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Developing a Learning Module to Enhance Motivation and Self-Efficacy of Students Participating in Multinational Design Projects

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The rapid developments in communications along with the global integration of resources around the world are making the creation of global collaborative networks a common practice for global competiveness. Many engineering projects are the result of efforts of culturally diverse teams working collaboratively. The collaboration could be in person where teams are located in the same site but formed by culturally diverse members or the collaboration can take place remotely where teams are geographically dispersed and use technology for communication and interaction. In both scenarios, members of the team must be prepared to work with culturally different peers; however, geographically dispersed teams have additional challenges to function effectively. As a result, many American institutions are adopting learning approaches to educate engineers with global competencies so they can work effectively in multinational projects. Different initiatives, including study abroad experiences and international collaborative projects, have been incorporated with the aim of facilitating the development of global competencies. However, the lack of motivation and self-efficacy of traditional U.S. students to participate in those international experiences diminishes the learning outcomes of these educational efforts. It is documented in the literature that motivation and interest are important factors contributing to learning and are also factors influencing students' confidence in succeeding in a course or and specific task. Therefore, the aim of this work is to develop a learning module that increases motivation and self-efficacy of students participating in multinational projects in an introductory engineering design course. This paper reports the preliminary findings from a survey based on the Intrinsic Motivation Inventory (IMI) given to students before starting their participation in the multinational projects. The data collected provides information in five constructs which are: interest/enjoyment, perceived competence, pressure/tension, perceived choice, and value/usefulness. These constructs provide a perception about students' interests, belief, and feelings about the international project that reflect their level of motivation and confidence to carry on the tasks. The data is evaluated and considered in the development of the learning module to be incorporated before the project in the same course in the future. The intervention will then be assessed again and the results and further actions will be reported in a future paper.

Introduction

The engineering profession has become globalized in the sense that more often engineering societies/organizations look for mutual recognition of local engineering degrees. No surprise that universities and colleges are thriving to develop programs for engineers, which incorporates the "international" aspect to engineering. In order to become a successful engineer, students should embrace the challenge of potentially working for multinational company, which requires them to respect, understand and work fluently with international co-workers to complete mutual projects. Furthermore, recent studies show that "engineering students who have international study experience are more likely to be hired and prepared for the global market place"[1]. Although students may realize that international relations within their respective field is beneficial, a more explicit list of highly desirable traits can be summed up such that the "engineer must understand and accept diversity; be creative in the solution of problems impacting a wider and more diverse population; be able to communicate and socialize with people from different cultures; be knowledgeable of other languages; be able to use the technology to exchange ideas, solve problems and present solutions; be a leader; a team member and an ambassador"[1].

It is evident that engineering students must "globalize" their educational experience in order to become successful. A vast majority of engineering companies, which have been started as local, nowadays are extremely diverse and internationally based. Boeing (a defense contractor and aerospace engineering firm) is an example of a company which was founded in the U.S. but possesses locations throughout the world. Therefore when a new aircraft is being developed, smaller "sub-projects" (fuselage, cockpit, wings, etc.), which are manufactured in different countries, are then brought together for the final assembly. This approach requires the project to be conceived as a whole from design to manufacturing and maintenance by international team before the "sub-projects" could be started. It is highly diversified projects like this that require "global competence"[1] in order to be successful. Boeing not only possesses an international "assembly" process, but also has "employees and executives working with local national and international environmental organizations in a number of voluntary and professional capacities"[2]. The research project by the European Organization for Nuclear Research's (CERN), which launched the Large Hadron Collider (LHC) in 2008 has become an example of "a collaboration between 10,000 scientists and engineers from 100 countries"[3].

Study abroad programs or international internship programs are among the opportunities offered by major universities in the U.S. The Accreditation Board for Engineering and Technology (ABET) promote the incorporation of "international" aspects into the studies of applied science, computing, engineering and engineering technology. ABET's Engineering Accreditation Commission (EAC) is explicitly linked to acquiring a global skill set, by teaching the "broad education necessary to understand the impact of engineering solutions in a global economic, environmental, and societal context". Similarly, ABET's Technology Accreditation Commission (ETAC) requires "a respect for diversity and a knowledge of contemporary professional, societal and global issues"[4]. The EAC and ETAC's student learning outcomes based on the criterion of global competency are that the students:

a) "will demonstrate substantial knowledge [or factual understanding] of the similarities and differences among engineers and non-engineers from different countries".
b) "will demonstrate and ability to analyze how people's lives and experiences in other countries may shape of affect what they consider to be at stake in engineering work".
c) "will display a predisposition to treat co-workers form other countries as people who have both knowledge and value, may be likely to hold different perspectives than they do, and may be likely to bring these different perspectives to be a in processes of problem definition and problem solution"[4].

Participation in international experiences to foster global competencies as required by is important part of becoming a world-class engineer. Nevertheless, those experiences that require travel abroad are expensive and not always appealing to the majority of engineering student population. Another approach widely accepted by engineering academic community consists of providing students with an opportunity to participate in virtual collaborative teams which are assembled to complete a common project. This approach provides an international experience where students can develop global competencies at greatly reduced costs to the participants.

International Collaboration

There has been an adamant societal urge to advance the knowledge of global and contemporary issues within engineering education. In response, academic institutions are defining and facilitating experiences that would result in the formation of world-class engineers. The European Union has defined and facilitated multi-national educational experiences important to capacity development in their area, and this is becoming also a fundamental topic in the Western Hemisphere[5].

Several institutions located in Latin America have already begun to answer the call to create an internationally prepared engineer. Institutions such as "the Latin American and Caribbean Consortium of Engineering Institutions (LACCEI), the Ibero American Science and Technology Education Consortium (ISTEC), the Asociación Ibero-Americana de Instituciones de Enseñanza de la Ingeniería (ASIBEI), and Engineering for the Americas (EftA)" have begun "to promote the formation of world-class engineers for the Americas as well as an assortment of resources and opportunities that facilitate the participation of faculty, staff, and students from Latin America and the Caribbean in a variety of engineering education experiences"[5]. Administering projects that involve students (of a similar study) from different countries is highly beneficial for each group of students; learning, collaborating and incorporating different ideas present in different countries is analogous to the process used from internationally based companies such as Lockheed Martin to complete a mutual task.

The Latin American and Caribbean Consortium of Engineering Institutions (LACCEI) is an international organization that understands the importance of multinational collaborations and fostering the "global" engineer. The objectives of this organization are clear and concise, containing "cooperation and partnerships among member institutions in the area of engineering education, research, and technology advancement with emphasis on:

- Faculty and student exchange
- New and/or higher level academic programs
- Dual/joint degree and certificate programs
- Distance, continuing and e-education
- Laboratory development, including higher degrees
- Industry internship, cooperative programs and career development
- Joint training and research programs, and solicitation of funds
- Development, commercialization and transfer of technology
- Dissemination of scholarly achievement and other accomplishments by member institutions"[5].

The LACCEI's intensive program serves as a basis for other universities across the globe for forming and advancing their educational process concerning international collaboration. As clear and concise as their objectives may sound, however, there are still several challenges that the society and engineers face when attempting to advance the knowledge on international collaboration. In order to understand those exact challenges, a "workshop was developed with broad participation of administration and faculty from several universities in the US and Latin America, and the involvement of industry and government partners, all of whom have a mutual interest in identifying, defining, and facilitating educational experiences for developing global competences important to educate world-class engineers for the sustainable growth of the Americas"[6].

As a result, a collaborative network of institutions from the Americas, and more recently with the addition of Italy, has developed and executed collaborative multinational design projects as part of academic experiences for their students. The main goal of these projects is to foster international collaboration and to offer an opportunity for the students to develop professional skills through international teamwork effort in the solution of a design problem. However, a real challenge of this practice has been to create an effective interaction among the students participating in this type of projects and to maintain the flow of information, and student engagement in the project and in their learning[7]. Therefore, the aim of this work is to determine the level of motivation, interest, confidence and perceived pressure and value of the experience from the students to develop a learning module that increases motivation and self-efficacy of students participating in multinational projects in an introductory engineering design course.

Motivation in the classroom

Motivation theories incorporate a wide array of contributing factors. Modern theories most relevant to engineering pertain to goals, values, and expectations[8]. Expectancy-value theory of motivation, in particular a model refined by Eccles et al.[9], posits that expectations of success and the value placed on success determine motivation to achieve, and directly influence performance, persistence, and task choice. Expectancy of success is defined as one's beliefs about competence in a domain; it is not necessarily task-specific.

Aspects of instrumentality capture how students perceive the importance of what they are doing in class relative to their future careers. Students' expectancy is based partly on their self-efficacy[10], in addition to their perceptions about the difficulty of the goal, their prior experience, and peer encouragement from others[8]. Students with high self-efficacy use more cognitive and metacognitive strategies as well as self-regulatory strategies such as planning, monitoring, and regulating[11]. Achievement motivation, which encompasses students' attitudes about their abilities and tasks, can elucidate student choices related to persistence in engineering, solving problems, and the value of tasks encountered in an engineering environment[12]. Achievement motivation serves as a useful framework for the examination of research questions related to students' attitudes about pursuing engineering, and how these factors affect students' learning experiences[13].

It's evident that those who persist in engineering have different motivation profiles than those who do not (higher future perceptions). It has also demonstrated[13] a shift in students' motivational profiles over the course of an academic year (decreased expectancy, increased future and present perceptions). Another research[14] demonstrated that expectancy and future time perspective frameworks may be limited at identifying motivational differences between engineering majors, but they do show differences on course related items such as, "I am struggling in this course." and "I have to work harder than other students". The relationship between students' cognitive output and their motivation was examined[13] using their solutions to first year engineering problems. The observed decrease in expectancy over first year is similar to results found by other researchers[14].

Hutchison-Green et al. found that first semester engineering students base their beliefs about self-efficacy, which is related to expectancy, on comparisons to the performance of their peers, and their perception that they work or learn slower than their peers can lead to a drop in self-efficacy[15]. Jones et al. examined first year engineering students' achievement and career plans,

and found that students' perceptions about their abilities decreased over the course of the first year[14]. Yet Benson et al. reported increases in students' perceptions of the future and present, which were important in terms of what a first year program offered to students and what students were expecting from their education. The first year courses aim to introduce students to different fields of engineering through contextual problems, guest speakers, tours with engineering departments on campus, and various career-related activities that would inform students' perceptions of their futures as engineers[13].

The analysis revealed that a student's future perception has a significant influence on the probability of his or her persistence in an engineering major two years into college. The fact that present perception has a negative effect on persistence was initially surprising. However, subsequent analysis identified this to be a case of an interaction between future and present perceptions. This interaction may be explained as those students who are focused on the value of achieving success in their present tasks, surpassing their focus on what they are likely to achieve in the future, will be more inclined to change majors in order to achieve their present goals (passing classes, maintaining a high GPA, etc.). However, present perception has minimal impact on students whose perceptions of the future are high as well. These findings were anticipated by Raynor[16], whose research in achievement motivation argued for two types of goal paths: open and closed. A "closed" path to a goal exists when students perceive the completion of a short term goal as the "end" of their path with no connection to future goals. The "open" path is where short-term goals are connected to other future goals and the "end" of the goal path is not specified. Raynor and others have demonstrated that open goal paths provide stronger motivational incentives for achieving the short term goals on that path than closed goal paths[13]. This study provides similar evidence: if students are overly focused on tasks or goals in the present, they are on a "closed" goal path as described by Raynor; if they are focused on both present and future tasks and goals, they are on an "open" goal path. The study identifies that future perception is a critical motivational construct, which could be used to maximize student persistence. In addition this work begins to establish the effect of motivation in problem solving scenarios, showing that students with lower perceptions of the future (an increased likelihood of a closed path goal) are less likely to use problem solving techniques of other successful students in their courses. Prior research by Matusovich et al. found that attainment value can play a critical role in students' choices to persist in engineering, and suggest that educators strive to increase students' attainment value by focusing on factors such as identity that contribute to value beliefs[17]. The findings of this study complement this prior work, as they reinforce the need to examine the temporal orientation of students' beliefs[13]. To understand the full influence that value and identity can have on student persistence, we need to be clear whether present or future perceptions or values are under consideration.

Engineering student must be motivated in order to effectively apply their intellectual resources in their educational experiences. Educators should understand factors in students' development that contribute to motivation (e.g. expectations, values, goals, and attitudes) as well as their cognition and academic performance. Past research has addressed the affective and cognitive domains independently, but there has been little work on how affective factors are related to learning for engineering students. Understanding these relationships will address the greatest challenges facing engineering educators: increasing interest in engineering, creating a more diverse engineering workforce, and preparing students for a future of rapid technological change and globalization[13].

Another aspect which affects motivation is goal proximity. Distal goals that reach far into the future provide a general, but weak, motivation for performance, proximal sub-goals that provide immediate indicators of success and that support the ultimate distal goal provide a greater source of motivation. Thus, far-reaching goals for students should be partitioned into sub-goals that stimulate performances leading to the accomplishment of the sub-goals and ultimately the distal goal itself[18]. This approach will allow increasing self-efficacy of students and further affecting their motivation.

Self-efficacy of participants

Developing self-efficacy within the student is considered the key element for continuous progress and student retention. Bandura[19] defines self-efficacy, as one's perception of capability in organizing and executing actions that accomplish desired tasks. Whereas, Speier and Frese[20] assert "self-efficacy … refers to the notion that one can bring about positive results through one's own actions". Following is Bandura's[19] statement on the importance of this belief in capability: Self-efficacy influences the courses of action people choose to pursue, how much effort they put forth in given endeavors, how long they will persevere in the face of obstacles and failures, their resilience to adversity, whether their thought patterns are self-hindering or self-aiding, how much stress and depression they experience in coping with taxing environmental demands, and the level of accomplishments they realize. Thus, an understanding of the principles used to enhance self-efficacy is of paramount importance to educators in general. The above outlines critical value in elaboration of these principles, their role in cognitive motivation, and specific implications to engineering education[18].

Self-efficacy plays an important mediating role in goal theory[21]. Goals should be challenging but not perceived to be beyond capability. If individuals must expend a great amount of time and effort to accomplish a goal, then they are more likely to choose an activity that they feel capable of performing successfully and that will lead to a valued outcome rather than wasting their time in a self-perceived futile endeavor. However, distal goals that are perceived to be beyond capability may still be adopted if proximal sub-goals are created within one's range of self-efficacy[18]. The accomplishment of correctly set sub-goals can enhanced self-efficacy (by mastery current activities), which will lead to increasing students' commitment to the larger, distal goal.

Bandura[19] asserts, "Aspect of self-efficacy that is most germane to how much is accomplished is people's perceived perseverant capabilities—that is, their belief that they can exert themselves sufficiently to attain required levels of productivity". In contrary, one's feeling of self-inefficacy related to the required effort to complete a program of study can lead to decrease of students' engagement in an engineering curriculum and potential withdrawal.

Another theory of cognitive motivation is *attribution theory*[19]. This theory describes the motivating influence of how an individual attributes causes of past successes and failures thereby affecting future choices of behaviors[18]. If a person attributes the success of a past performance to hard work or a failure to a lack of effort, then that same person is more likely to engage in a similar performance in the future as the need arises. It can be explained by positive feelings of self-efficacy that they enhanced in the success but were unaffected by the failure. However, attributing success to luck or failure to lack of capability may cause that same person to choose not to engage in that activity in the future because of a perceived lack of control in the success or a lack of self-efficacy in the failure.

Effort attributions, like causal attributions, are mediated through the self-efficacy mechanism. Effort attribution refers to how an individual attributes the causes of the effort expended in performing a chosen behavior, e.g., a high effort is an indicator of low ability[22]. Effort attributions are based upon whether ability is perceived as being of static or dynamic proportions[19]. If ability is perceived to be static and temporally stable, then a high effort is perceived as an indicator of low self-efficacy; however, if ability is perceived to be dynamic and capable of influence, then ability is enhanced with effort with a concomitant increase in self-efficacy[18].

Self-efficacy, the strength of belief that one can complete a task, is the critical determinant of persistence and retention, as students must believe they are capable of succeeding in order to persevere[23]. The role of self-efficacy in persistence is especially pronounced for women in engineering programs[24]. In the social cognitive theory model of self-efficacy proposed by Bandura[19], three factors which contribute to self-efficacy are identified: mastery experiences, vicarious experiences (i.e. identification with role models) and social persuasion (positive feedback from others). Mastery experiences, of course, are what educational experiences generally seek to specifically provide. But the latter two contributors to self-efficacy suggest that women and underrepresented minorities may be at a substantial disadvantage in developing high levels of engineering self-efficacy, in that their choice to study engineering may be undermined by identity threat or by a lack of role models[25].

Best Practices to increase self-efficacy in engineering education

Effective leadership is crucial to the success of global virtual teams. Team leaders have many responsibilities and face many challenges. Leaders must provide structure for team members and find ways to personalize virtual work relationships. Often, leaders of virtual teams are also charged with the responsibility of media selection and of helping team members adapt to the technologies being used for virtual collaboration. Studies of leadership can be roughly divided into two categories: 1) studies that examine the behaviors of practitioners charged with leading virtual teams in the workplace; and 2) research conducted with students participating in virtual team projects. This study examines client-based virtual team collaboration between students at the University of Limerick (UL) in Limerick, Ireland and students at the University of Central Florida (UCF) in Orlando, Florida, USA. That paper focuses on the analysis of designated and emergent leaders during the project[26].

Project-based learning is associated with increased student satisfaction, skills development, and long-term retention of material[27]. In engineering education, it is an effective mode in which to teach design[28] and can closely model engineering practice: in a typical course, teams ideate, design, and prototype an engineering product. The types of skills developed in project-based courses, including teamwork, communication, and self-directed research, are congruent with broader professional goals for graduating engineering students. Finally, current accreditation guidelines for U.S. schools require a capstone design course for all engineering programs[26]. Therefore major U.S. universities incorporate project-based learning into engineering curricula.

Project-based courses reflect authentic engineering experiences, they are considered to facilitate a sense of domain mastery and thus lead to an increase in engineering self-efficacy. Self-efficacy is also closely related to motivation, as a student's confidence in their abilities directly impacts

their course of action; self-efficacy in engineering and related domains is a prerequisite for both choosing engineering major and persisting in it[18]. Finally, engineering self-confidence and self-efficacy can vary with demographics; they are notably lower for women than their male counterparts. There is evidence that men show increases in self-efficacy (across a range of constructs) after taking project-based courses, particularly those in which they build a physical prototype, but no similar evidence for women[25]. Project-based learning is associated with increased student satisfaction, skills development, and long-term retention of which students work as a team to design[29].

As educators, the goal is to create learning experiences for students in order to scaffold the development of skills. In the case of first-year engineering design courses, these skills might include design, technical skills (such as CAD), and professional skills (such as teamwork). However, evaluating students on what they produce and not on what they learn results in a goal orientation geared towards most efficiently achieving the goal set by the instructor. This is likely to be doing students a significant disservice: students, who have skills at the start, whether technical or professional, may develop them further but students who have less experience at the start of the course may not develop them at all. Not only does this compromise their skills development, but it compromises the development of their engineering self-efficacy, and therefore is likely to contribute to students, particularly those from underrepresented groups, leaving engineering[25].

Because self-efficacy affects motivation, the engineering professor should understand how to develop this belief in capability and incorporate these principles in instruction. Mastery experiences, vicarious experiences, verbal persuasion, and physiological/emotive arousals affect efficacy assessments. Therefore, the professor should incorporate strategies that enhance efficacy through performance attainments that develop desired skills (mastery experiences), by increasing peer interaction (vicarious experiences), accurately telling students that they have requisite capabilities (verbal persuasion), and recognizing student stress and imparting coping strategies (e.g., teaching students that reductions in stress will occur with increases in ability). In addition, professors should inform students of the correlation of course performance goals to valued engineering outcomes thereby fostering commitment not only in the goals, but also in the performances that will lead to enhanced self-efficacy. A commitment should be placed on deciding what skills are of true importance to a practicing engineer, because it is difficult to develop a course without a destination[18].

Work aims

The main goal of this work is to determine the level of interest/enjoyment and pressure/tension of students participating in multinational collaborative projects, as well as the perception of competence, optional choice and value/usefulness of students on this educational experience with the purpose of using this information to develop an educational module to better prepare students for the international experience. A questionnaire is used to address the following questions:
- Are students motivated and interested in participating in multinational collaborative projects?
- Do students feel pressure or tension to get involved in multinational collaborative projects?

- Do student has the perception that they are well prepared to participate in multinational collaborative projects?
- Do students have the perception that they work in the multinational collaborative project since they don't have a choice?
- Do students believe that this is a valuable and useful experience?

Methodology and Results

For this study, a questionnaire consisting of 32 questions was used. The first five questions are about demographics. The next 27 seven questions were distributed in five constructs as follows: motivation and interest (7), perception of competence (5), pressure and tension (5), perceived choice (5), and value and usefulness (5).

For this study, a total of 47 students from a first year engineering design course participated completing the survey. The distribution of students based on class standing, gender and ethnicity are shown in Figures 1 to 3 below.
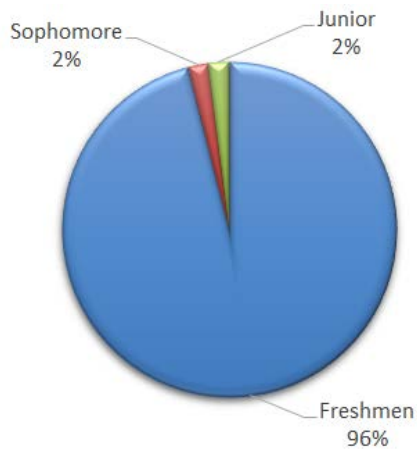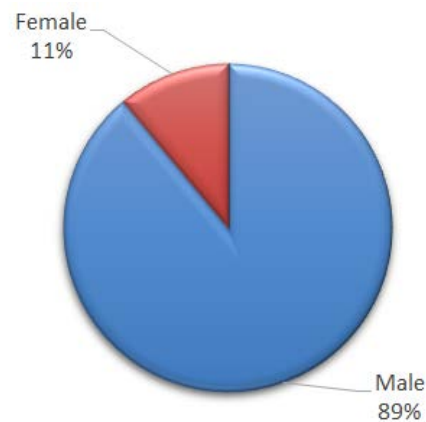

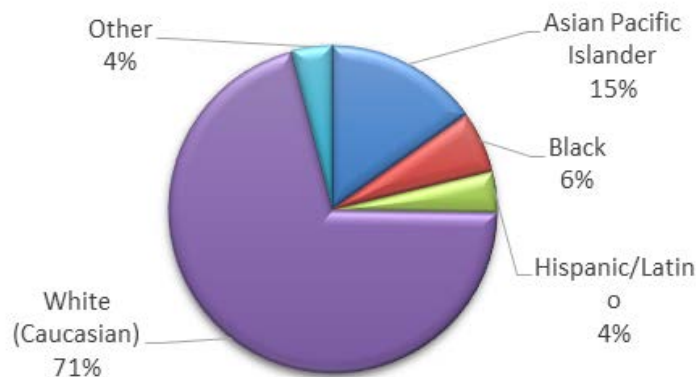Figure 1 Students level distribution   Figure 2 Gender distribution

Figure 3 Ethnicity distribution

Besides the demographic information, 27 questions were grouped in five constructs to capture the information to answer the questions posted for this work. The questions used Likert scale format where students select from a scale from one to seven. The summary of statistical data is presented in Table 1.

Table 1 Summary of statistical data

Construct	N	Mean	Standard Deviation	Minimum	Maximum
Interest/Enjoyment	47	5.438	0.234156	1	7
Perceived Competence	47	5.374	0.292547	1	7
Pressure/Tension	47	3.627	0.299158	1	7
Perceived Choice	47	3.638	0.943853	1	7
Value/Usefulness	47	6.122	0.185839	1	7

Discussion of Results

Based on the results obtained from the questionnaire and summarized in Table 1, it can be observed that students have the perception that multinational collaborative projects are valuable and useful for their professional careers ranking this construct very high with a 6.122 mean value in a 1 to 7 scale. Students also expressed motivation and interest in participating on that experience ranking this construct as number two with a 5.438 mean value. Students feel competent to participate in the projects (5.374 mean) and they don't feel pressure or tension by participating in the projects (3.627). For all the above cases, the standard deviation varies between 0.185839 and 0.299158 showing a confident data. In the case of perceived choice, data shows that students have the perception that they don't have an option and are working on the project because is a required task in the course and not an activity selected by them as a learning experience. The standard deviation in this case is 0.943853 showing a more spread data.

Proposed Intervention

The preliminary assumption that triggered this work was that students in a commuter campus in the U.S. might not be motivated or interested in multinational collaborative projects and that they might not be confident about their readiness for those projects. It was assumed also that students might be intimidated by the experience and that they felt pressure and tension. This initial stage would cause challenges in keeping the collaboration at a successful level. However, according to the data, students expressed that they were motivated, confident and relaxed about the experience before starting the project. This might be due to an overexcitement for the international experience and the opportunity to collaborate with other students globally. However, this initial predisposition contrasts with the behavior of the students during the multinational experience when challenges arise and it is difficult for the teams to keep the interaction, manage the project, and have a successful experience. It seems that there was an idealized perception of the experience and the notion that the collaboration would run smooth. Hence, students were not prepared to deal with the challenges and overcome the difficulties. As a result, the following intervention actions are proposed to better prepare students for the multinational collaborative projects:

Before the multinational project starts:

- *Set realistic expectations:* clearly explain students the challenges that will be phasing during the multinational collaboration and the possible causes that can originate them. Provide a set of challenges and proposed solutions to overcome them. This will keep the students focused and realistic during the entire experience.
- *Prepare students for cultural differences:* students should be prepared to deal with students with different cultural backgrounds and languages. Even though English is used as the official language for the multinational project, students should also be receptive to the potential limitations of the international partners and should contribute to the collaborative effort.
- *Prepare students to work with different educational levels:* the collaborative networks are formed with students from different educational levels and they should respect and appreciate those differences. They should be ready to learn from those more advance and ready to help those with a lower educational level (freshman working with seniors and vice versa).
- *Explain the scope of the project and expected outcomes:* the scope of the project and the expected outcomes should be clearly defined including collaborative activities, interaction, and deliverables.

During the multinational project:

- *Monitor de progress:* guide students during the collaborative experience. Provide the space for the students to collaborate and work together but be attentive to intervene if the interaction is not satisfactory. Work in collaboration with instructors abroad who are also members of the project.
- *Encourage collaboration:* encourage students to collaborate and assig tasks and activities involving collaboration that should be part of the project and students have to report on them.
- *Help overcoming the challenges:* as you monitor, be attentive to difficulties phased by the collaborative networks and assist the student in overcoming the challenges.

Conclusions

This work has revealed that the biggest challenge of international projects might not be to motivate the students or get them interested in the experience or even relax them or highlight the importance of the multinational projects for the development of competencies for their career. The biggest challenge might be to keep the motivation and the level of interest of the students high during the multinational project. If the challenges are not managed properly or students don't have the mindset to overcome them appropriately, the level of interest decreases rapidly due to the frustration and students start changing their perception about the value of the whole experience. This might be a real problem for the success of this educational experience and what instructors might consider a great learning experience might result in a poor learning activity.

The proposed intervention will be implemented in the next multinational experience during the Spring 2016 and the prep and post results will be compared to see if the level of motivation, interest and appreciation of the value of the practice remains high or increases during the experience, while the pressure and tension remains low or decreases. The results will be presented next year.

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