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## DIAGNOSIS ON STUDENTS' FEEDBACK FOR DISCIPLINE "SUPPLY AND DISTRIBUTION MANAGEMENT" OF INNOVATIVE STEAM CURRICULUM WITHIN THE SKILLS4FUTURE PROJECT

Maria OLEINIUC

*„Alecus Russo” State University of Balti, Republic of Moldova*

**Abstract.** STEAM education is a structured process of integration of exact sciences and art, with the aim of forming intelligent future adults, easily adaptable to society and able to value the knowledge accumulated during the entire education process in the future workplace.

**Keywords:** *STEAM, curriculum, supply, distribution etc.*

**JEL code:** *I25*

### Introduction.

Following the changes that are occurring in the world both from an ecological and demographic point of view, we, the academic environment, must face these challenges. Through the 2030 Agenda where the main SDGs are stipulated, the STEAM project focuses on changing university curricula aimed at making students aware of sustainability.

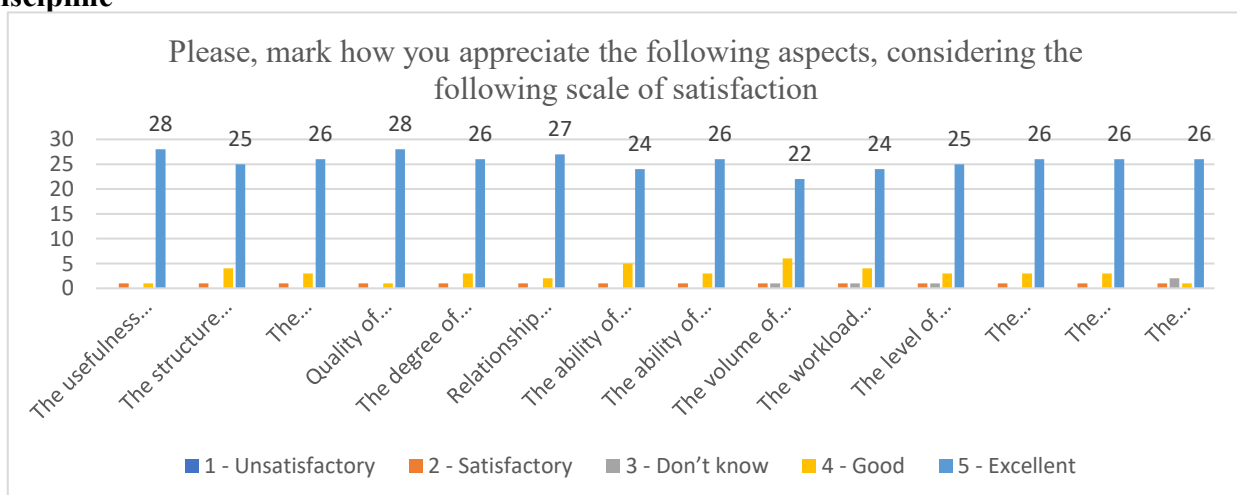
### 1. Demographic analysis of data

The feedback data were from a sample of 30 students of the bachelor programme from "Alecus Russo" Balti State University, Republic of Moldova. The respondents' students were enrolled in the disciplines updated with STEAM skills and delivered to bachelor students during the academic year of 20234-2024.

The demographic analysis of the sample shows the following distribution:

- 96,7% were students from bachelor programme in Business & Administration and 3,3% from other specialities.
- 100,0 % were from the 3<sup>rd</sup> year of study
- 20,1% of bachelor students were enrolled in full-time programme whereas 80,0% of them were in part-time (distance-learning) type programme
- 63,3% female and 36,7% male students.

### 2. The student's' degree of satisfaction concerning organizational aspects related to the discipline



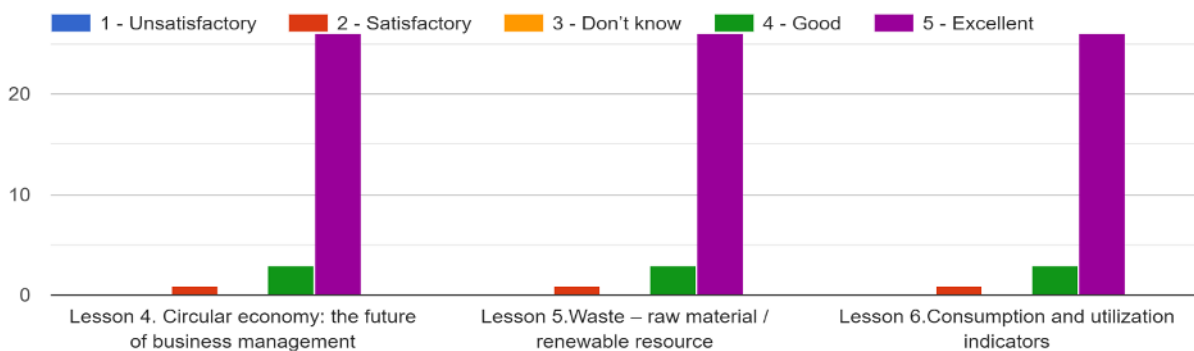
**Figure 1. The distribution of the students' satisfaction**

**Discussion:**

From the total number of respondents, for all items only 1 student assigned the qualification of "satisfactory", which denotes 3.33% of the total. For the item "The degree of difficulty of the course content" 3 students said "good" from the total number of respondents. We can also note that the majority of students answered "excellent" to all questions, the deviations being from 24-28 students, which is 80.0 %-93.3%.

**3. The student's' degree of satisfaction concerning the teaching material and learning resources for newly added theoretical lessons?**

How do you appreciate the teaching material and learning resources for following theoretical lessons?

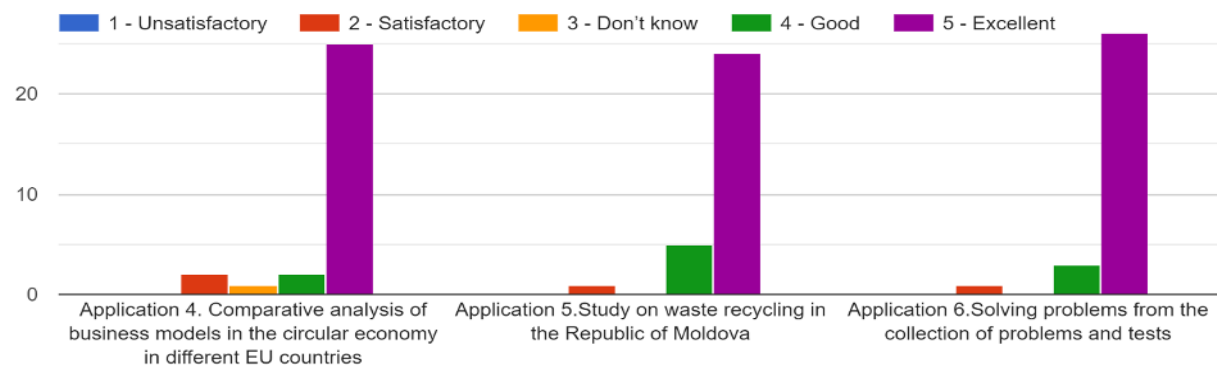


**Figure 2. The distribution of the students' satisfaction with newly added theoretical subjects for STEAM knowledge**

**Discussion:**

From the total number of respondents, regarding the lesson with the theme " Lesson 4. Circular economy: the future of business management", the qualification of "satisfactory" is appreciated by only 1 student, which constitutes 3.33%, 3 students stated " good", which is 10.0%, and 26 students said "excellent". For the lesson with the approach theme " Lesson 5. Waste – raw material / renewable resource " the qualification of "satisfactory" is appreciated by only 1 student, which is 3.33%, 3 students stated " good", which is 10.0% and 26 students affirmed "excellent" giving it a share of 86.6%. Regarding " Lesson 6. Consumption and utilization indicators " the situation is as follows: the qualification of "satisfactory" is given by 1 student, which constitutes 3.33%, 3 students affirmed "good", which constitutes 10.0%, and 26 students said "excellent".

**4. The student's' degree of satisfaction concerning the practical exercises and applications for newly added subjects?**

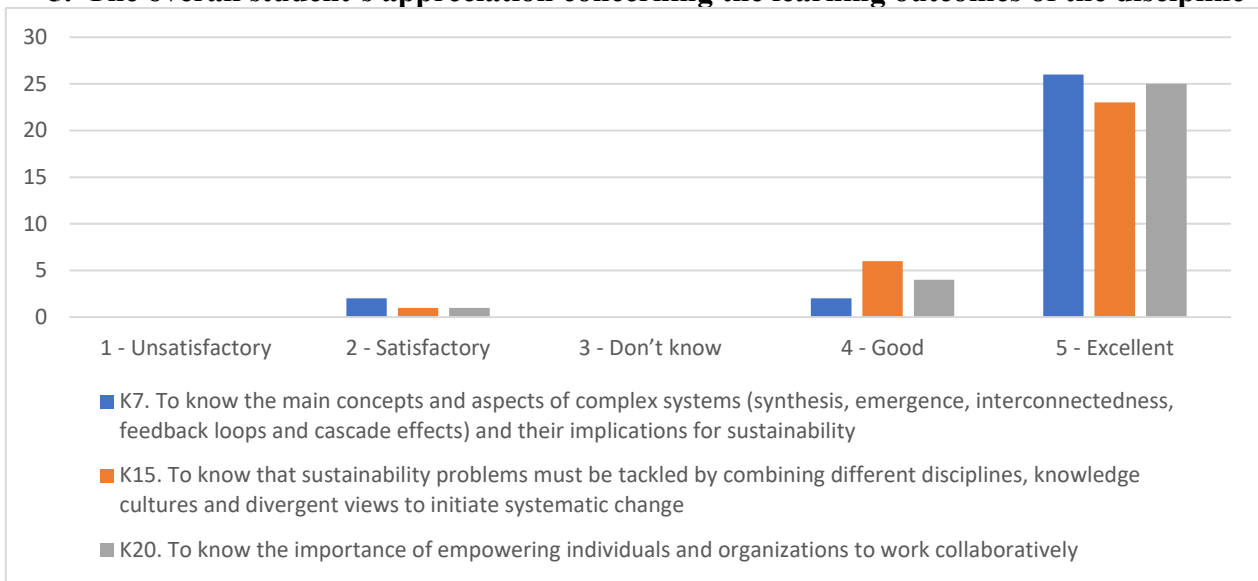


**Figure 3. The distribution of the students' satisfaction with newly added practical subjects for STEAM skills**

**Discussion:**

From the total number of respondents, regarding the practical application with the theme "Application 4. Comparative analysis of business models in the circular economy in different EU countries is appreciated „satisfactory” by only 2 students, which is 6.66%, „don’t know” by 1 student, 2 students said "good", which is 6.66%, and 25 students said "excellent", which indicates that 83.33% of the all respondents. For the practical application "Application 5. Study on waste recycling in the Republic of Moldova" is appreciated „satisfactory” by only 1 student, which constitutes 3.33%, 5 students affirmed "good", which it also represents 16.66%, and 24 students said "excellent", returning a share of 80.00%. Regarding “Application 6. Solving problems from the collection of problems and tests" the situation is as follows: the qualification of "satisfactory" is given by 1 student, 3 students affirmed "good", and 26 students affirmed "excellent".

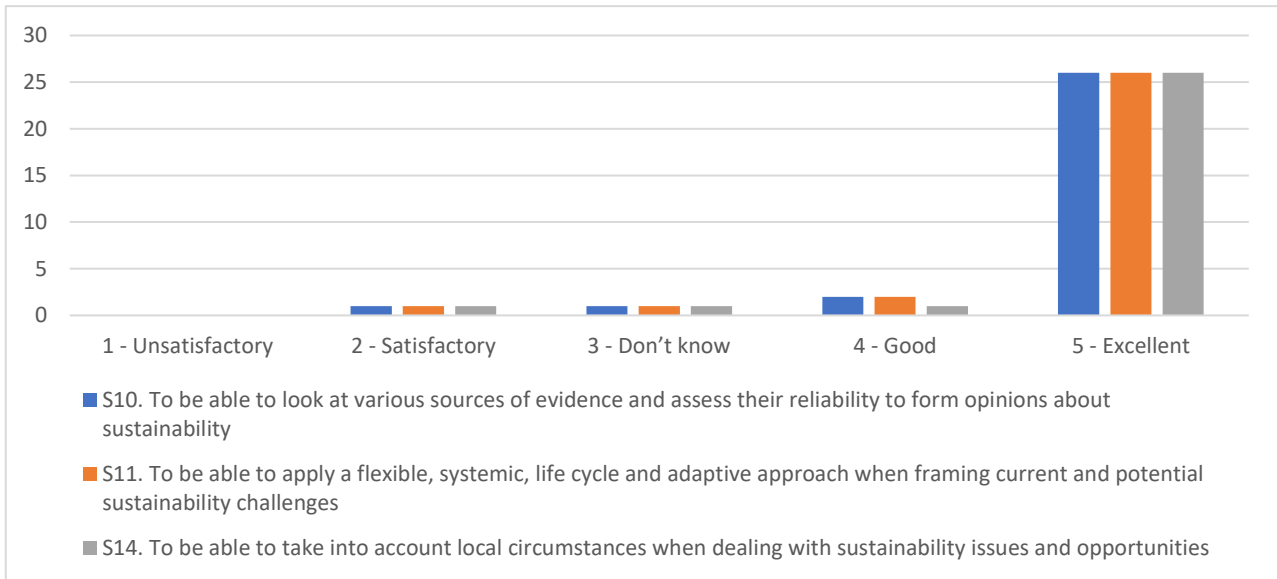
**5. The overall student’s appreciation concerning the learning outcomes of the discipline**



**Figure 4. The degree of fulfilment for learning outcomes linked to targeted STEAM knowledge (K)**

**Discussion:**

From the total number of respondents, regarding "K6. To know about the need to decouple production from natural resources and well-being from consumption" the qualification of "satisfactory" is appreciated by only 2 students, which is 6.66%, 2 students said "good", which is 6.66%, and 26 students stated "excellent", which indicates 86.68%. For " K16. To know about sustainability, including origins and further developments, main stakeholders, implications for society and the planet, environmental protection, restoration and regeneration" the qualification of "satisfactory" is appreciated by only 1 student, which is 3.33%, 6 students they affirmed "good", which is 20.00%, and 23 students affirmed "excellent", returning a share of 76.67%. As for “K15. To know that sustainability problems must be tackled by combining different disciplines, knowledge cultures and divergent views to initiate systematic change" the situation is as follows: the qualification of "satisfactory" is given by 1 student, 4 students affirmed "good", and 25 students they said "excellent".



**Figure 5. The degree of fulfilment for learning outcomes linked to targeted STEAM skills (S)**

**Discussion:**

From the total number of respondents, in terms of "S16. To be able to apply circular economy concepts, such as valuing quality over quantity and reusing and repair" the qualification of "satisfactory" is appreciated by only 1 student, which is 3.33%, the qualification of "don't know" the same is appreciated by 1 student, 2 students stated "good", which constitutes 6,66.12%, and 26 students said "excellent", which means 86.66%. For "S21. To apply the principle of using fewer resources, doing better with fewer resources, and reusing the same resources" the qualification of "satisfactory" the situation is as follows: the qualification of "satisfactory" is given by 1 student, the qualification of "don't know" the same is appreciated by 1 student, 2 students affirmed "good", and 26 students said "excellent". Regarding "S10. To be able to look at various sources of evidence and assess their reliability to form opinions about sustainability" is appreciated by only 1 student for „satisfactory”, which is 3.33%, 1 student stated "don't know" - 3.33%, 2 students "good", which also constitutes 6.66%, and 26 students affirmed "excellent", returning a share of 86.68%.

**References**

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