ORIENTATION PROGRAMS IN HIGHER EDUCATION: CIVIL DUTY AND A WAY TO IMPROVE EMPLOYABILITY?

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Abstract: *The purpose of this study is to investigate the influence of orientation programs on student soft skills at Engineering Faculty of Sibiu during a period of 8 years. A number of theoretical and conceptual framework are used in our study, as well as a mixed method research (quantitative and qualitative). Specifically, we sought to answer: What soft skills are most important for scientists and recruiters? Are those soft skills learnable? Will a special developed Orientation Program increase students' chances to score higher in employability rankings? The most important findings from the qualitative investigation relate to 3 hypotheses. The survey covers 3 topics: involvement in student unions as a result of a special designed Orientation Program, the number of team building activities students take part in and awareness of their rights. These 3 topics are seen as an indicator of key skill sets employers will look for by 2020.*

Keywords: *Orientation Programs; Soft Skills; Higher Education; Employability;*

1. Introduction

What soft skills are most important for scientists and recruiters? Are some soft skills more important than others on an ongoing company project? Are those soft skills learnable? What method and tools can be used to develop those skills? Are they suitable for any bachelor programs? Most employers are looking for employees who are strong in both technical skills and soft skills to increase productivity and competitiveness (Gibert et al., 2019). One of the most important elements in meeting the needs of industry is developing the soft skills for engineering students (Székely, 2018; Ahmad, 2014; Aimao, 2012). It can be argued that soft skills are vital in every workplace and many researchers (Gura, 2012; Hungwei et al., 2019; Ho et al., 2016) are showing the increase request for implementing soft skills for their undergraduate and graduate student programs. Due to the rapid development of digitalisation in new technologies, innovation and globalisation in the past decade the necessity to face competition on all over the world created a major change on the necessity of developing new set of skills. Soft skills are one of the critical elements in the global working environment and should be possessed by the graduates of the Higher Education Institute (HEIs) (McQuick & Lindsay, 2005; Curtis, 2004).

Analytical and technical skills need to be balanced with soft skills competences developed in different activities like mandatory school projects, implementation of orientation programs, volunteering activities in student unions or different associations.

The main ten categories of soft skills that we need to focus on are (1) communication skills, (2) ability to work in teams, (3) leadership/ entrepreneurship skills, (4) Interpersonal skills, (5) decision making/problem solving skills, (6) flexibility/ adaptability skills, confidence level and also ability to adapt in the workplace (7) moral and professional ethics, (8) organisational skills, (9) project management skills, (10) analysis/creativity skills. What makes the difference on employability success rate for engineering students, nowadays, are

not only the good academic results but also to have additional skills such as soft skills to enhance professionalism.

When talking about problems and solutions in higher education, reports often look at grades, rate of graduation or number of employed graduates. Considering that grades are not always the best indicator for the knowledge a student has on a certain topic, and that most companies are looking for a lot more than just reading machines and diplomas, solutions to teach student soft skills like working in a team, communication and assertiveness are starting to be an important goal for universities nowadays (Cranmer 2006; Jones, Torezani and Luca 2012).

1.1. Theoretical framework and research hypotheses

Student success and retention has been consistently linked to a successful transition to college. The main mission of orientation programs is to aid in the successful transition of new students to college. The lack of evidence related to the efficacy of these programs leaves orientation programs open to criticism from the various stakeholders who may have a limited understanding of the critical role that orientation programs can play in the early college experience of students and at development of soft skills competences.

This study provides insight into these areas, while also highlighting several areas for further investigation. We anticipate that the use of these approaches would strengthen this study by expanding its reach and subsequent utility to many stakeholders within the field of higher education.

We could not find in any university from Romania an orientation programs made by the last year students and offered for freshmen students but only some dry presentations like administration information sheets for students. The interpersonal skills can be developed not only in year project or during the internship programs offered by the school but also in activities that could create liaisons between the students of the same specialisation. As well as being a good engineer, future employees need to be able to work with others towards common goals, such as project objectives or company strategic or operational objectives implementations.

Building external working relationships, networking, creating connections between students from different years can be done even through programs that are made by the students for the students. If we want to develop competences in which students can understand what it means team diversity (culture, language, traditions, regional diversity, gender), developing communication skills in communicating with diverse people, and identified issues from the perspective of others, or show respect for values of others' we need to get them involved in projects that creates these sceneries. Moreover, those students that are participating in implementation of orientations programs or other projects, volunteering activities in student unions or different associations can create a pleasant human working environment where they can show empathy, friendliness, unselfishness and accountability (Marques, 2013; Komarraju & Nadler, 2013).

Social skills are essential in any harmonious human relationship. Social skills, at workplace, are closing the gaps between people with different personality traits and create the environment for colleagues to specialize and increase efficiency (Deming, 2017). In contrast, poor social skills have been found to have negative impact in not only academic achievement but also success in employment and long-term career, personal relationships, and mental health (Gresham, Van, & Cook, 2006).

We are proposing the following research hypotheses after reviewing the scientific literature in this field:

H1. Fourth-year students can develop more soft skills after implementing the project of orientation program and they are more likely to succeed in applying and implementing different projects at their work place / organisation.

H2. The driving force of passion of the volunteering projects can be transmited to first year students by their example and the foundations set by this practice in creating the necessary skills for team leaders in organisations projects.

H3. Social skills would have positive effect on learning outcomes among freshmen students and the rate of drop out will decrease by networking skills that were created and support groups developed during the two-week program activities.

The advantages of the orientation program are presented in table 1.

Table 1: List of Soft Skills Developed in the Freshman Orientation Project

Soft skill	Description
Communication skills	Building external working relationships, networking Communicating with diverse people Identified issues from the perspective of others, or show respect for values of others' they need to get them involved in project
Ability to work in teams	Team diversity (culture awareness, language, traditions, regional diversity, gender)
Leadership/ Entrepreneurship skills	Value trust and accountability within the team, share information, treat all participants and team members respect, act with integrity, keep your word, respect the program and fulfil expectations
Interpersonal skills	Proactive and self-starting initiative; seize opportunities and act upon them; originate action and actively influence events Empower talents of others Persuasion Negotiate skilfully
Decision making/Problem-solving skills	Inspire a strong desire to succeed among team members; steer others towards successful goal and task accomplishment' Make quick decisions when required; commit to definite courses of action; Make rational and sound decisions based on a consideration of the facts and alternatives available
Flexibility/ Adaptability skills, confidence level and also ability to adapt in the workplace	Conflict resolutions Make quick changes in the program when required (weather forecast, schedule changes, no proposal of the freshmen) Respond effectively to disappointments and setbacks; remain calm and in control even under pressure; receive criticism in a constructive manner rather than becoming defensive
Moral and professional ethics	Ethical and moral attitude Inspire confidence in your capacities and skills, be able to explain and underline your competences and their value to others
Organisational skills	Strategic thinking Gain agreement to proposals and ideas; stand ground in the face of opposition
Analysis/Creativity skills	New ideas, not bound to old ideas Handling disagreements Entertaining a wide range of possibilities

2. Case Study: Students from Economical-Engineering Field of Study

In 2010 a group of teachers and fourth-year students from the Economical-Engineering field of studies from the Engineering Faculty in Sibiu started an Orientation Program for first year students from the same field of study. The goal of the program was to ease the integration of first year students and to close the gap between upper secondary school-life and student-life, to create a community and organisational culture & liaisons between the students of the same specialisation inside the Economical Engineering in Mechanical Field Specialization (IEDM) and also to present students with their future opportunities in terms of volunteering, student organizations and their rights.

The team started working on the project from mid-September and created a two-week program with activities. The first pilot project was implemented from the 4th to the 17th of October 2010.

After the first day introductions and exchange of contact details, first year students were presented with the program schedule. The first activities organised were a series of "icebreakers" and team building-type games. This immediately helped first year students to get to know each other better and learn how to interact and work together. Team work was often fostered during the other activities as well, as students had to go on a treasure hunt were, they were split into two teams, or use their creativity to win the contest at the end of the funny city photo tour. The treasure hunt's goal was to help students find all the main Faculty or even University facilities and main offices. Game nights and movie nights were also included in the program, so not all activities had a training side to it. A very important activity from the second week was the student union's presentations. We invited the three most active student unions in their field of studies at that time: AEGEE Sibiu, SOLIDUS (Sibiu Engineering Students Association) and AIESEC Sibiu. First year students discussed with the student union members about their projects and the benefits of volunteering.

2.1. Methods Used & Participants

This study uses quantitative (survey questionnaire) and qualitative approaches (3 focus groups).

After the implementation of the pilot in 2010, a survey was carried out by the authors at the end of the academic year 2010/2011 in order to determine the effects of the Orientation Program and to test some theories regarding awareness of student's rights for the program participants compared to the other students from the same field of study.

In order to obtain relevant results and statistically representative data, the University UMS database was chosen as the frame for collecting population data. The survey population was represented by the full-time students from the Economical-Engineering field of study from the Faculty of Engineering in Sibiu (first, second, third and fourth year). We used the following method to determine the number of the sample:

$$n_c = \frac{p*q}{\frac{e^2}{t^2} + \frac{p*q}{N}}$$

[1]

where: n_c – sample size corrected

N – the size of the investigated community

t – trust level coefficient

p - the non-percentage weight of the sample components that are characterized by a particular attribute

q - the non-percentage weight of the sample components that are not characterized by a particular attribute; is determined with the relation "1-p"

e - margin of error

Out of the total of 70 first-year students, 46 second-year students, 59 third-year students and 49 fourth-year students, it was determined that 160 students were needed for the survey results to be relevant. The structure of the sample was set by dividing the sample into two groups: one group was formed by the first-year students and the second group was formed by the students that did not benefit from an Orientation Program (the ones from the second, third and fourth year). In order to determine the sample size for each group, we have calculated the percentage of each group out of the total population. The first group represented 31,25% and the second group (second, third and fourth-year students) represented 68,75%. Therefore, we considered that 50 responses from the first group and 110 responses from the second group would provide representative data for our survey.

Table 2: Subsamples Demographics

Information	Subsample 1 (first year students)	Subsample 2 (2^{nd}, 3^{rd}& 4^{th}-year students)
Male	44 %	42,73 %
Female	56 %	57,27 %
From Sibiu	56 %	49 %
Outside of Sibiu	44%	51 %

2.2. Survey Results

Most important findings of the survey cover 3 topics: involvement in student unions as a result of the Orientation Program, the number of team building activities students take part in and awareness of their rights.

In the context of this paper, these 3 topics are seen as an indicator of the student's initiative and problem-solving skills, ability to work in teams and coordinate with others, and the degree in which the university has fulfilled its civil duty in informing students about their rights.

With regards to its civil duty, implementing this Orientation Program has for sure brought a plus to the University. It was surprising to see that most of the respondents that did not benefit from the Orientation Program found out about the train discounts, or the right to representation in the Senate and Senate's role, only after the first year of studies. 24% of the students only found out about these aspects in the third-year and 4 students, only during their fourth-year of studies (as shown in Figure 1 below).

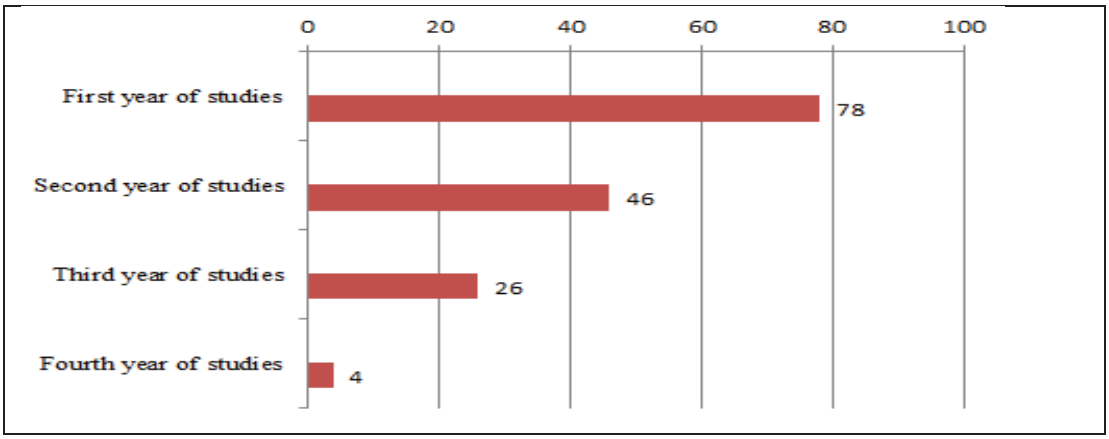

Figure 1: Student's awareness of their rights

Considering the studies about student's difficulties to identify and articulate their values due to a lack of critical thinking skills (Claudia Crişan et al., 2015) the authors consider it is the University's civil duty to implement projects to improve the quality of the learners. Unless students understand the importance of staying informed, of choosing their representatives when it comes to University meetings (like the University Senat) and understanding their rights and opportunities, the chances of developing these learner's critical thinking, ethics and decision-making skills remain slim.

For the involvement in student unions 3 main NGOs were named in the survey: SOLIDUS NGO as this is the Engineering Faculty's NGO, AEGEE Sibiu and AIESEC as they are not subject or faculty related and students from all universities / faculties can join.

As seen in the below table, the involvement of students from sub-sample 2 is much smaller than the one of the students from sub-sample 1, which were involved in the Orientation Program. The difference between the responses is significant according to the chi square test: 40% of the students involved in the Orientation Program are part of a student union, while only 17,27% of the students that did not benefit from such a program are part of student unions.

Table 3: Students Part of Student Unions

Members in student unions	YES	NO
Subsample 1 (first year students)	40%	60%
Subsample 2	17,27%	82,73%

There was no correlation found between student's grades and their involvement in extracurricular activities or NGOs. Most of the students that are part of student unions and that are more aware of their rights tend to have medium to very good grades, but the aspects are not necessarily connected.

2.3. 2018 Results and Focus Groups

The central features of focus group research is to provide access to participants' own language, concerns and concepts used and to have the opportunity to observe the process of collective participation to the project.

Given the results of the 2011 survey the Program has been implemented every year for the last eight years. We were however interested to see if the three topics covered by the 2011 survey were still representative for the next generations. Based on the reports written by each generation that organised the Orientation Program we discovered that some activities were taken out of the Program. After a focus group with 6 of the 2018 organisers we discovered that some of the activities in the original Program were forgotten. For example, the first team building-like activities and "icebreakers" were no longer officially included, but part of the reason was the lack of training and skill in this area of the organizers. After further investigation one of the root causes for this was the fact that they received their Orientation from the generation that graduated in 2016, which also received their Orientation from the 2013 graduates, which had no Orientation Program in their first year of studies and a low rate of involvement in student unions (the most common place to learn these "icebreakers").

The second activity to be excluded was the treasure hunt for discovering the University offices, but due to the big number of students to join the Faculty Student Union in 2010 and 2011, they tried to implement this activity for all first-year students, at Faculty level. The disadvantage was that some of the first-year students would choose not to participate in this activity as it was only a one-time activity with a group of new people and not all freshmen were open to this challenge. The activity could also not be part of the Orientation Program as organizers thought it might clash with the one organised by Solidus or be considered as lack of originality.

Based on this information we chose to organise 2 more focus groups. One focus group was organised with the 2017 graduates which were the first first-year students to take part in the Orientation Program, the second focus group was with the freshmen this generation trained (so the ones that will graduate in 2020).

A common idea from all three focus groups was the fact that organizing and implementing this project made fourth-year students develop competences in all ten soft skills categories.

H1. Fourth-year students can develop more soft skills after implementing the project of orientation program and they are more likely to succeed applying and implementing different projects at their work place / organisation. There is a positive correlation on implemented projects with problem-solving and critical thinking skills developed during different stages of unplanned decisions. Such decisions required to inspire their colleagues and participants a strong desire to succeed towards different goals and tasks that needed to be accomplished. This needed to define a course of action and to make quick decisions sometimes, without previous experience or any structured steps given to them by a professor or any external support team. This made them rely on their gut and be proactive and assume the risk of failing. Quick changes in the program were sometimes required because of some unpredictive events like the weather forecast or schedule changes or sometimes because of lack of creativity or proposals from the freshmen. This led to develop skills necessary when disappointments and set-backs appeared during the progress of the project. They learned how to remain calm and in control, even under the pressure of the events. Strategic thinking is an ability that top-level management needs in order to create sustainable strategic plans, more than low-level management, that require broader interpersonal and technical abilities.

Communication is another important soft skill required at the work place. Communication skills are developed in two directions. First direction is communicating with their own team with diverse personalities and they needed to build working relationships with their colleagues and with some external sponsors. Second direction is communicating their ideas with all the participants in the project. They needed to have a proactive and self-starting initiative, originate action and actively influence events, seizing opportunities and act upon them. One of the fourth-year students mentioned: "I learned a lot about communication and working with different people with different levels of motivation. I think project work is definitely something for me in the future".

H2. The driving force of passion of the volunteering projects can be transmitted to first year students by their example and the foundations set by this practice in creating the necessary skills for team leaders in organisations projects. The main acquisition during the implementation of the project is creating a trust between all participants and knowing all the issues from the perspectives of others and learning to respect the values of others when they get involved in project. For the freshmen one of the most important abilities learned during these two weeks activities regarded keeping their word, respecting the program and acting with integrity while fulfilling expectations of their colleagues. One student stated that: "It was nice to see so much involvement from the faculty and fourth year students. There was no way

you could not keep your word and participate in the activities after seeing the effort they put into organizing everything".

The creativity skills are fostered by the nature of the activities. Freshmen need to solve different tasks like creative photo-shootings, treasure hunt activities, game nights and surprize fourth-year students during the “icebreaker” activities.

H3. Social skills would have positive effect on learning outcomes among freshmen students and the rate of drop out will decrease by networking skills that were created and support groups developed during the two-week program activities. During the follow-up informal meetings, first year students learned to receive criticism in a constructive manner, without becoming defensive and they became more action oriented and more confident in their abilities to handle a failed exam or difficult school situations. "This program created a community for IEDM first year students and it is nice to see you are not alone coming to school and going back home without any other purpose".

Fourth-year students inspired confidence and they were able to underline and put to use freshmen unknown competences and give them advice and good practice in communication and attitudes towards academic staff.

At the end, they succeeded to empower talent of first-year students and maintained the Facebook groups and communication on social media. They created a nest for exchanging information, books and sharing new tools required in different school projects.

3. Conclusions and Future Recommendations

The results of this study illustrated that soft skills acquired during the implementation of the Orientation Program Project are essential for better employability of the final-year students and higher retention rate of the freshmen students.

In order to determine if soft skills could be taught or developed outside the curriculum, through volunteering and other activities, we chose to analyse the case of the orientation program implemented for first year IEDM students. This study determined that the activities organised in this orientation program are relevant for analysing the hypotheses proposed by the authors. The unit of analysis in this case was the group of first and fourth-year students, involved in the program.

The opportunity of developing soft skills through project tasks by setting game-based activities in the Orientation Program, or different group projects are a necessary informal learning environment in digital era and information technology and communication.

Learning skills are developed in informal activities when students challenge and support each other in various aspects of the project.

Soft skills can be strengthened by implementing different volunteering activities from students for students, where they can learn real world situations by solving authentic problems.

Some recommendations for other Universities are presented next. Universities/Faculties should divert more attention and effort towards students to help them grow not only by offering knowledgeable teachers, but also by involving them in research projects, community volunteering actions and helping them develop their soft skills, for a better chance to get a good job.

We consider this Orientation Program a best practice for Universities in Romania, as we could not find any public information regarding the implementation of similar programs in other Universities in Romania. Career and Orientation Offices exist in many Universities, including the one in Sibiu, but their role, although of great value, is complementary and focuses on other aspects of student development.

Considering that a one-way relationship is never fruitful, if the resources and support come from the institutions' leaders and if the students pitch in with effort, drive, passion and commitment, then with this join-effort, the overall outcome for student grades, rate of graduation, rate of good employment out of colleague will also grow.

4. Limitations and Future Research Directions

The study was conducted only for IEDM specialisation in the Engineering Faculty, during eight years, but we think this methodology can be applied to all specialisations regardless of the professional competences acquired in that field of study. Therefore, it would be an interesting knowledge addition to our research if future studies could validate the results and findings from our methodology in other fields of study.

A yearly quantitative study of the results of the program are too time consuming, but a mixed method is recommended as face-face interviews that can provide a more in depth understanding on beneficial features developed.

Future research could approach a multi-level model with a more complex questionnaire that can identify different factors and their strengths in acquiring soft skills for students.

Further creative activities can be integrated in the program, like displays of creative designs using different mechanisms which are easy to reach and learning about new design of innovative and original products (for example Steampunk or Diesel punk products).

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