohesiveness increased. It can be seen from the members' behavior in doing the task. We were helping each other and no one felt afraid or ashamed to ask a question to another member. We were getting know more about each other; indeed we have had conversations about personal things. The cohesion in our group mostly arises due to the fact that the members feel that they are working towards the same goal.

When we were doing the part A of the project, we did not divide the task among us. The tasks and the report were done spontaneously and it was not organized well. The commitment of each member was also low since they did not have a clear responsibility. As the project became more complex, we realized that we should divide the tasks among us. We needed a coordinator who could distribute the tasks and keep the members to stick to the deadline. This is also our effort to make the member more committed to the project.

It seems that this period was the period of the norming stage in accordance to Tukman's theory which described the norming stage as "a period when the group establishes some consensus regarding a role structure and group norms for appropriate behavior. Cohesion and commitment increase".

3.4 THE PERFORMING STAGE

As the deadline came closer, the group's effectiveness increased. Each member focused on his or her task and the communication among the members was more intensive. Since Nathalie, Ivana, and Terje were more familiar with the eclipse software and have more knowledge on the technical challenge, they were more focused on the simulation part and the project report, while Niken and Alireza were focused on the process report.

We agreed to have additional meetings to finish the task and we also used the Wednesday meeting optimally. During this period we have a better understanding of each other's strengths and weaknesses and felt close attachment to the group. When a member needed some help from another member, he or she could receive it with no problem.

It seems that this period was the period of the performing stage in accordance to Tukman's theory which described the performing stage as a "period when the group members become proficient in working together to achieve the group's goals and more flexible in patterns of working together".

3.5 THE ADJOURNING STAGE

Getting closer to end date of semester, we were working more and more on our project and the process report. In addition to Wednesday meetings we also had gathering in some other days during the week. The close cooperation between members and also sharing ideas we needed for process report helped us to know more about the feelings of each member regarding the others. Discussing about our feelings, writing our expectations and discussing the results of LIFO test, let us know about each other feelings more and we feel that our group is more cohesive now, when it is closing the last stage of its development. As the group draws to a close, the members gather in and review the fruit of their learning, and prepare to transfer it to life in the wider world outside. At some point in this process separation anxiety will loom up – the distress at parting after such trust and depth of interaction. It can slip the group back into defensiveness (i.e. forming) unless the group handle it carefully. Firstly by accepting that the end is near, secondly by dealing with any unfinished business, thirdly by celebrating each other and the final product and fourthly by saying a warm, friendly farewell in the group and one-to-one. (Hogan,2003. p 408)

4 EXERCISES, TEST AND FACILITATION

During the semester there were some tests and exercises arranged by village coordinator to let the members find out about their own personal skills and also guide them through group work. In villages, putting different people in a group without any previous knowledge about their personality may raise some challenges. Using exercises, tests and receiving constructive feedback in different phases of group development was helping the team to know if they were on their way or not.

4.1 THE COMPETENCE TRIANGLE

In the first session of the semester, our team experienced an exercise called "Competence Triangle". The idea behind this exercise was to help the team members to introduce themselves to the others by showing their abilities and positive characteristics. Performing this exercise in the early stage of group forming, provided some useful introduction of group members and also encouraged each team member to tell others about him or herself.

This exercise was consisted of a triangle; each side had a name,"Skills","Knowledge" and "Personal Competence". Then each member had to write 3 of his or her skills and put them on the outer part of these sides. After that, we selected the most significant one on each side and put it in the middle. Now in the middle we could see skills, knowledge and personal competence of our group.

4.2 LIFO TEST – A WAY FOR CREATING PEAK PERFORMANCE STRATEGIES FOR INDIVIDUALS AND TEAMS

Our facilitators provided us with a test which is called "Life Orientation Test". The test is used to help teams to finds optimum strategies for reaching their goals, resolve conflicts and increasing communication skills.

The test was consisted of two parts, the first part was performed by each person individually and the result was submitted online. Next part was done after some instructions provided by the test instructor in the village.

The test result shows the abilities of each test taker in two different situations, "Favorable and Unfavorable". The difference between this two results shows that each person how will act under normal attitude and under stress.

The outcome of the test provided the following information about our team members:

Alireza : Is a "Conserving/Holding-on" person in favorable situations and his "supporting-giving-in" virtue is also considerable. Under unfavorable situations, he is a "supporting-giving-in" person besides being "Conserving/Holding-on" and "Adapting/Dealing-away".

Alireza thinks that the LIFO test is designed well and its results are close to the reality. He says that he was confused in interpreting the results in the beginning but later on, he could get the point. As an overall conclusion, he liked the test and its approach to career investigation.

The other members feel that the test result for Alireza is the same as in reality. We think he is a very calm person and he always willing to help the other members. He has contributed with his "Conserving/Holding-on" behavior, his work is accurately and he shows carefulness in his work.

Ivana: When the favorable atmosphere is dominant she is a "supporting-giving-in" person besides being a "Conserving/Holding-on" person. If the atmosphere changes to unfavorable status, her behaviors will tend to be like an "Adapting/Dealing-away" person or "supporting-giving-in".

Ivana feel that the result of LIFO test is close to the reality. But she also feels that she is a controllable person who always gives her opinion and reasons to support it.

The other members also feel that the test result for Ivana is close to the reality. We think she is a positive girl and she also likes to have things done properly.

> *Ivana is good at coming up with new ideas and she has a "mother role" in the group. She is always making sure everybody is OK.*
>
> *Nathalie's log, January 20th, 2010*

Nathalie: According to the test results, she is a "Controlling/Taking-Over person" and her reactions in unfavorable situations may not show any significant change(increases a little) in the same behavior, and her "Supporting/Giving-in" aspect may be decreased.

Nathalie feels that the test result is fits her quite good since she is a person who likes to have control over things that are being done, and she often find that people rely on her knowing what is going on at what time. She love challenges and work best under pressure. It's said that the goals of a C/T person is to «Be competent» and «get results». She feel these goals also fit with her personality; She always want to get the best possible results, and she search for the knowledge needed for this to be possible. Under unfavorable conditions her numbers are quite similar, but her Support/giving part is the one who changes the most. She guess this is something that fits in the reality, because when she is working under stress and pressure because of for instance a deadline she is not that good in being helpful to other people. This is probably because she is all focused on her part of the work and she doesn't want to waste any time on discussing what for her is irrelevant issues.

Beside as a control taking person, the other members feel that she is also a support giving person. She uses her control taking skills in a good way and always explaining why she wants to follow a certain direction. She also willing to help the other member and never push the other member to do something.

Niken: Being a "Supporting/Giving-in "person is Niken's most significant characteristic under favorable situations and it will remain the same for her under unfavorable situation, too.

Niken feel that the result of LIFO test is fit her well. The group sees her as a supporting person. She likes to work a lot, even when she initially knew how to solve the problem. She was always trying to learn more, and to collaborate with the group in any way.

Terje: In favorable conditions Terje according to the test is a "Supporting/Giving-in" person, but at the same time a "Conserving/Holding-on" and a "Control/Taking-over" person. In unfavorable conditions Terje is a "Conserving/Holding-on" person (increases) and a "Supporting/Giving-in" person (decreases).

Terje somehow agree with the test result. He think that he is a "Supporting/Giving-in" and a "Conserving/Holding-on" person, but he only feel partially that his profile fits a "Control/Taking-over" person. This characteristic is very dependent on what kinds of other personalities involved in the group work. If there are any strong "Control/Taking-over" persons in the group, he will most probably not show a very strong behavior of "Control/Taking-over". In the end he thinks he is quite flexible when it comes to fill different roles in a team. In this project he feel that he have used his "Supporting/Giving-in" aspect to the largest extend and "Conserving/Holding-on" next.

The other group member agree that Terje is a "Supporting/Giving-in" and a "Conserving/Holding-on" person but we haven't had the opportunity to see him as a control taker. This may be due to the project's topic is new for him so he is not showing this part of his personality. About him we can say that he is a very easy person to talk with, very hard working, and very efficient doing his job. He is a genius with computers, so we always asking him to help us. Then he shows his support giving characteristic very good.

As mentioned before, in first phase of forming the team and writing the contract which will be gone through later in this report, we decided that we do not need a leader in our group. We started to interact and do tasks just buy making needed decisions at necessary time.

Doing LIFO test and the results from it, was a good reason for everybody to accept a person as a leader or so called coordinator. From the results of the test, we found that Nathalie has

the ability to control and based on her behavior in the group we selected her as the team leader.

In plot 1, you can see an overall result of our group member's LIFO test.

Lifo test favourable conditions

S/G

A/D

C/H

C/T

Alireza

Ivana

Nathalie

Niken

Terje
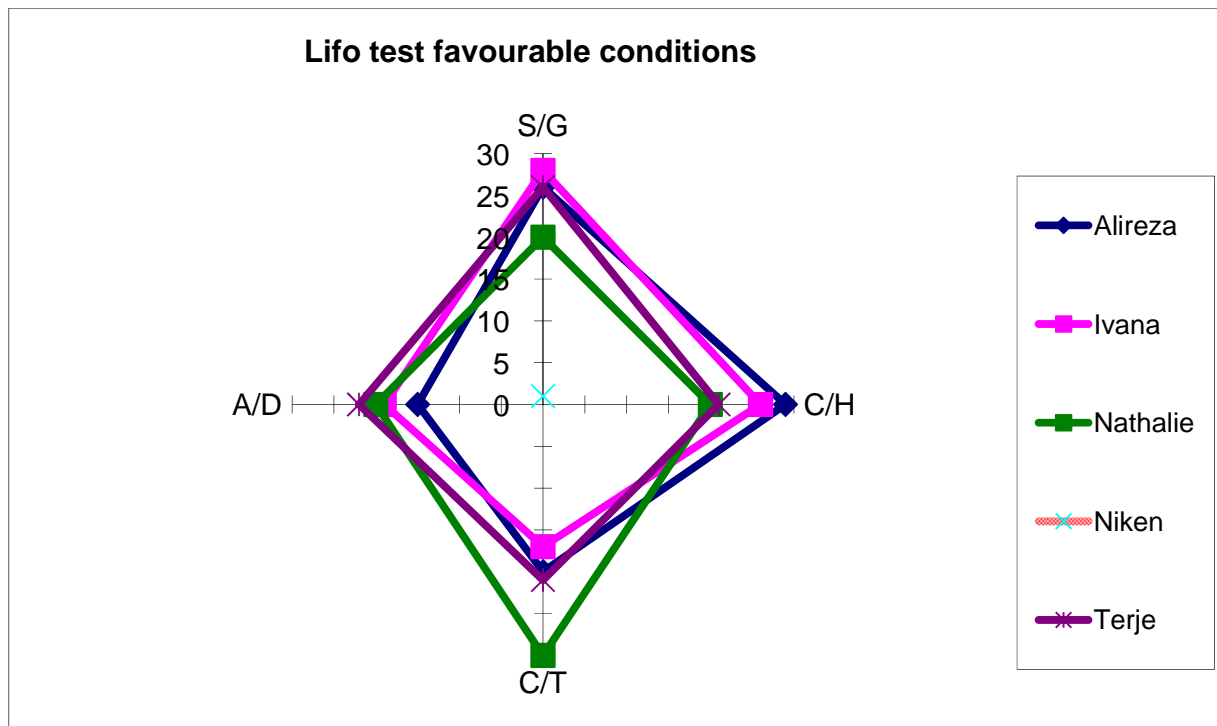
4.3 TEAM MEETINGS

In different phases of team development, we were guided through some other exercises like "team meetings" and "cooperation in the team".

The purpose of doing "team meetings" exercise was to understand about our feelings about the team meetings and to help us to start a kind of discussion regarding the communication in our team.

> *"Today we have made a working plan and divided responsibilities between each others, I feel very comfortable with it, and now we all have to work hard to accomplish our goals"*

> *Ivana's log, April 7th , 2010*

The overall feeling of our team was so near to each other, showing the friendly and open atmosphere in the group despite of some disagreements and different ideas. This exercise led us to create a plan for our future activities.

At the beginning, our team didn't have a kind of plan, to show each person's task and duty in a clear way. After some weeks being involved in part A of the project, and feedbacks from discussion after exercise "team meetings" we reached to a agreement that we need a plan showing each person's task in order to define the responsibility of each person. In our plan we defined also availability of each member during the weeks connected to Easter holiday. We tried to plan everything and consider availability of team members in order to reduce negative effect of unavailability on the final goal of the team. The plan itself, was one side of the coin, the other side was how to execute it. As we had started our work on project part, we decided to continue our current way of working and we used the plan just as a controlling tool to help us find our status during different stages of our project work. We found that it is not easy to work exactly according to the plan, but having a plan is very useful and it doesn't let your team effort deviate from the goal. Looking more precisely to our plan, we found our plan optimistic to some extents, and may be the reason it was hard to be executed. After starting the simulation, we encountered with some technical problems that we hadn't predicted in our plan and it was the reason we called our plan an optimistic one.

4.4 COOPERATION IN THE TEAM

"Close cooperation between theorists and practitioners can be accomplished ....if the theorist does not look toward applied problems with highbrow aversion or with a fear of social problems, and if the applied psychologist realizes that there is nothing so practical as a good theory." (Kurt Lewin,1951,p.169)

Late in the semester, we experienced another exercise. The exercise was conducted in the stage that our team had found its way, and indeed our team was in the Performing stage of its life.

The main outcome of this exercise was to understand how everybody feels about working in the group and also how our team is performing from view point of each member. This exercise and the questions in it were somehow similar to "Team Meeting" exercise, and due to this similarity, indeed, it couldn't play a strong positive role like the previous exercise.

When each team member compared the outcome of this exercise with others, the result was evidence to the harmonized atmosphere of our team as we have described in this report.

4.5 FACILITATION

"The purpose of facilitation is to increase the student's awareness of the teamwork through reflection on their social interaction". (Guide to the process report-2010)

Sometimes, as a team, we needed an external feedback on our process. Presence of two learning assistances for process, Ida and Daniel, and also Jan Ivar as assistant for technical part in our village and their friendly way of interacting with each group in different situations, helped our group to find some constructive ideas we needed to improve our team progress in reaching the goals.

> *"Today, we were working on our process report, but it was like a blind spot for us how to weave theory with situations in our report. Ida could provide us helpful comments that helped us on how to form our report and also she provided us some feedback on our current status."*

> *Alireza's log, April 21st, 2010*

4.6 FIRST DAY – A HAPPY START

The forming the groups in our village was done by the village coordinator, so members didn't have any role in the early forming stage of the groups.

Arranged by the village, in the beginning of semester, some group activities where conducted in order to increase the team members' interactions and helping them to speed up their coordination. This activities helped group members to know each other better and also let them to communicate more in the early phase of the group forming. Taking part in some group activity under a shared name, that all group members agreed on, helped us to feel belonging to the team.

4.7 TRIP TO BERGEN AS A MOTIVATIONAL TOOL

According to Gray (1990,p.472), "motivation is the employee's(team member) desire to perform".

On March 3rd, the whole village had a trip to Bergen to visit the Norwegian oil company, "*Statoil"* to meet each group's project supervisor there. Knowing that our project is going to be evaluated by a supervisor outside the academic environment, and also having a near contact with industry, receiving the comments and their feedbacks on our project, increased the motivation of each team member to perform in the best way and reach the best result. This also affected the inter-team communication and interactions and helped us to find the best way of reaching the desired result.

During the trip we also had the opportunity to interact with other members of other groups and discussing about their progress.

Visiting different units of the company provided us a good insight on the real world and how the theory we were using looks like in practice. Getting familiar with 3D simulation and geological investigations provided us a good vision to oil industry in practice.

5 GROUP DYNAMICS

We are five individuals with different cultural and scientific background who were assigned to group 5 to work together on the same project. This was the start of a process which eventually should form us as a group.

We did not have a special discussion about our group goals, but it has been stated implicitly during the process; we want to have a good grade on the course. In addition to this common goal of getting a good grade, we all also have our individual goals that are stated in the presentations about each group member.

As we are becoming a group, a group structure develops. The structure of our group can be identified through the roles and rules applied in our group. The roles and rule in our group were formulated during the forming, storming, and norming period as illustrated before.

The diversity in our groups led us to have a conflict. For instance, Alireza wanted the group to do another task which is Risk Analysis in our project, beside the tasks which have been given by the village coordinator to accommodate his expertise. Others thought that it was too hard to be applied in our group since the task is challenging enough. We thought that we will use a lot of our time to learn about eclipse software and reservoir engineering, so it will be risk to add more load to the existing task. To solve this disagreement, we discussed it deeply. Each member gave their opinion and since Nathalie did not come to the meeting, we called Nathalie to hear her opinion too. The hardest discussion was between Ivana and Alireza. Sometimes Ivana start to talk even though Alireza have not finished talking. But then Alireza asked Ivana to let him finish his talk in a proper way, and Ivana accepted it with no hard feelings. After we had heard each member's opinion, we agreed to do the Risk Analysis if we have enough time to do it. A good communication in the group has played a key role in our debates since we want to maintain a good relationship among the members.

> *We are very happy today because we can solve disagreement happened in our group in a good way. Nobody feel angry and no heart feeling between us. Even though most of the member did not agree with Alireza, we respect Alireza's opinion and we agreed to do his wish when there is enough time for us to do it.*
>
> *Group's log, February 24th, 2010*

In this part, we will illustrate how the team roles and rules have influenced our group-work; how is the leadership in our group, and how decision-making process has worked out for us as a group.

5.1. Differentiated Roles

The roles in our group were developing naturally. We think that the personality of each member give a contribution to the formation of our member's roles. For example, Nathalie is a control taking person and it lead her to behave as a "front girl" in our group. She always taking an initiative to speak up as our group representative and we are comfortable with her leadership skills because she use them in a very good way. She never pushes anyone to follow her opinions. She appreciates the other members and treated them as her colleague. Her behaviour in the group makes the other members agreed to choose Nathalie as our coordinator. A role may be defined as "a set of expectations governing the appropriate behavior of an occupant of a position toward occupants of other related positions" (Johnson & Johnson, 2006). In the beginning of the project, a role of each member is not clear, but as the time goes by it is clear that each member playing different role.

The Coordinator

Nathalie is our coordinator. In the beginning we felt that we don't need to have a leader or coordinator. But as the project getting complex, we decided to choose a coordinator among us. The election is conducted through consensus and all members choose Nathalie as a coordinator without any doubt.

The "Eclipse" Guy

Terje is our "eclipse" guy. Eclipse is a software which is used in the project. When the other member wants to ask about how to run the software, they usually ask him. As the time goes by, Nathalie and Ivana shared the role with Terje.

The Resource Person and Hard Worker

Ivana is our resource person together with Nathalie since they have a basic knowledge on oil exploration. Ivana is also a hard worker in the way that she usually wants to contribute in big portion of the project.

The Analyzer

Alireza is the one who tries to observe the team behavior and it made him to provide some suggestions to select a leader for the group. His informal role is to analyze the team dynamics and provide necessary feedback to the team.

The Resource Keeper

Niken is our resource keeper in the way that she always brings the required document when the group meets. The rest of us usually ask her if they need some document regarding the task in the project.

5.1.1 REFLECTION ON GROUP ROLE AND RULES

In the beginning of the project, we agree not to choose a leader or coordinator among us. We hope that a coordinator can be emerged from the process. But it didn't work. When we worked on part A of the project, not all of us were working at the same level; maybe because only few members had sufficient knowledge on the topic, and because we didn't divide the task within the member. None of us initiated to divide the task. We just did the task in part A spontaneously. We did it this way because we want everybody feel free to work on the project based on their expertise and interest.

In some way, we were able to solve this problem. We realized that we should define a role for each member by dividing task within the group, and we felt that we need a coordinator rather than a leader. In the discussion on which type of leadership we wanted in our group, it turned out that the group members had different opinions about how it should be. In general all members did not want to have a person with the title "leader".

> *Niken and Alireza think that we need a person who can distribute tasks among the group members and shall respect the group member's opinions; they thinks that a leader in our group shall have the function of being a facilitator or a coordinator.*
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> *Nathalie, Ivana, and Terje have an opinion that if everyone contribute and take responsibility there is no need for an explicitly appointed leader.*
>
> *Group's log, March 10th, 2010*

It is clear that there were different opinions on the type of leadership we wanted in our group. After some discussion of different aspects of the leadership, we agreed appointing Nathalie as a coordinator. The tendency to choose Nathalie as a coordinator has appeared in the beginning of the project. The other member always relies on Nathalie to speak on behalf of our group when the village coordinator asks about the group's progress.

In our group, it is agreed that all members should be involved in decision-making processes and the decision should be taken in democratic way. It means that the group will discuss the issue and a decision is made when all group members can support it and agree to implement it. Levin and Rolfsen (2004) see this as "an open and creative process, where everyone can speak their mind and the team can learn something by looking at the issue from different angles".

In general, all members are eager to learn and do their best in the project. By dividing the task, we believe that each member will commit more in taking their responsibilities. In

order to integrate the actions of all group members and to regulate the behavior of all members, we have defined some rules in one of our first meetings. The rules are as follows:

- It is important to make a plan in the beginning (and stick to it if it is good).
- Every member of the group should stick to the deadlines so we won't get delayed.
- Have effective discussions
- Make the decisions democratically when possible.
- Work as a group, help each other.
- Divide the tasks and make sure that everyone can manage to solve it.
- Everybody is allowed to make opinions; the group should listen to all of the members.
- Everybody should try to meet in time, let someone in the group know that you are coming late
- If someone feels that another member of the group is not following the rules; the issue should be taken up in the group.

In the course of the subsequent meetings we add some new rules. In the beginning we didn't have mentioned that we need a coordinator, but as we faced some situations we decided to have a coordinator in our group to prevent the same problems as discussed in previous parts in the future. The final rules are:

- The group needs to make a plan which consists of detailed activities and time schedule to completing all tasks given to the group.
- To increase the efficiency of the group work, the tasks need to be divided between the members of the group. Every group member should stick to the deadline.
  (a) The deadline can be adjusted if there are some technical problems faced by the group.
  (b) Even though each member has their own tasks and responsibilities; they should work as a group and help each other.

- All members agreed to have a coordinator in the group. The role of the group coordinator is:
  (a) To ensure the commitment of all members in taking their responsibilities
  (b) To make sure that every member is allowed to give opinions and to be listened to by the rest of the group.
  (c) To promote effective discussions
  (d) To act as a center of information for the group.
    - If someone in the group will be late, let the coordinator know it
    - Distribute information to all members (e.g. group decisions, meeting times)
- Make decisions democratically when possible.

- If someone feels that another member of the group is not following the rules; the issue should be taken up in the group.

These rules changes give effect to the group's performance. Since the tasks have divided among the member, the member's commitment increases. Each member knows what he/she should do. Nathalie as a coordinator also triggers us to reach our goals within the deadline, and since we have a coordinator the discussion in our group was more effective.

Our group was assigned a technical task (Part B of the project) to go through but we felt that the task is not clear enough. It was before our trip to Bergen and visiting our team's supervisor to give us more detail explanation about the task.

When we worked on the project, there were different ideas that different team members had. For example Nathalie and Ivana had two different ideas on how to solve the assignment, and it was a little complicated to decide which idea we should follow. In such a case, presence of a coordinator who could play a role similar to a leader was needed.

Evaluating our team behavior in comparison to our rules, we can see that almost all parts of the agreement were covered by members and we didn't face with rule violation in our team.

The reality with our agreement is that, we wrote some natural rules that everybody felt being necessary for healthy team relationships. So refer to agreement and check if we are behaving according to it or not were not necessary during the semester.

During the project we have had several role conflicts. This conflict is created by contradictory expectation and occurs when the demands of one role are incompatible with the demands of another role. A role conflict which is created by contradictory expectation in our group occur when Alireza role as an RAMS engineer trigger him to contribute more on the project by doing another task related with risk assessment analysis, while the other member thought that it will add the work load to the group. Another example of role conflict that occur when the demands of one role incompatible with the demands of another role is when the group wants to have a meeting on Tuesday afternoon but one of the members couldn't come because he/she has lectures or another appointment on that time.

5.2 COMMUNICATION AND DECISION MAKING

Cultural differences play very important roles in cooperative work and team decision-making in that team members' cultural background may significantly influence the ways of using information necessary to make decisions (Triandis, 1994), as well as communicating with each other (Kirkman et al., 2001). Culture is defined as a unique combination of

rituals, religious beliefs, ways of thinking, and ways of behaving that unify a group of people (Pearson et al., 2000).

In each group different norms are selected by the group members and one of those important norms is the decision making method. Its importance is due to the effect of each decision on each team member, as members are expected to feel responsible against decisions which are made. If a person in group feels that his or her opinion is not important in decision making or a kind of force is applied, opposing behaviors may be seen in group. According to Vroom and Jago (1988) there are four different methods for making decisions in groups. These methods are mentioned in Table 1.

Type	Decision Making Process
Consultative	Leader consults with group members, then leader makes decision
Democratic	Leader and group discuss issue, then vote. Some possibly weighted percentage of group members is needed to agree on a decision.
Consensus	Leader and group members discuss issue and reach unanimous agreement
Delegative	Leader delegates decision to group or subgroup to make, some times within leader's identified constraints.

Table 1. Methods for Decision Making

In our group leadership as its hard meaning cannot be seen. We decided to have a kind of coordinator rather than a leader, and exact decision making method introduced in table 1 cannot be seen. During different situations and times when it was necessary to make a decision in the group we mostly used a "Democratic" way of decision making. We experienced "Consensus" way of making a decision.

Early in the semester, all groups in the village were asked to select a technical challenge introduced by Statoil. In our group, we reached a decision in a completely democratic way that everybody had equal share on the decision.

When the challenges where introduced, each team member made a table as follows and then assigned a number between 1 and 5 as each person's priority (there were 6 challenges, but as one groups had more knowledge on one of the challenges, it was assigned to them). A sample of the tables we used is illustrated in Table 2.

Weight / Challenge	1	2	3	4	5
Geological and geophysical uncertainties			√		
Drilling of wells through depleted Brent Group		√			
Improved oil recovery with smart wells				√	
Improved oil recovery with WI					√
Production challenges by water in wells and flow lines	√				

Table 2 Sample of decision making method used in our group

Extracting weights from each table made by each team member, adding the weights and selecting the highest result, was our method for decision making in our team. Comparing the method we used with what is introduced by Vroom and Jago, shows that we were using a democratic way of decision making.

We used almost the same way for selecting our group coordinator on March 10th.

There were other situations that we reached a decision just by using a fast discussion and reaching a result.

5.3.1 A HARD SITUATION TO DECIDE

When we selected the technical challenge to work on, it was a little unknown for us what we were asked to do. Everybody was concerned about what we were supposed to do.

Alireza had an idea, but it was not acceptable to others and also he didn't know why they think so. It was February 24th and we didn't have Nathalie in our team. Nathalie's influence on our team was informally accepted by everybody. Her absence made the situation so hard that we found ourselves in room with no way out. For solving the problem, we tried to have an open negotiation and we also contacted Nathalie to have her opinion too. It was late in the afternoon that Alireza said he has accepted the dominant idea in the group, but we postponed the final decision after our trip to Bergen and receiving ideas from our supervisor in Statoil.

The point we reached after thinking about that situation led us to select a coordinator in our group, who to be known as a leader in the team, and that his or her opinion can be a kind of final decision in situations as described to help the group getting out of a closed loop.

5.4 GROUP EFFICIENCY

The first decision we have taken as a group was deciding a topic for our project. Each member gives a weight to all topics which was given by the village coordinator. The weight was given based on our educational background and in what topic we can contribute more. The result leads us to choose "Improved Oil Recovery with Water Injection and Water Alternating Gas" as our topic even if we do not have a reservoir engineer in our group. This was the period where we had a first peak of efficiency.

The chosen topic lead us to spend more time in building the background knowledge and familiar with the eclipse software which are needed in order to carry out the tasks. This period was the first inefficiency period happened in our group, because we did not have any work plan. During the day some members only browsing to get a lot of information regarding with Gullfaks field, while the other member reading the eclipse manual and try to using the eclipse software.

The efficiency in our group was starting to increase again after we are more familiar with the eclipse and Gullfaks field.

> *Today we have started to work "properly". We split into groups and worked with different parts of the assignment. We think we are done looking at the data, and the next step will be to put our results and conclusions into a report.*
>
> *Group's log, February 10th, 2010*

The second period of inefficiency was when we did not divide the task among the member and we did not have a detailed plan to achieve our goals. Some members did not know what they should do during the week because the group did not have a target for each week and the task for each member is also not clear.

> *Today is very ineffective day for me. I just spend my time without any output because my task is not clear. I hope the group will make a work plan and divide the task among the member so I can focus on my task.*
>
> *Niken's log, February 10th, 2010*

As we were more close to the deadline, we started to get concerned about how little time we had left. We started to divide the task among us and thought about the group members that were going to be away on excursions etc. To manage those situations, Niken and Alireza put up a "work" schedule which shows the progress, both on the technical part and the process part, and the time remaining. Even though we have divided the task among us, we were still in the inefficiency period because most of the members going away for excursions and Easter holiday. We did not have a complete member for 3 consecutive weeks. We use a forum on it's learning to increase our communication and monitoring the progress. The forum on it's learning enabled persons who were away to follow up and get the latest update of the group's progress. In this way he or she could easily figure out what he or she had to do for the next meeting.

We work more efficient in the three last weeks of the project. All members focus on their task and helped each other.

5.5 DIVERSITY AND TEAM PERFORMANCE

Bantel (1994) found that diversity can improve group performance by providing group members with a wider range of perspectives and a broader skills base. Daily et al. (1997) also reported that

A higher percent of multi-cultural team members with different national background responded more favorably for using a group decision support system (GDSS) in some aspects of team decision making, such as discussion of issues and expressing ideas. On the other hand, studies have demonstrated that homogenous groups avoid the process loss associated with poor communication members and excessive conflict that often plague diverse groups. There was a negative relationship between diversity and performance, meaning that group performance increased as diversity decreased (Harrison et al., 1998). Negative aspects of team diversity include communication difficulties, misunderstandings, decreased cohesion and increased conflict. These losses may result in decreased performance and satisfaction (Hambrick et al., 1998; Lau and Murninghan, 1998).

Also, there are other findings that believe in null relationship between diversity and team performance. According to our experience and also what each team member beliefs, positive effect of diversity in our group were more dominant than its negative aspect. In some situations, a polarization tendency was observed in our group due to cultural and nationality diversity. This tendency couldn't find a way to grow in our team due to the presence of a common goal that we were all were feeling responsible against. Our team members, after experiencing some unfavorable situations and investigating the results and finding measures to prevent similar cases, decided to be more cohesive than polarized.

6 GROUP MEMBER'S REFLECTIONS

The goal of Experts in Teamwork course is to provide the students with practical skills in interdisciplinary teamwork (EiT course page). Having gone through this course, now our team members have explained about their ideas regarding this course.

Alireza Shakernia:

Indeed, I didn't have a clear expectation of the course. I had read about the idea behind villages but still it was like a black box for me. I knew that I will work with others in an international group and this was making me more curious to know what this course looks like. I like to work with different people from different nationalities to know more about different cultures and beliefs. And indeed, I started the course having this in my mind that I will learn new and valuable in this course.

In reality, my expectation and what happened were close to each other. I had a background of managerial studies and also I was familiar with group and team theories. I could see those theories in practice. EiT helped me understand how different stages of a multidisciplinary group are, what challenges and other practical issues are associated with multidisciplinary groups.

Finally, I should say that, EiT was a valuable course that I think I will find even more about its benefits in the future.

Ivana Maza:

The initial impression I had of the group was quite nice; I thought that everybody was friendly and full of energy to work in the project, and over the time I have seen that my impression was correct, we have formed a friendly atmosphere every time we work together. I am also very happy that I have learnt more about them cultures, and I could show mine as well.

About the topic, I was very interested as it was in reservoir engineering, and I am studying drilling engineering, I feel this as a learning experience that will make me a better engineer in the future, as my profile will be more flexible, off course in the beginning I felt a bit nervous, because no one of us had a reservoir profile, so we could not rely in anyone, all of us had to study hard.

I feel that I have learnt a lot about simulation in reservoir engineering, I am very pleased about having this opportunity to develop other skills that will help me in my future as a worker, this village also had helped me to be a better team member, and being more tolerant with the other members. Now I can say that EIT has given me only good experiences, in our group off course we had some discussions, but they always were very healthy, only to improve our work and not to compete between each other.

Nathalie Hemmingsen:

Before starting the EiT course I really didn't know what to expect. I was a bit nervous on what my group would be like, especially when thinking about that this is an international village. My biggest fear was that me and my group members wouldn't go along at all and that we would have a complete culture crash. I was also a bit sceptical regarding the whole course, as I only knew what other students have told me, but I had decided to be positive to it an make this a fun experience.

Obviously none of my concerns were fulfilled. I'm very happy with the group, both the members and the dynamics. I feel like I have got to know four new great people and that they have learned me new things about their cultures. In fact I believe that I have learned more by being in an international and not in an all Norwegian village.

When it comes to the project part of the course I think the assignment we were given was very fun and interesting working on, but there have also been a lot of challenges during the process. Our biggest has been to acquire the knowledge needed to be able to solve the task since no one in the group had any background in reservoir engineering at all. This has been very time consuming, and at times I felt like the project were impossible for us to finish, and it is possible the main reason for why we cannot deliver as good result as I initially had pictured when the assignments were given.

All in all I would say that working with EiT has been a good experience, which can be valuable for me when I'm starting working in the business. I've not only been through a team process with people of different cultural and technical background, I have also learned much about reservoir engineering and how a reservoir engineer is working. This is valuable knowledge for me to have, since I guaranteed will work with one during my career.

Niken Puspa Handayani:

The Expert in Team (EiT) course met my expectation to a certain point. By working in a group I have developed my communication and cooperation skill. My knowledge on oil exploration is also improved. The group atmosphere is very important for me and it can affect my performance.

Before starting on the Gullfaks Village I am a little bit nervous and fear about what the atmosphere of my group would like. There are a lot of question in my mind. Will the other member accepted me as a member? Will they help me in this course since I do not have enough background in oil exploration? Are they a nice person and friendly? Those questions were answered on the second meeting of Gullfaks Village. That is the first time I met my group members. They come to me and introduce themselves. They are very friendly, nice, and open to everyone. These atmospheres affect my performance since I have never felt worked under pressure.

I have also learned that it is important to have a work plan from the beginning. Because we do not have a good plan to reach our goals, sometimes I felt not pleasure to attend the meeting. I felt that my day just being wasted without any output. But since we have distributed the task among the members, I am feeling better and attend the meeting with enthusiast feeling.

In the end we can reach our goals and produce the good job since we worked so hard and very committed to our task.

Terje Borlaug:

Experts in Team (EiT) met my expectations in some ways. I have learned a lot about the oil exploration, and the different aspects of oil production. In addition I have improved my team-working skills, my communication skills and my English both oral and written.

When we started the Gullfaks Village I was concerned about what kind of group-members I would get, what kind of atmosphere will the group have throughout the work? I was also concerned that my knowledge in oil exploration and production was too low. That was also shown the first day of the Village when we were supposed to find strengths we could use in the project, and I had some difficulties finding strengths relevant to the project. As I got to know my team-members I found out that some of them somehow were in the same situation as I, not a background from oil exploration, which was a big relief for me. When talking about the team atmosphere there were no need for concern. The group members are all open minded, nice, and easy to talk with.

One of the things I have experienced during the group work is that it is important to have a schedule for the different tasks supposed to be done. In the beginning we were not good in dividing the tasks within the group. This was improved after we had a meeting about it.

In the end I am satisfied with EiT and glad I chose Gullfaks Village.

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