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# IMPROVING TEAMWORK ABILITIES ACROSS CULTURAL DIFFERENCES Belbin group role theory applied

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## **Abstract**

The Belbin method has been applied at the education in Arctic Technology in Greenland as a way of improving the student's teamwork abilities. The feedback from the students is that Belbin is a meaningful and relevant tool and they are very engaged during the teamwork exercises. They get a theoretical approach to teamwork and a language in which they can talk about their own and each others strengths and weaknesses. There are indications that it has positive effect on their subsequent teamwork.

## **Workshop Topics**

*The role of emotions in learning:* The paper is related to a hands-on session where the LEGO® exercise can be experienced in practice.

## **I INTRODUCTION**

The first part of the engineering education in Arctic Technology from the Technical University of Denmark takes place in Greenland and is based on an active learning methodology [2]. Many of the learning activities are therefore organised as group work. However, it remains a challenge to facilitate the group projects: The students academic levels vary a lot, many of them are weak on the ability to embrace other cultures and they do not have a language for handling conflicts.

A coaching concept has been developed as part of an ongoing project funded by the Greenlandic Home Rule (Project ØSKen). The objective is to improve the students' studying skills in general in order to reduce the drop-out rate. In the ØSKen project the Belbin group role theory has been chosen as dominant theoretical framework and practical method to improve the student's teamwork abilities. This paper focuses on initiatives applied with reference to the Belbin approach.

Teamwork abilities are important for two main reasons. First, group conflicts drain the students' energy and take their focus from the academic work. If the problems are severe enough it can even make them stay home from University. They simply

learn less and this is crucial, as many of the Greenlandic students have a great challenge in reaching the required level in the engineering courses. Second, strong teamwork ability is a competence in itself. Most engineers work in teams and the Arctic Engineers will most likely have to work in multi-cultural teams when they return to Greenland after having finished their study in Denmark.

This paper discusses the outcome of applying the Belbin approach in connection with a practical exercise of constructing a LEGO® model. First, the LEGO® exercise is described including the students experiences in relation to the exercise. Second, the Belbin method is briefly introduced and the most important contributions of the Belbin theory in relation to the student's challenges in group work are highlighted. Third, the preliminary experiences of the student's benefit of the new knowledge on teamwork dynamics are presented. Concluding, the strengths and limitations of the Belbin approach as a means of improving teamwork in an educational setting is discussed.

## **II THE LEGO® EXERCISE**

The LEGO® teamwork exercise, which is the focal point in the hands-on session, is often used as the very first introduction to teamwork by Belbin consultants. In reality it does not necessarily have to be connected to the Belbin concept – it could be used as an introduction to any teamwork reflection. The exercise establishes a simulated teamwork situation where the idea is that the participants take the roles and act as they would in a real life teamwork situation. This is done by installing a team leader (chosen by the team), designing a problem that can be solved in many ways, setting a goal that is hard to reach and adding elements of competition and time-pressure, hereby challenging the team members on many of the parameters that usually set strain on teamwork. The idea behind simulating a situation where the group is under pressure is that teamwork is seldom difficult as long as the challenges are low. But as soon as pressure is installed, team members start acting differently and conflicts can occur.

In practice, the exercise is carried out by a number of groups (at least two) with preferably three to six members in each group that compete on being best at building a LEGO® model. Each team chooses a leader who gets instructions from the facilitator. A LEGO® model is placed in a separate room in connection to the rooms where the teams are working. Each team member gets a number of LEGO® bricks and it is strongly forbidden to touch the bricks of other members of the team. One team member at a time goes into the room where the model is and looks at it, but it is forbidden to bring anything into the room (e.g. paper and mobile phones with cameras). Each person can visit the room several times, but once the team starts building their model it is forbidden to see the (original) model again. The time limit for the whole exercise is 25 minutes. The winning team is the team that has built the precise model in the shortest time. The exercise is typically rounded off by a plenum discussion where the participants share their reflections.

## **II.1 Typical reflections of the participants**

The reflections, which are shared in the plenum discussion, typically cover the following issues:

1. Who takes leadership? Why?
2. Delegation of work tasks
3. Time management
4. Work strategy
5. Keeping an eye on details/quality control

As mentioned earlier these issues could be an introduction to any teamwork discussion. But in the Belbin context the pedagogical idea is to create a common frame of reference that the following introduction of the Belbin team roles can be discussed in relation to. Another important aspect is that the participants through the exercise get emotionally involved: Some participants have a successful experience, others a more frustrating one. But they all have in common that they are interested in understanding why they were seized by the task in the way they were and acted in the way they did. The exercise is a very convincing example of the fact that you learn much more from experiencing a process on your own body and interacting with other people and seeing their reaction than from merely listening to a presentation!

## **III BELBIN**

The Belbin team role theory was developed through a number of years at Henley Management College [1] and is based on empirical observations on team behaviour. The developers of the Belbin theory found that there were a number of different ‘functions’ that had to be taken care of in order to have a successfully working team. The surprising discovery was the great importance of functions that were not strictly connected to the task to be carried out. It was not enough to gather a number of very intelligent people who knew a lot about the topic that the team was working on, for them to be a winning team. The different functions to be taken care of in a group are all of equal importance even though some are social and communicative while others are more technical and academic. The Belbin developers have operationalized these insights in a theory of nine team roles.

### **III.1 The nine team roles**

The definition of team role is “a tendency to behave, contribute and interrelate with others in a particular way”. Unlike most personality tests a Belbin team role is not a definition or judgment of how a person *is*, but only a characterization of how the person *acts* in a given group. According to the Belbin approach most people have between two and four ‘natural roles’ and in teamwork in practice each person often covers several roles (as teams seldom have exactly nine members). If all roles are

covered the team will be likely to work effectively. In table 1 the nine team roles are presented. Each team role has its own strengths and allowable weaknesses.

**Table 1**

|   | Team role             | Strengths   | Allowable weaknesses  |
|---|-----------------------|---|---|
| 1 | The plant             | Creative, imaginative, unorthodox. Solves difficult problems                                      | Ignores incidentals. Too preoccupied to communicate effectively     |
| 2 | Resource Investigator | Extrovert, enthusiastic, communicative. Explores opportunities. Develops contacts.                | Over-optimistic. Loses interest once initial enthusiasm has passed. |
| 3 | Co-ordinator          | Mature, confident, a good chairperson. Clarifies goals, promotes decision-making, delegates well. | Can be seen as manipulative. Offloads personal work.                |
| 4 | Shaper                | Challenging, dynamic, thrives on pressure. The drive and courage to overcome obstacles.           | Prone to provocation. Offends people's feelings.                    |
| 5 | Monitor Evaluator     | Sober, strategic and discerning. Sees all options. Judges accurately.                             | Lacks drive and ability to inspire others.                          |
| 6 | Teamworker            | Co-operative, mild, perceptive and diplomatic. Listens, builds, averts friction.                  | Indecisive in crunch situations.                                    |
| 7 | Implementer           | Disciplined, reliable, conservative and efficient. Turns ideas into practical actions.            | Somewhat inflexible. Slow to respond to new possibilities.          |
| 8 | Completer Finisher    | Painstaking, conscientious, anxious. Searches out errors and omissions. Delivers on time.         | Inclined to worry unduly. Reluctant to delegate.                    |
| 9 | Specialist            | Single-minded, self-started, dedicated. Provides knowledge and skills in rare supply.             | Contributes on only a narrow front. Dwells on technicalities.       |

In relation to using this tool in the context of the education in Arctic Technology two points have emerged: (1) The team role theory as a frame of a more complex understanding of differences and internal disagreements and (2) the team roles as a 'neutral' language in which they can talk about their own and other team members strengths and weaknesses. This will be elaborated in the following.

### **III.2 Belbin as a framework of understanding group dynamics**

Before students learn about group dynamics and become aware of their own and others specific competences it is my experience that they often judge each other on a two-dimensional scale:

1. More or less intelligent
2. More or less hard-working

Because teamwork processes are much more complex than that, the team members often misjudge and misunderstand each other. This leads to conflicts and collaboration problems.

The Belbin theory questions the two-dimensional picture of contributions to teamwork in several ways. First of all it is an eye-opener to most students that very high intelligence (in the IQ sense of intelligence) is not necessarily a benefit in teamwork. Even more provoking is the fact that team members with average intelligence are often better at taking care of leadership, delegation and communication in the group than the members with a very high IQ. These roles are often highly estimated in enterprises. Thus, the assumption that very 'bright' students with high IQ are more 'worth' in the team than the 'normal' students is punctured.

Concerning work effort the Belbin approach questions the conventional way of looking at the team member's contributions in two ways. One is that by applying a process perspective it is highlighted that team members contribute more or less in different phases of the project. E.g. the shaper is very strong in the beginning of a project and likes to work with open agendas and getting them into 'shape'. Opposite, the completer feels lost in the beginning because he does not really know what to do. But when the project is half way and running smoothly the completer will be working very hard on all the well-defined tasks that must be done, while the shaper might be losing interest.

The other eye-opener is that work can be many things and that a team member's contribution cannot strictly be counted for example in written pages in a report. When putting all the different contributions to teamwork into words it becomes clear that less visible functions such as getting good ideas, listening to others and facilitating teamwork or taking responsibility for keeping the timetable can be just as important for the overall result of the teamwork as the concrete task of writing chapters in the report.

In general, the students have very poor (theoretical) understanding of the complex social interactions going on in the group that they are a part of and integrated in. When introduced to the nine Belbin team roles and the associated theory on group dynamics they normally recognise both their own and their fellow team members

roles very easily. They suddenly realise that the challenges and conflicts they have run into in teamwork are very normal, that there is a theoretical explanation of the social processes going on in the group and not least that there are ways of solving the conflicts and getting the best out of the collaboration in the team.

### **III.3 Acknowledging differences**

In the former I have explained how the Belbin theory brings the students new insights on group dynamics. Now we turn to the question of how they can use this new knowledge to develop better teamwork.

The students often assume that “other people see what I see”. An element in learning about the Belbin team roles is that people with different natural roles often have focus on different aspects of the project. So when a teammate is about to leave before the team has agreed on a working plan and timetable for the next week it is not necessarily because he does not care about the teamwork. Maybe he is a ‘specialist’ and cannot wait to get home to solve a certain problem on his computer. This might provoke the ‘implementer’ who is very focused on work plans and timetables. As soon as the team members realise that it is often a different focus and not necessarily neglect that motivates different actions many conflicts are avoided. It can seem very simple, but it is true that the mere fact that it is legal to be different from each other opens up to a new way of communicating in the team.

The strengths and allowable weaknesses of each team role is a pivotal element in the successful operationalisation of the Belbin theory. When teamwork is under pressure the members often have a tendency to focus on each other’s weaknesses and this can lead to critical remarks and conflicts. But when strengths are linked to ‘allowable weaknesses’ it creates a room for accepting that none of us are perfect. By recognising their own strengths and weaknesses and sharing these insights with each other, the students can turn the critique to a focus on how they can help each other improving aspect of their teamwork abilities. Therefore a team that establishes a team culture, where it is allowed to have individual strengths and weaknesses and where differences are seen as an asset instead of a threat has the potential to be more dynamic and successful.

## **IV            PROGRESS IN TEAMWORK COMPETENCES**

Teaching in social and personal competences on the first three semesters in Greenland of the Arctic Engineering education comprises:

| Semester | Teaching in social and personal competences   |
|----------|---|
| 1        | <ul style="list-style-type: none"> <li>• Awareness of personal strengths and weaknesses</li> <li>• Belbin (LEGO® exercise and introduction to team roles)</li> <li>• Group and class contracts</li> </ul> |

|   |  |
|---|--|
|   | <ul style="list-style-type: none"> <li>• Individual coaching with focus on ability spotting</li> </ul>                     |
| 2 | <ul style="list-style-type: none"> <li>• Working with group contracts in practice</li> </ul>                               |
| 3 | <ul style="list-style-type: none"> <li>• Belbin test</li> <li>• Advanced Belbin theory</li> <li>• Team coaching</li> </ul> |

It is important that there is progression in the curriculum. When these kinds of methods are applied at universities, there is a tendency to believe that they can just be introduced once and then the students will apply them by themselves. Our experience is that they have to be guided through the methods several times before they apply them voluntarily. The following assessment of the student's benefit of the programme builds on personal feedback from the students.

All students have been very positive about the LEGO® exercise when it is introduced on the first semester. But this is hard to distinguish from the fact that it is great fun to compete and build LEGO®. When subsequently introduced to the Belbin roles, the students are always very active in sharing their reflections and the response is that the theory is an eye-opener in connection to understanding group dynamics. Normally there are one or two students who are very critical towards the Belbin team roles. They oppose to the idea of 'being put into boxes'. In this case it is very important to emphasize that Belbin is not a way of labelling the students but an approach that can help them to focus on the roles they take and the way they act in teamwork.

On the third semester they take the formal Belbin test and the results are used to create optimal teams. Subsequently, they are introduced to more advanced aspects of Belbin theory i.e. how certain roles challenge each other and how different roles contribute in different phases of a project. Finally each team is coached on their specific challenges. In this teamcoaching it became clear that they had taken up the 'Belbin language' and were using it actively in the process of solving group conflicts. A student who had been very sceptical towards the Belbin approach from the beginning commented that he now could see its relevance and that the teamcoaching had solved collaboration problems that he had seen as irresolvable.

## V CONCLUSIONS

The coaching concept including the Belbin approach has now been applied at the education in Arctic Technology in Greenland since 2007. Our experience is that the students find these methods to improve teamwork meaningful and that they have positive effects in relation to enhancing self reflection and reducing conflicts in teamwork.

The strengths of the Belbin approach when applied to teams at an engineering education are: (1) It opens up to an appreciative approach to one self and each other, (2) It reduces expectations and hereby performance anxiety 'nobody is perfect - but



a team can be', (3) It provides a theoretical framework and a language for understanding group dynamics.

Students often express relief when they learn about the different team roles and realise and accept that they cannot be expected to be good at everything. By concentrating on the things that they are naturally good at they will normally contribute better and with less effort to the team. In this way Belbin can better the conditions for establishing effective teamwork, but the approach has its limitations.

The general message in the Belbin approach is that everybody has a contribution to the team, we just contribute differently. The fact that a minority of people in practice do not have any constructive contribution to teamwork is toned down and the problem of integrating these very weak students cannot be handled in the Belbin framework.

Another problem is that sometimes the different team members all have the same strengths and weaknesses and then the team in general will miss some core functions. E.g. in the Greenlandic context many student are strong Specialists and Teamworkers but very few are strong Implementers and Finishers. The team can respond to this by being aware of their common weaknesses and establishing procedures to deal with the challenges, but it will never work as easy and smooth as a team that is naturally born with members who have all the different functions as natural roles.

Finally it cannot be emphasized enough that there is a long way from presenting the Belbin approach to integrating it as an active element in the student's teamwork.

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