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# Internationalization and Student Mobility: STEAM Students Case Study

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**Abstract** - Higher education institutions have been increasingly shifting their focus towards various internationalization strategies in order to boost the numbers of international students studying abroad both as full time students and exchange students. As a result of their efforts, there has been a growing number of students who see mobility as an excellent opportunity to experience living and studying in another country. Students who undertake short and long-term mobility programmes profit from student mobility not only regarding knowledge gained but also from experiencing living abroad, being independent, exploring new cultures. However, mobility trends among STEAM students show different results. In other words, there is a negative tendency in outgoing mobility among STEAM students who are reluctant towards joining mobility programmes. At the same time, professionals who work in international office think that STEAM students would immensely profit from short and long-term mobility programmes. This paper thus addresses key challenges experienced by international office staff when trying to motivate students to undertake mobility programmes. It also explores reasons behind negative trends in outgoing mobility of STEAM students by evaluating the results of a survey among these students.

**Key words:** internationalization, student mobility, STEAM students, international office

## I. INTRODUCTION

In academic circles of today's globalized world, internationalization has become one of the buzzwords. But what does it really stand for? Jane Knight defines internationalization as “the process of integrating an international, intercultural or global dimension into the purpose, functions and delivery of post-secondary education” [1]. In other words, Knight sees internationalization as an all-encompassing and comprehensive concept, which pervades various aspects of higher education. Despite its multifaceted nature, this paper particularly focuses on one of the key concepts of internationalization – student mobility, which according to Knight “continues to be a high priority of internationalization” [2].

Student mobility is a term that refers to free movement of students between higher education institutions in different countries. It is usually limited to a defined period of time after which students return from the host university to their home university. Data show that the number of mobile students has been growing steadily over the years. According to Tse-Mei Chen, George A. Barnett and OECD data in Jane Knight, “The growth in the number of

mobile students from about 238,000 in the 1960s to 3.3 million in 2008 is staggering. If forecasts are correct, this number will double in another ten to fifteen years” [3].

Depending on the direction of mobile student flow, student mobility can either be described incoming or outgoing. Student mobility programmes can be divided into several categories. Based on the duration of the programme students take part in, student mobility programmes can be defined either as short or long-term. Semester and yearlong mobility programmes are those during which students stay at a foreign host institution for a semester or whole academic year, while short-term programmes last about three or four weeks, usually during summer vacation period. Popular short-term programmes include summer schools, which offer various theme-specific courses or intensive language courses. Knight thinks that short term mobility programmes, such as semester or year abroad programmes are popular mostly among students who are unable to afford studying abroad as full-time students or do not have the time to do it [4]. However, when examining reasons why students decide to study abroad as full-time students, the rationale is far more complex. In their scientific paper “The ‘Push-Pull’ Factors Influencing International Student Selection of Education Destination”, Tim Mazzarol and Geoffrey Soutar discuss a selection of various push and pull reasons that motivate students to study abroad. As a starting point, they identify three stages in the decision-making process of students who decide to study in a foreign country. Firstly, the student has to make a conscious decision to study abroad and not in his/her home country. After deciding that studying abroad is the right choice, the student selects the host country where he/she will pursue the studies. The final decision the student has to make is the selection of the host university, which again depends on the institution's reputation regarding quality, courses selection, expertise of teaching staff [5].

When comparing these two sets of reasons behind the decision to study abroad, it can be argued that, from the point of view of students, it is much easier to make a decision to participate in mobility programs than to decide to study abroad as full-time students. Mobility programs offer students a possibility to experience living abroad in a foreign country for a limited period of time, after which they can return to their home university and home country. During their mobility period, students can profit from learning a foreign language, exploring the culture and country they are living in, meeting young people from



different parts of the world, becoming independent and more open-minded.

## II. EXAMPLE OF BEST PRACTICE: ERASMUS PROGRAMME

In the European Union, it is clear that mobility as a general concept plays an important role in its core values and policies. In fact, in 2006 the European Parliament and the Council of the European Union passed the European Quality Charter for Mobility in which it is stated that, “Mobility is [...] one of the main objectives of the European Union's action in the field of education and training, based both on common values and on respect for diversity. It is an essential tool for creating a genuine European area of lifelong learning, for promoting employment and reducing poverty, and for helping to promote active European citizenship”[6]. Having in mind this premise, it is understandable why the EU devotes considerable effort in maintaining its widely known and recognized programme Erasmus, which was established more than 30 years ago, in 1987. The programme has since served as an example of best practice when it comes to the mobility of students and higher education academic and non-academic staff. According to the publication of the General Secretariat of the Council as many as 33 programme countries and around 90% of European universities are involved in Erasmus+ scheme. In 2014 Erasmus evolved into Erasmus+, the EU's programme for education, training, youth and sport and it was allocated a budget of 14.7 billion euro for the period 2014 – 2020. By the year 2020, its aim is, among other things, to support 2 million higher education students in mobility exchange [7].

As mentioned earlier, Erasmus+ is widely known and recognized, even outside of the European Union. What is more, the programme overwhelmingly dominates among other less popular or famous mobility and exchange programmes in Europe. The Special report 22/2018 of the European Court of Auditors even established that, “Erasmus+ is a well-known, successful EU brand. Erasmus+ plays a key role in building up learning mobility abroad and has a positive effect on participants' attitudes towards the EU. Countries would not be able to achieve such effects acting alone” [8]. In other words, Erasmus+ is popular among students to the extent that it has indeed become a recognized EU brand. It has won its popularity because it provides students with the opportunity of studying at one of the partner universities for a defined period of time, providing them a financial grant that helps them cover their living costs and offering the opportunity of recognizing credits they collect during their mobility period. In other words, students can experience living and studying abroad, while at the same time retaining all the rights and student status they had at the home university. When they return to their home university, they can simply pick up where they left of. During the period of time they spend abroad, students have the opportunity to hone their language skills, experience living on their own in a foreign country; moreover, they become more independent, open-minded towards different cultures and lifestyles, which is

important for citizens of a multicultural Europe. Besides, nowadays employers prefer employees with an international study or work experience, which positions Erasmus students in a more competitive place on the labour market. In fact, Erasmus+ Higher Education Impact Study found that, “students who complete an Erasmus+ mobility for studying or training boost their employability skills, with a large majority (72%) saying it had been beneficial or highly beneficial in finding their first job. Their mobilities increased their technical, inter-personal and inter-cultural skills and competences, as well as their self-confidence, ability to achieve goals, and social and cultural openness” [9].

Having in mind the popularity of Erasmus+ and its far-reaching influence, it could even be argued that in the EU, its name is identified with mobility as a general concept. In other words, when someone says “Erasmus+” what they actually mean is “mobility”. However, leaving aside the general popularity of Erasmus+, studies show that this EU brand is not equally popular among students of all study programs. The EU survey Erasmus Facts, Figures & Trends: The European Union support for student and staff exchanges and university cooperation in 2013-2014 found out that, “Students of social sciences, business and law made up the biggest share (41 %) of those on exchanges. The second biggest share was made up of students of humanities and arts (22 %). Students of engineering, manufacturing and construction (15 %); science, mathematics and computing (7.5 %); and health and welfare (6 %) continue to participate actively, though in proportionately lower numbers compared to the overall number of students taking these subjects” [10]. Considering these results, it seems that students of humanities and arts are more prone to undertaking mobility programmes and consequently constitute a major share of students willing to participate in student mobility programmes.

## III. STUDENT MOBILITY TRENDS AT ALGEBRA UNIVERSITY COLLEGE

Algebra University College in Croatia has six undergraduate and seven graduate study programmes, specialized mainly in the area of IT. On the undergraduate level, there are three subspecializations in computer science, namely, Software Engineering, System Engineering and Multimedia Computing, and two more subspecializations on the graduate level: Data science and Game Development. Apart from these study programmes, Algebra University College carries out Digital Marketing study programme on both undergraduate and graduate levels. Moreover, in the area of design, Algebra University College carries out Visual Communications Design and 3D Design on the undergraduate level and Design and Communications Management on the graduate level of studies.

### A. Incoming Students

According to the data provided by the International Office of Algebra University College, the institution has so far signed bilateral mobility agreements and memoranda of understanding with 124 institutions all

around the world, out of which 88 are Erasmus+ Inter-institutional Agreements and 36 are bilateral agreements signed outside of Erasmus+ framework. The first incoming Erasmus+ students studied at Algebra University College in the academic year 2013/2014 and up to the academic year 2019/2020 incoming students have shown great interest for spending their semester abroad at Algebra University College.

### B. Outgoing Students

Outgoing mobility, that is outgoing students, at Algebra University College have been active since the academic year 2012/2013 and up to the winter semester of the academic year 2019/2020 the International Office has marked a steady exponential growth in the number of students who participated in long and short-term mobility programmes. In the academic year 2019/2020, the International Office has also recorded a marked growth of interest among students towards short-term mobility programmes (summer and winter schools) and student internships. When it comes to the distribution of Algebra University College students regarding their participation in long and short-term mobility programmes based on their study programs, there was almost an equal proportion of STEAM and Digital Marketing students when considering the period from the academic year 2012/2013 up to the current academic year 2019/2020.

However, in the academic year 2019/2020 and compared to the previous years, the International Office marked a significant growth of interest of Algebra University College students for participation in long-term mobility programmes. Already in the winter semester, a substantial number of Digital Marketing students participated in Erasmus+ student mobility for studies and more Digital Marketing and Design students will participate in Erasmus+ student mobility for studies in the summer semester of the academic year 2019/2020. Compared to previous years, this is a substantial increase in participation of students in student mobility for studies programme, more precisely, an increase of 300%. However, most of the students who have undertaken student mobility for studies belong to the area of digital marketing, while a smaller number of students belong to STEAM area. The question thus is what are the reasons behind the lower interest of STEAM students towards undertaking short and long-term student mobility programmes?

## IV. RESEARCH AIM AND QUESTIONS

The general research aim of this article is to determine why STEAM students of Algebra University College are less inclined towards undertaking short and long-term mobility programmes.

To fulfill research aim more easily, the following research questions were defined:

1. Research question: What motivates STEAM students for participating in student mobility programmes?

2. Research question: What do STEAM students consider as advantages of participating in student mobility programmes?
3. Research question: What do STEAM students consider as disadvantages of participating in student mobility programmes?

### A. Research Sample

The research was conducted on the voluntary sample of 116 STEAM students of Algebra University College who have not yet taken part in student mobility programmes. The term STEAM stands for the fields of science and technology combined with the field of arts, in the case of Algebra University College, these are the following study programs: Software Engineering, System Engineering, Multimedia Computing, Game Development, Data Science, Design and Communications Management and Visual Communications Design. Out of the total number of survey participants, 46 (39.7%) of them were Software Engineering students, 28 (24.1%) Visual Communications Design students, 20 (17.2%) System Engineering students, 15 (12.9%) Multimedia Computing students. Other participants were 3 (2.6%) Game Development students, 3 (2.6%) Design and Communications Management students and 1 (0.9%) Data Science student.

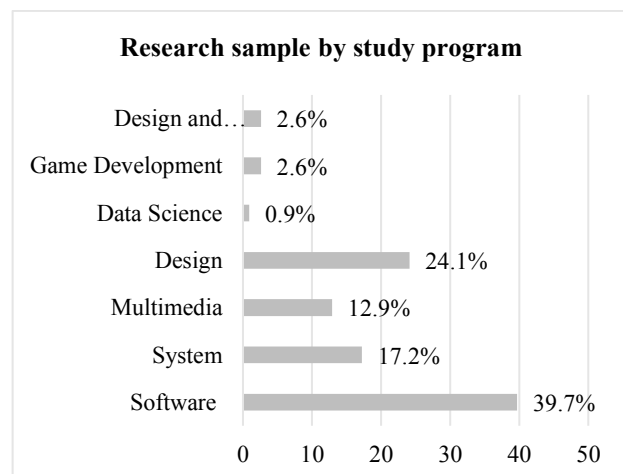


Chart 1. Research sample by study programme expressed in percents, N=116.

The majority of participants were on the undergraduate level of their studies; 112 (96.5%) of them, while 4 (3.5 %) of the participants were on the graduate level of their studies. The majority of participants were male, 86 (74.1%) of them, while there were 30 (25.9%) female participants.

### B. Research Methods

The research was conducted using an anonymous voluntary survey during the winter semester of the academic year 2019/2020. The survey was designed as a Google Forms questionnaire with 12 questions: seven closed-ended questions, one open-ended question and two statements. Four questions at the beginning of the questionnaire were related to demographics. For some

questions and statements, the participants had to indicate the extent to which they agree or disagree with them. The level of agreement or disagreement was defined using Likert scale.

In two questions, the participants had to indicate whether they would like to participate in mobility programmes and in which type of mobility programmes (short or long-term) they would prefer to participate. Two questions were asked to check how well students were informed about mobility options and who they thought they should contact to get more information. Finally, to analyse the results in Google Forms quantitative method was used. For the purpose of this article, the emphasis is put on the analysis of six selected questions, which are listed in the following paragraph.

### C. Research Results – Interpretation

To examine the first research question more easily, students were asked the following set of questions in the questionnaire:

1. *I am familiar with the possibilities of participating in student mobility programmes*

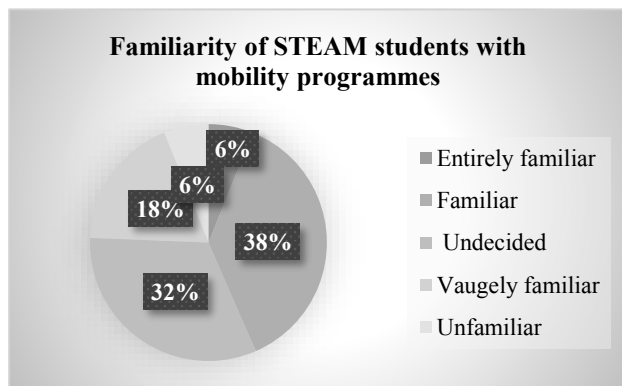


Chart 2. The rate of agreement/disagreement of STEAM students with the statement: *I am familiar with the possibilities of participating in student mobility programmes* expressed in percents N = 115.

When asked to state to what extent they were familiar with the possibilities of participating in student mobility programmes, only 6% of total 115 respondents say they are entirely familiar. However, a fairly large percentage – 38% of STEAM students say they are familiar with the possibilities of participating in student mobility programmes. This means that in total almost 50% of the respondents think they are well informed about the possibilities of participating in student mobility programmes.

On the other hand, 18% of the respondents say they are vaguely familiar with the possibilities, while 6% are completely unfamiliar with the possibilities of participating in student mobility programmes. Finally, 32% of students said they are undecided regarding this statement. The distribution of answers on familiarity of STEAM students with participation in mobility programmes is presented in Chart 2.

2. *I would like to participate in student mobility programmes.*

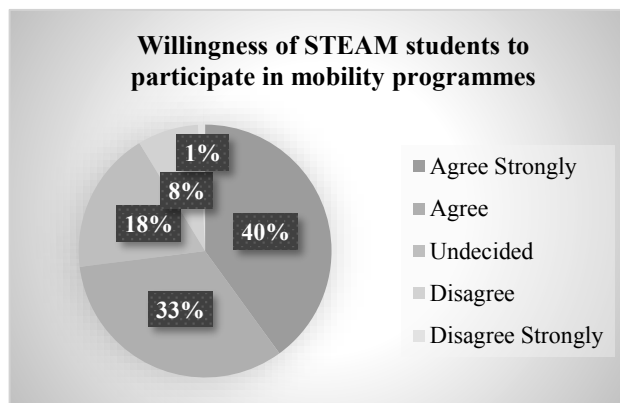


Chart 3. The rate of agreement/disagreement of STEAM students with the statement: *I would like to participate in student mobility programmes* expressed in percents N = 115.

As many as 40% of the respondents strongly agree with the statement “I would like to participate in student mobility programmes.”, in other words, 40% of STEAM students show their willingness and motivation to participate in student mobility programmes during their studies. Moreover, another 33% of them agree with the statement. In other words, 73% of all the participants in the survey stated that they are inclined towards undertaking mobility programmes in the future. On the other hand, 18% of STEAM students are undecided about whether they would like to participate in student mobility programmes, while 7.8% disagree and 0.9% strongly disagree with the statement, and thus show their unwillingness to participate in student mobility programmes. The rate of agreement/disagreement of STEAM students with the statement: “I would like to participate in student mobility programmes” is shown in Chart 3.

3. *In which type of student mobility programmes would you like to participate most?*

When asked in which type of student mobility programmes they would like to participate most, the total number of 111 respondents replied as follows: 38% percent of them would like participate in Erasmus+ student mobility for studies (SMS), while 30% of them would like to participate in Erasmus+ student mobility for traineeships (SMT). Regarding other responses, 21% of the participants said that they would like to participate in summer school programs, while 11% of them would like to take part in intensive language courses. The results of this Chart confirm the popularity of Erasmus+ programme as mentioned in one of the previous sections, since most students identify Erasmus+ programme with sole mobility. The Distribution of answers to the question “In which type of student mobility programmes would you like to participate most?” is presented in Chart 4.

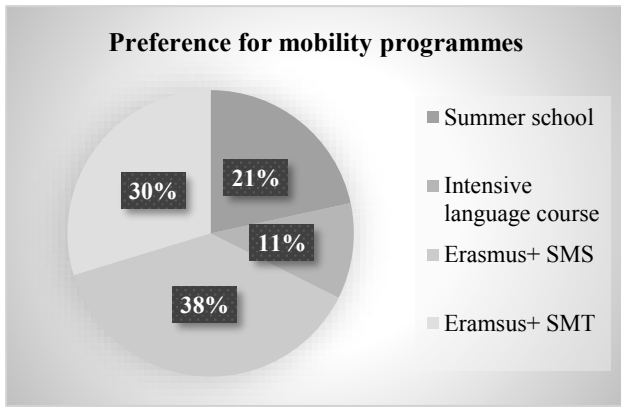


Chart 4. Distribution of the answers to the question: *In which type of student mobility programmes would you like to participate most?* Results are expressed in percents, N=111.

To examine the second research question more easily, students were asked the following question in the questionnaire:

4. *What do you think are the biggest advantages of participating in student mobility programmes?*

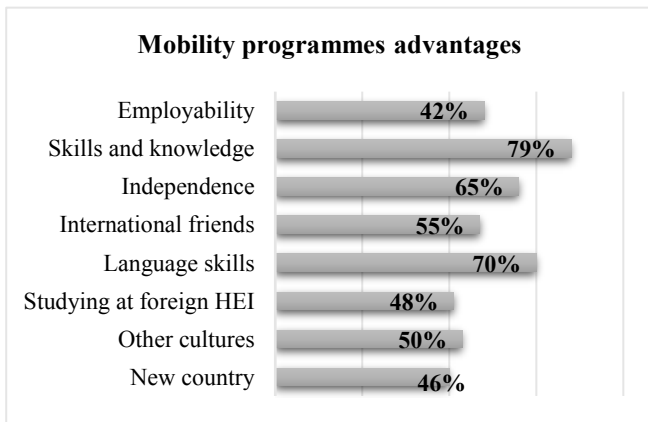


Chart 5. Rating of the biggest advantages of student mobility programmes, expressed in percents, N = 116.

Regarding advantages of participation in student mobility programmes, *acquiring new skills and knowledge* was rated as a major advantage based on the opinion of 79% of STEAM students. On the second place among advantages, 70% of STEAM students put *developing foreign language skills*. Moreover, *becoming more independent* was rated as an advantage by 65% of STEAM students. In addition, 42% of the participants think that student mobility programmes can help them in *finding their job*, while 55% of them think that it can help them *make international friendships*. Furthermore, 50% of the participants think that student mobility programmes can help them *explore new cultures*, while 48% of the participants see the sole opportunity of *studying at a foreign higher education institution (HEI)* as an advantage. Finally, the total number of 46% of the students see the opportunity of *living in a foreign country* as an advantage.

The ranking of advantages of student mobility programmes participation done by STEAM students can be seen in Chart 6.

To examine the third research question more easily, students were asked the following set of questions in the questionnaire:

5. *What do you think are the biggest disadvantages of participating in student mobility programmes?*

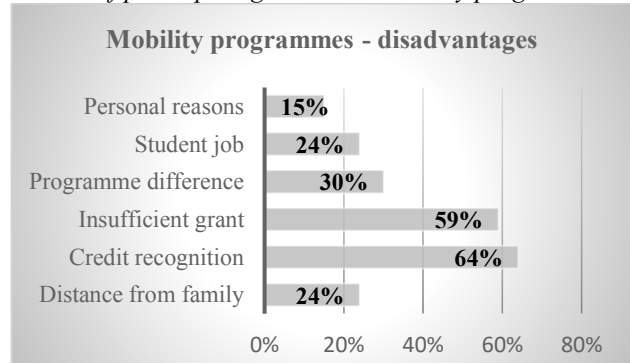


Chart 6. Rating of the biggest disadvantages of student mobility programmes participation expressed in percents, N = 116.

When considering major disadvantages of student mobility programmes participation as ranked by the STEAM students who participated in the survey, *credit recognition* was placed first with 64% of participants evaluating it as a major disadvantage. It was followed by *the insufficient amount of grant*, which is considered to be a disadvantage by 59% of STEAM student. *The difference between study programmes at home and host universities* is seen as a disadvantage by 30% students, while 24% of them think that student mobility programmes could have a *negative influence on their student job or distance them from their family*. Finally, 15% of students listed *other personal reasons* as disadvantages of participating in student mobility programmes.

The ranking of disadvantages of student mobility programmes participation done by STEAM students can be seen in Chart 6.

6. *What are other obstacles that prevent you from participation in student mobility programmes?*

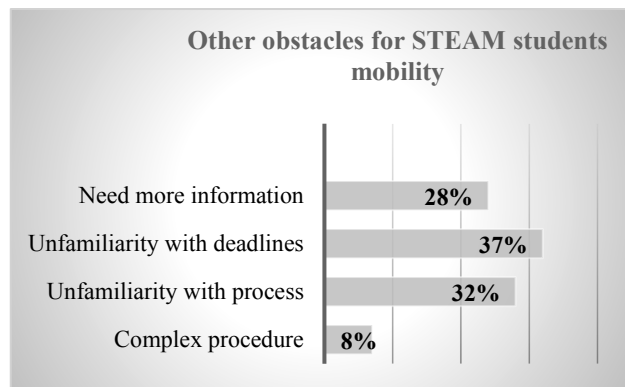


Chart 7. Rating of administrative reasons that discourage STEAM students from applying for student mobility programmes, expressed in percents, N = 116.

The final question STEAM students were asked was what are other obstacles that could prevent or demotivate

them from participation in student mobility programmes. They were given a list of possible answers from which they could assess more and less probable ones. The results have shown the following: the total number of 37% of the respondents say that they have not applied so far because they are *not familiar with deadlines for application*. Similarly, 32% of them say that they are *not familiar with the application process*, while 28% of them think they *need more information about how the application process looks*. Only 8% of the participants stated that their reason for not applying is *complex application process*.

Chart 7 shows how STEAM students ranked their reasons for not applying for student mobility programmes so far.

## V. CONCLUSION

The results of the survey conducted among 116 STEAM students of Algebra University College have shown that the majority of students are familiar with the possibilities of participating in student mobility programmes and clearly see benefits of undertaking such programmes during their studies. Moreover, the survey also showed that there is a great interest among STEAM students to participate in student mobility programmes.

At the same time, STEAM students see credit recognition and insufficient amount of grant as main disadvantages of participation in student mobility programmes, which discourage them from participating in mobility programmes. Also, some of them listed some other obstacles such as unfamiliarity with the deadlines for application process or not being familiar with the application process.

Even though a vast majority of the EU universities participate in Erasmus+, as the most widely recognized mobility programme in the EU, and a considerable amount of funds is reserved for student mobility, higher education institutions still face challenges when implementing this and other mobility programmes. As shown in the survey, students see poor recognition of credits and insufficient amount of grant as the main reasons that discourage them from taking part in student mobility programmes. Taking into account the results of the EU survey Erasmus Facts, Figures & Trends, according to which students of social sciences, business and law are a group of students more inclined to taking part in student mobility programmes, a special attention should be devoted to students of other, less inclined student groups.

At Algebra University College, the results are in line with the abovementioned study: Digital Marketing students make up the biggest share of students who take part in student mobility programmes. Therefore, when it comes to STEAM students, who are by definition a less inclined group, special care should be put on informing them about the application process details, important dates

and motivating them to undertake mobility during their studies.

Moreover, higher education institutions should also strive to overcome the disadvantages, such as being more flexible in recognizing students' credits after the end of their mobility periods. If there is a difference in course content, at least some learning outcomes should be recognized and students should get an opportunity to pass other learning outcomes or exams on time so that they can keep the pace with their home university colleagues. That way we could motivate more students to participate in student mobility programmes. This practice has recently been implemented at Algebra University College and shows better results among students who are more motivated into undertaking mobility programmes.

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