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# **INTRODUCTION WORKSHOP FOR NEW STUDENTS IN THE CDIO PROGRAM**

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## **ABSTRACT**

The engineering education has traditionally focused on the technical skills rather than on personal development. However, the personal competence is becoming more and more important, including the communications skills. One of the challenges in modern engineering education is the ability to focus on both the technical and personal development in order to educate an engineer who can solve both technical and humanistic problems; thus creating good results from an all round prospect. This workshop is an introduction to communication and will demand an active involvement for the participants at the CDIO conference. The purpose is to give the CDIO staff a personal idea of a different approach to communication between new students and how they can get to know each other faster in a better way. Education of students today will typically involve both national and international students. However, the integration of the international students is important. Elements from this workshop could be used for integrating, to perform as an ice breaker and integrate the foreign students into groups along with the local students. The workshop will consist of various small exercises, where the participants will develop their awareness, and at the same time it will be an eye-opener of how it is possible to create a new form of introduction courses for new students – giving them a chance to get to know people they would otherwise never get to talk to. Since this workshop is limited to 90 minutes, it will only be possible to introduce and inspire the participants how to use the knowledge in their own courses.

## **KEYWORDS**

Communication, get to know each other, ice breaker, integration of international students, personal exercises, student involvement

## **INTRODUCTION**

The intention of this paper is to set focus on the fact that it is not all about technical skills but that the students need to be able to communicate on several levels. When the day comes that the students have fulfilled their education, they will spend a lot of time communicating (about 60% of working time for an ordinary engineer and on top level it is about 80-90%) [1]. As a part of the education, it is important that the students feel confident in meeting new people since this item will be of importance in their job. Some people are extrovert – they like to meet new people, carry on a conversation or small talk with people they do not know. A stranger is someone you just have not talked to. Other people are introvert – they are not able to start talking to other persons just like that. It will take some personal development for

these people to feel safe talking to a stranger. Education of students today will typically involve both national and international students, and one should bear in mind that it is exiting, however also demanding, to go to another country to study. It is important to make a good mixture of the students, but usually they get to make their groups themselves, and this sometimes ends up in groups of no mixture. However, the integration of the international students with the nationals can be an important feature and elements from this workshop can be used for this integration.

## **WORKSHOP INTRODUCTION**

It has been decided at Technical University of Denmark to implement CDIO at DTU Byg. One way of doing so is by making projects which means working together in groups. It is important to make a good mixture of the students but still maintain that they make their groups themselves. Once starting the groups, it is important to create confidence between the students - it helps them to share with each other. In order to obtain this, it is good for them to have some knowledge of each other. When a person shares his/her thoughts/expectations with someone else and vice versa, at least these two people know each other.

### ***How to build up the first introduction day***

The first introduction day can be designed in many different ways. In the following is being suggested a proposal for inspiration based on an introduction workshop at Narvik University College, for which the author was responsible. The introduction workshop accommodated a group of approximately 100 students and was a part of a starting up process for bachelor engineer students in an environment course for all four different classes/directions at the college. It was the first semester of the course and one of the first study experiences the students met at the university. From former experience it has been known that the students will get to know each other in the classes quite well during the study sequence. However, the knowledge of the students in other classes will be limited. In order to speed up processes of getting to know each other within the four classes, the introduction workshop was proposed by the author.

The proposal in the following has to be adapted to local conditions. The proposal divides the first day into three parts:

#### ***1. Part – Introduction in an Auditorium***

Before the start of the workshop, it will be a good idea to get all students together in an auditorium, where they can get general information of how the contents of the day will be.

#### ***2. Part – Exercises in a big open space – all students***

In this part, all the students from the four classes will participate in order to get to know each other between the classes.

#### ***3. Part – Exercises in a class room – students in the class they belong***

The students will now be in their classrooms respectively. These exercises are about getting to know their new class mates and preparing for making groups for working with projects as part of the environment/CDIO course.

## *Practical matters*

In connection with organizing a workshop, there will be a lot of practical matters which have to be dealt with beforehand.

- Depending on how many students will be present, it may be necessary to have a microphone in order to make sure everybody can hear the workshop leader.
- Since the first exercise “*Get to know each other – Map on the floor– ...*” is using a map, it is necessary to make signs with the names of the most important cities/countries/continents or whatever relevant for this particular workshop. Also make sure that these signs are placed on the floor in the right position geographically (if possible).
- Signs with the names of the classes or smaller groups are put up on the doors of current interest.
- Make sure that everybody at the workshop is wearing a name badge.
- 2. part of the workshop: All chairs and tables should be removed from the big room in order to create the necessary space for the exercises.
- 3. part of the workshop: Chairs are placed in a circle in the middle of the room.

## **1. PART – INTRODUCTION IN AN AUDITORIUM**

In this part, there is a general welcome to all the students and information about the University, the course, etc. This part has to be adapted to the actual University. The contents could for example be:

- General introduction to the course
- Information about the project
- Information about how to create groups
- The contents of the workshop and how it is organized

## **2. PART – EXERCISES IN A BIG OPEN SPACE – ALL STUDENTS**

During this part, all the students will participate in a big open space, for example a conference room, without chairs in which the different exercises will be made. The purpose is to make the students get to know each other between different classes. In this way they will make connections to people that they might otherwise never have a chance to get to know.

***Exercise: Get to know each other – Map on the floor– Where were you born/ where did you live just before you moved to this city***

Since this introduction workshop took place at Narvik University College in Norway, the descriptions of the actual performance of exercises is designed to fit this country. This means that the room needed for these first exercises in this case had to be very long. In order to fulfil this, the atrium at the university was chosen, see figure 1. The atrium fits a map of Norway; North Norway was in one end of the atrium and South Norway in the other. This was done by pasting signs on the floor with names of the major cities of the kingdom (geographically located all over the country). In addition to the Norwegians, there were mainly foreign students from China and Russia. These other countries were also placed in specific areas in the atrium.

The exercise was divided in two parts.

- Place yourself where you were born.
- Place yourself where you were living just before you moved to Narvik

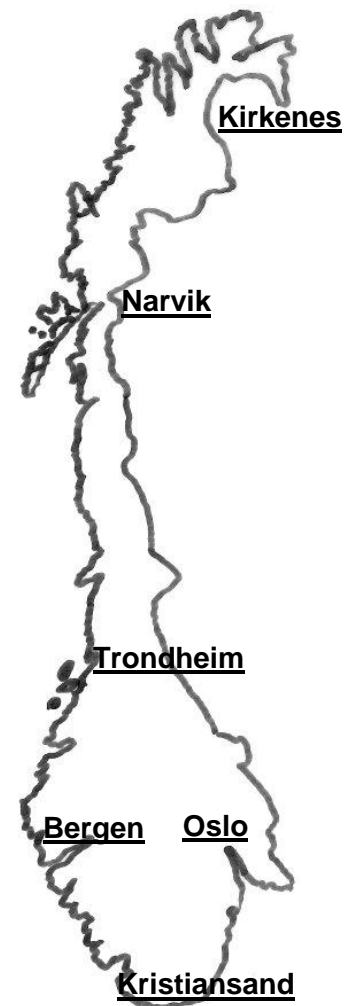


Figure 1. To the left – the 2. part of the workshop was held in the atrium at Narvik University College. To the right – a map of Norway.

One of the outcomes from this exercise was that students from different areas in Norway or other countries had the possibility to get to know each other by discovering that they came from the same area of the nation. Since Norway is such a long country (approximately 2000 km) and mainly consists of mountains and valleys that are somewhat segregated, in many cases the Norwegians generate a very personal connection to the place they were born/spent their childhood. The result was that students that from a starting point were strangers would evolve a good connection based on shared childhood experiences. The Chinese, Russian and other foreigners also got the chance to get to know each other – however, they would in most cases get to know each other anyway. Since the purpose of these exercises is to make the students get to know each other between different natural groups/classes and most significantly get to talk to each other, it is very important that a sufficient amount of time is given.

The exercise has to be adapted to the actual university and the students' composition from different countries/parts of a country in order to give the best results. Other suggestions for additional exercises could for example be if the students are from a lot of countries:

- *What country would you like to go to for a one month holiday?*  
(Not your own country, do not think of practical/financial situation)
- *What country would you like to go to for three months for working/studying?*  
(Not your own country, do not think of practical/financial situation)
- *In which country did you spend your last holiday?*  
(Not your own country)

### ***Exercise: Get to know each other – Stand on a line – Your expectation***

All the students are placed on the floor. A line is shown from one point of the room to another. The students must now place themselves on that line according to the description of themselves. This exercise consists of two parts:

1. on line:
  - one end – looking forward to the education
  - the other end – dread/nervous about what is going to happen
2. on line:
  - one end – great expectations
  - the other end – no expectations

Since the purpose of this exercise is to make the students get to know each other between different classes/groups and most significantly get to talk to each other, it is most important that a sufficient amount of time is given. Also this will tell the student that he/she is not alone with feelings regarding what is going to happen. Again, this introduction day was designed for this university – young people from all over the country leaving their parents' house and starting a new life as a student.

### ***Exercise: Get to know each other – Reception***

The students are divided into a suitable number of groups for the day/the university. In Narvik it was 4 groups according to classes.

The exercise is carried out like a “real” reception with coffee/tea, perhaps pastry. Each group is placed in different locations of the big open space. Everybody is moving around in their own group. They meet two and two, (perhaps they shake hands), say hello, look each other in the eyes and introduce themselves like they were attending a reception. They tell a little bit about themselves and ask questions to the other. When the exercise leader claps his/her hands (rings a bell, whistles) the students go on to talk to the next person.

After some amount of time, the students are told to take a break and they can do whatever they want to do. Stay at the reception or leave the area. However, they have to meet in their own classroom at a given time.

## **PART 3 – EXERCISES IN A CLASS ROOM – STUDENTS IN THE CLASS WHERE THEY BELONG**

The students get together in their own class. Tables are placed along the walls and the chairs are placed at random.

### ***Exercise: Get to know each other – Two and two***

In this exercise the purpose is that a smaller group of students get to know each other. It is important to point out that the students have to speak using the “I” form, emphasizing that they talk about themselves. The students form groups of two with someone they do not know.

Sit opposite each other and decide who is student A and who is student B. Student A tells about him/herself for two minutes, and student B listens and asks questions. Subsequently the roles change.

During the following step, two groups go together making four in a group:

- Group 1            Student A1 and B1
- Group 2            Student A2 and B2

At first group 1 introduces themselves to group 2 by letting the other make the introduction.

- Student A1 introduces student B1.
- Student B1 introduces student A1.

Now group 2 introduces themselves to group 1 by letting the other make the introduction.

- Student A2 introduces student B2.
- Student B2 introduces student A2.

Workshop leader:

- *How does it feel for you to listen to what is said about yourself? Do you agree?*
- *How does it feel to talk about the other student?*

Do not force anybody to say something, but this is a possibility for the students to express feelings (again it may depend on the university and the age of students whether it is good to do ask these last questions).

### ***Exercise: Get to know each other – What is the goal of your education***

The purpose of this exercise is for the student to reflect on what he/she actually wants from this education and to find out whether other students have the same aspirations. The students will have to put words on what they want to do with the education, which values they find in being an engineer. Different examples could be:

- *I want to be someone who earns a lot of money.*
- *I want to be in a position where I can be a leader.*
- *I want to be someone who helps to get a better environment.*
- *I want to be someone who works for a better and positive world.*
- *I get a lot of knowledge and I would like to share this with other people.*

The exercise is performed by making a fictitious line in the room from point 1 – (earn a lot of money, materialism) to point 2 – (work for a better and more positive world). All the students are told to stand on the line according to their point of view:

- Point 1 – earn a lot of money, materialism
- Point 2 – work for a better and more positive world

One of the purposes is that the students can share views with students of the same ideas – it is most important that they have sufficient time to talk together.

### ***Exercise: Get to know each other – Talk together 2 + 2, 4 + 4***

In case the number of students is uneven, it will be necessary to make a three person group.

When the exercise starts, the students walk around between each other at random for a short period. They are told to stop, close their eyes and think of all the people they have met and talked to during the day. They are to think about whether they would like to get to know better someone they have met. Then they are to open their eyes. Walk around between each other, at random again, and notice with whom they feel connected.

Workshop leader says:

- *Get together with someone you would like to get to know better. Agree on a subject to discuss referring to the theme from the previous exercise materialism/idealism. Talk about this common subject for three minutes.*
- *Walk about as couples and notice if you would like to get to know another couple. Get together with another couple so you are now four in a group. Agree on a subject to discuss referring to the theme from the previous exercise materialism/idealism. Talk about this common subject for five minutes.*

Walk around between each other at random, look at each other – get eye contact and smile.

### **Exercise: Establishing of groups**

The workshop leader tells the students:

- *Now you are about to form groups for the project. Close your eyes and think about with whom you would like to make a group and spend many hours these next months when working on this project.*
- *Look inward and sense with whom you will feel well.*
- *Open your eyes and get together two by two with a person with whom you would like to work.*

If the total number of students is uneven one group will have to consist of three persons. The students get five to ten minutes to talk about their ideas for a project and to talk about what other two persons they would like to work with.

The couples now get together four and four with the intention of forming groups for the project. The students get five (or more, depending on the project and class) minutes to discuss ideas for a project.

In reality it will be necessary to adjust the time limit and the number of members in groups to the actual situation at the university.

### **Exercise: Concluding discussion in the group**

It is important that the workshop leader makes a concluding discussion in order to let the students have the possibility to express their opinions. It could for example be like this:

- *How do you feel about this day?*
- *Would any one like to say a word or a sentence that would describe this day?*

The workshop leader could finish the day by saying:

- *I will urge you to say hello and smile when meeting some people that you have seen during this day even though you do not know or remember the name of that person.*

This will help creating a sense of community, and it will certainly help the students not to feel lonely.

## **WORKSHOP – SUPPLEMENTARY EXERCISES**

The workshop can consist of many different exercises, which have to be selected with care in order to get the right results. Different supplementary exercises have been listed in the following.

### **Exercise: Questions to the group in the beginning**

Place the chairs in a circle. In this way the student can have eye contact to everybody.

The workshop leader could ask:

- *What is it like to sit like this?*
- *What is the atmosphere like?*
- *What do you expect from your education?*  
(The students could discuss this in plenum, small groups or in twos).
- *What are your expectations of this project?*  
(The students should reflect on what they really want from this project)
- *What are you prepared to do in order to fulfil your expectations?*  
(The students should reflect on the knowledge they already have and the needs they have in order to proceed)



- *We are here to get to know each other. Do you have any suggestions to how this can happen?*  
(The students will expect the workshop leader to take initiative, but it is a good idea to let them take responsibility for this activity. At some point, somebody will want to introduce him/herself)

***Exercise: Get to know each other – Play with the names – Round using a pillow***

Another way of getting to know each other can be by making games to learn each others names and backgrounds.

All students are placed in a circle. One after another the students have a pillow (or something else; it is just to show everybody who is allowed to talk right now). The one with the pillow will tell his/her name. First round is with the clock, second round is against the clock – five rounds in all.

1. Round – Name – Tell about your name. (Is it an old family name, are you named after your grandfather/mother, does your name mean anything specific)
2. Round – Age – (In some cultures some people (women) do not want to talk about their age – respect that)
3. Round – Tell a little bit about where you live/come from
4. Round – Current job or job experience (even though the students are probably rather young they all have some skills – it may be interesting for the students to find they share experiences). In case a student has never had a job he/she could tell about a hobby

***Exercise: Get to know each other – Play with names – Round remembering the names***

The students sit in a circle. One student tells his/her name. The next student clockwise repeats first student's name and then tell his/her own name. The third student repeats the names of the first two and then tells his/her own name. It continues this way all around the circle.

## **CONCLUSION**

Our education for engineers usually focuses on technical skills rather than on personal development. On the other hand, personal competences are very important for the modern engineer, and it is very significant to concentrate more on these skills. The focus on this workshop is on new students and how they can be involved in the process of getting to know each other in an inspiring and personal way. Universities today have many international students, and integration with national students is important in order to improve the benefits of the multicultural influence and to learn from each other's different cultures. This workshop can assist this integration and perform as an ice breaker for building up new relations between students. Since the workshop consists of various small exercises, the students can develop their awareness in the contact process in the interrelation between the students.

The author hopes that this workshop will give inspiration for CDIO staff for a new approach for starting up the first CDIO course in the first semester at the university. This paper has been written as an inspiration for further development. Readers are welcome to contact the author for further inspiration and advice as to how to start a workshop.

## REFERENCES

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### ***Biographical Information***

Jørgen Erik Christensen received his M.Sc. and Ph.D. degrees from the Technical University of Denmark in Copenhagen in 1981 and 1987, respectively. From 1988 to 1991, he worked at the Danish Building Research Institute, Denmark, and was in 1990 appointed to senior researcher. From 1992, he worked as Professor of Integrated Building Technology at Narvik University College, Norway. From 2003 to 2007 he was an Associate Professor at Faculty of Engineering, Oslo University College, and since 2007 until present he has worked as an Associate Professor with the Department of Civil Engineering, Technical University of Denmark. He has been involved in national and international research in the field of energy and environment and is a co-developer of an internationally used thermal analysis program – tsbi3.

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