

QUAL-AI-TY ASSESSMENT MODEL

Embedding Student Engagement with Society in Quality Assurance Practices

Fostering Student Engagement through AI-driven Qualitative Quality Assurance Practices
A Project Developed by:

Project: Fostering Student Engagement through AI-driven Qualitative Quality Assurance Practices

Consortium Partners

Riga Technical University
University of Twente
Malta College of Arts, Science and Technology (MCAST)
European Consortium for Accreditation in Higher Education (ECA)
Accreditation Council for Entrepreneurial and Engaged Universities (ACEEU)

Authors

Riga Technical University



This work is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License (CC BY-NC-4.0) International License.

Suggested Reference

Riga Technical University. (2022). Qual-AI-ty Assessment Model: Embedding Student Engagement with Society in Quality Assurance Practices. <https://doi.org/10.5281/zenodo.7458833>

Document Reference: Qual-AI-ty Assessment Model: Embedding Student Engagement with Society in Quality Assurance Practices.

Document Version: 2022

Project Number: 2020-1-LV01-KA203-077578

Disclaimer: This project has been funded with support from the European Union. This document and all its content reflect the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

TABLE OF CONTENTS

1. INTRODUCTION	3
2. DEFINITION OF TERMS	4
3. THE U-SOCIETY QUAL-AI-TY ASSESSMENT MODEL.....	5
3.1 Definition, aim, and objectives of the model.....	5
3.2 Dimensions of the U-Society Qual-AI-ty Assessment Model.....	6
4. EXPLANATION OF THE DIMENSIONS OF THE MODEL	10
4.1 Teaching quality/ training	10
4.2 Engaging environment	12
4.3 Leadership for engagement	15
4.4 Relevance or compliance with goals.....	16
5. THE -SOCIETY QUAL-AI-TY ASSESSMENT MODEL IN USE	19
5.1 Questions for the interview assistant: maximum set	20
5.2 Questions for the interview assistant: minimum set.....	25
5.3 Questions for the interview assistant: optimum set	27
6. REFERENCES	31

1. INTRODUCTION

The Qual-AI-ty Engagement Project created the assessment model to foster a culture of quality in student engagement with society in Higher education: The U-Society Qual-AI-ty Assessment Model. This Model is a comprehensive guide aiming at capturing the modes and dimensions for a successful evaluation and monitoring of student engagement avenues captured in the Compendium of Good Practices and trained at the Qual-AI-ty Engagement Bootcamp. Further, the model also aims at capturing the barriers and drivers behind student engagement with society. Furthermore, the model encompasses the multivocality of voices, create a comprehensive framework, and contributes to enhancing the culture of quality with ownership distributed among different stakeholders.

When developing the U-Society Qual-AI-ty Assessment Model, the project reached the following indicators:

- To consult at least 6+ quality assurance staff, 2+ students, and 5+ key societal stakeholders for the preparation of the model.
- To create a guide composed of three main elements: conceptualization of the Model, operationalization of the model, and interview guide for collecting information to support the model.
- To make the U-Society Qual-AI-ty Assessment Model available for exploitation on the project's online platform.
- To disseminate the model by E-mail to 400 partners and 1000+ database contacts.

Despite the definitions of “student engagement with society”, the term is an ongoing process. Everyone responsible for the diverse processes in the institutions of higher education should take into consideration, that it is also the obligation of all, from the individual role, to promote and foster the voluntary work of students. By creating the Qual-AI-ty Assessment Model, we strive to motivate young people and students to become more engaged with society and local communities.

2. DEFINITION OF TERMS

- **Activities:** volunteering, entrepreneurship, employment, teaching and learning, cultural preservation, and participation in democracy.
- **All levels:** University level, regional level, national level, and international level.
- **Cultural expressions:** those expressions that result from the creativity of individuals, groups, and society, and that have cultural content.
- **Employment:** Employment is a relationship between two parties, usually based on a contract where work is paid for, where one party, which may be a corporation, for-profit, not-for-profit organization, co-operative, or other entity is the employer and the other is the employee.
- **Entrepreneurship:** the activity of setting up a business or businesses, taking on financial risks in the hope of profit.
- **Extracurricular activities:** higher education activities where students are not compulsorily required to participate.
- **Higher educational institutions stakeholders:** students, employees of the higher educational institution (academic staff and administrative staff), society, organizations (for-profit and non-profit), municipalities, government, media, and scientific community.
- **Meaningful involvement:** active participation with a purpose to inspire positive changes.
- **Participation in democracy:** involvement in political youth parties and organizations that strive, advocate, and protect human rights, inclusion, and equality.
- **Student engagement with society:** Student engagement is student meaningful involvement in higher educational institution-based activities that contribute to sustainable development goals of society and benefit higher educational institution's stakeholders on all levels.
- **Student:** person attending a higher educational institution: Bachelor, Master, and Doctoral level.
- **Sustainable development:** the idea that human societies must live and meet their needs without compromising the ability of future generations to meet their own needs.
- **Teaching and learning:** activities of education, instruction, or training that build knowledge or skills, which contribute to improving the quality of education for students.
- **Volunteering:** (including volunteering job) voluntary act of an individual or group freely giving time and labour for community service.

3. THE U-SOCIETY QUAL-AI-TY ASSESSMENT MODEL

The U-Society Qual-AI-ty Assessment model is based on a literature review conducted by the project partners within the project, focus group discussions, results of a bootcamp with experts in quality assurance, best practices, materials presented by the State Education Quality Service of the Republic of Latvia, and materials presented by Ilze Saleniece, Director of Political Initiatives and Development in the conference “Good and professional governance in an educational institution to promote the quality of education and democracy” held on the 22nd of October, 2021.

3.1 Definition, aim, and objectives of the model

The U-Society Qual-AI-ty Assessment model aims at assessing the level of student engagement with society in a higher education institution, looking for the possibility to apply those results in the quality assurance processes.

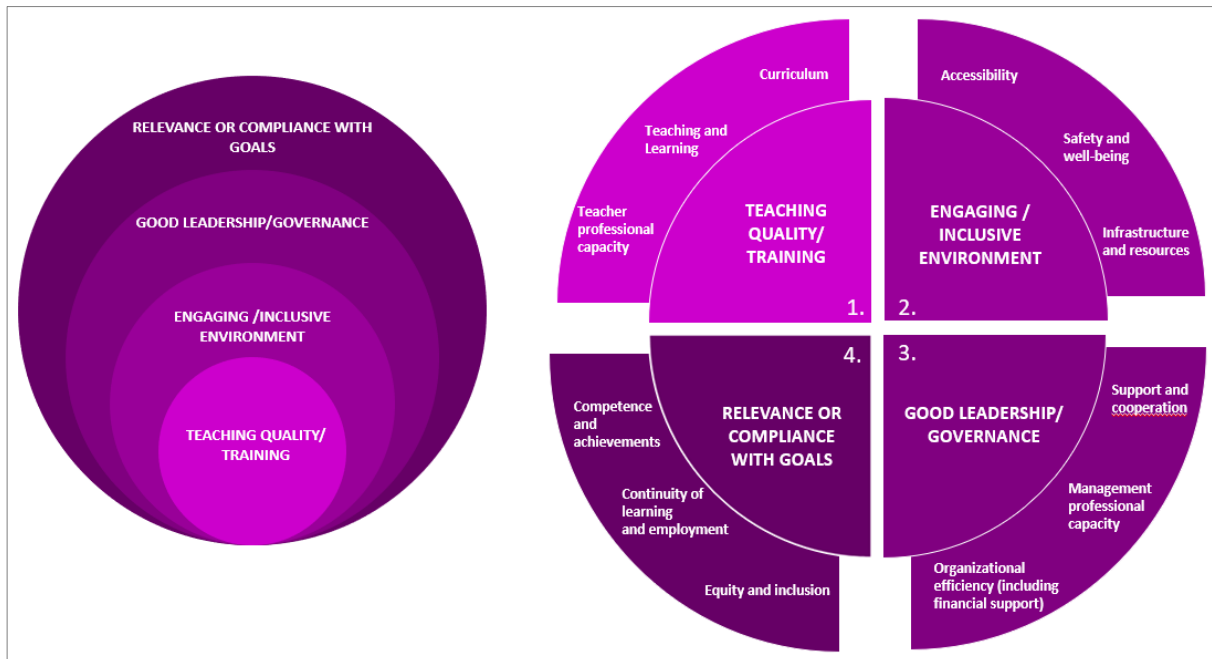
The model consists of four main dimensions to evaluate:

1. Teaching Quality and training,
2. Engaging in an inclusive Environment,
3. Good leadership and governance,
4. Relevance or compliance with goals.

For project purposes, the importance of all dimensions (sequence) will be evaluated by project partners and experts before the development of the AI tool. All four dimensions include sub-dimensions that are desegregated into multiple indicators. Fig. 1, “The U-Society Qual-AI-ty Assessment Model”, illustrates the model, its four dimensions, and the subdimensions. Additionally, Table 1., “The -Society Qual-AI-ty Assessment Model: Compliance with Bootcamp results”, presents how the model complies with the results obtained in a Bootcamp conducted with experts in quality assurance in higher education.

Figure 1

The U-Society Qual-AI-ty Assessment Model



Note: The U-Society Qual-AI-ty Assessment Model is composed of four dimensions, divided into three subdimensions each, for a total of twelve subdimensions. These subdimensions can be desegregated into diverse indicators.

3.2 Dimensions of the U-Society Qual-AI-ty Assessment Model

1. **Teaching / training quality:** the learning process and teachers (the most direct impact on education results). This dimension includes the sub-dimensions: Teaching and Learning, Teacher professional capacity, and Curriculum. Each sub-dimension could be measured by the AI tool based on the information collected during the Bootcamp and/or other elements.
2. **Engaging / Inclusive environment** for learners' and teachers' motivation by providing physical and emotional security. This element includes the sub-dimensions: Accessibility, Safety and well-being, Infrastructure, and resources. Each sub-dimension could be measured by the AI tool based on the information collected during the Bootcamp and/or other elements.
3. **Good leadership / governance:** effective processes to promote an inclusive environment, and support learners and teachers in the learning process. This dimension includes the sub-subdimension: Finance and administrative

efficiency, Management professional capacity, Support, and cooperation. Each sub-dimension could be measured by the AI tool based on the information collected during the Bootcamp and/or other elements.

4. **Relevance or compliance with goals and learners** according to the needs of society, competencies and skills needed to get involved in the job market and different society's opportunities for group inclusion. This dimension includes the sub-dimensions: Competence and achievements, Continuity of learning and employment, Equity, and inclusion. Each sub-dimension could be measured by the AI tool based on the information collected during the Bootcamp and/or other elements.

Table 1

The U-Society Qual-AI-ty Assessment Model: Compliance with Bootcamp Results

MODEL		Indicators prioritized in the Bootcamp	
1.	Teaching Quality/ training	Very important	Important
1.1	Teaching and Learning	<ul style="list-style-type: none"> • Internships / work-study placements in the region. 	<ul style="list-style-type: none"> • Activities in student living-learning communities/residence halls. • Community service-learning services.
1.2	Teacher professional capacity	<ul style="list-style-type: none"> • Opportunities for students to discuss social, political, or ethical issues across the curriculum and in co-curricular programming 	<ul style="list-style-type: none"> • Definition of concepts and skills in community work. • Students involved in local community events/activities.
1.3	Curriculum	<ul style="list-style-type: none"> • Students' involvement in co-curricular volunteering. • Students' participation in community-engaged courses. • Co-curricular activities for involvement in social innovation/entrepreneurship • Curricular (for-credit) research, leadership, internships, study abroad, and career exploration activities with social engagement. • Opportunities for students to discuss social, political, or ethical issues across the curriculum and in co-curricular programming. 	<ul style="list-style-type: none"> • Organized community services as co-curricular activities. • Defined learning outcomes for students' engagement with society at the institutional level. • Service-learning courses are integrated into the curriculum. • Co-curricular programs provide developmental pathways with increasingly complex forms of social engagement.
2.	Engaging /Inclusive environment:	Very important	Important
2.1	Accessibility	<ul style="list-style-type: none"> • Internships / work-study placements in the region. 	<ul style="list-style-type: none"> • Definition of departmental or disciplinary learning outcomes for students' engagement with society. • Alternative breaks (field trips). • Co-curricular programs provide developmental pathways with increasingly complex forms of social engagement.
2.2	Safety and well-being	<ul style="list-style-type: none"> • Informal recognition and reward of students' social engagement. 	<ul style="list-style-type: none"> • Recognition of the student-initiated advocacy campaigns. • Student awareness of social engagement. • Participation in athletics.
2.3	Infrastructure and resources		<ul style="list-style-type: none"> • Organized community services as co-curricular activities. • Venues for students and communities.

			<ul style="list-style-type: none"> • Activities in student living-learning communities/residence halls. • Tracking system for co-curricular social engagement. • Students' involvement in advisory services for the community.
3.	Good leadership / governance:	Very important	Important
3.1	Finance and administrative efficiency	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • Organized support for volunteer work.
3.2	Management professional capacity	<ul style="list-style-type: none"> • Encouragement of social engagement of students. 	<ul style="list-style-type: none"> • Incentives and rewards for social engagement • Leadership training for working with the community and social actors.
3.3	Support and cooperation	<ul style="list-style-type: none"> • Informal recognition and reward of students' social engagement • Opportunities for students to discuss social, political, or ethical issues across the curriculum and in co-curricular programming. 	<ul style="list-style-type: none"> • Organized community services as co-curricular activities • Incentives and rewards for social engagement. • Tracking and engagement of graduates working in the region • Encouragement and measurement of students' participation in democratic life. • Co-curricular programs provide developmental pathways with increasingly complex forms of social engagement.
4.	Relevance or compliance with goals	Very important	Important
4.1	Competence and achievements	<ul style="list-style-type: none"> • Formal recognition and reward of students' social engagement. • Informal recognition and reward of students' social engagement. 	<ul style="list-style-type: none"> • Incentives and rewards for social engagement. • Student leadership activities in social engagement. • Student awareness of social engagement.
4.2	Continuity of learning and employment	<ul style="list-style-type: none"> • Curricular (for-credit) research, leadership, internships, study abroad, and career exploration activities with social engagement. • Internships / work-study placements in the region. 	<ul style="list-style-type: none"> • Students involved in local community events/activities. • Recognition of the student-initiated advocacy campaigns. • Service-learning courses are integrated into the curriculum.
4.3	Equity and inclusion	<ul style="list-style-type: none"> • Opportunities for students to discuss social, political, or ethical issues across the curriculum and in co-curricular programming. 	<ul style="list-style-type: none"> • Tracking and engagement of graduates working in the region. • Defined learning outcomes for students' engagement with society at the institutional level. • Student participation in institutional life.

4. EXPLANATION OF THE DIMENSIONS OF THE MODEL

4.1 Teaching quality/ training

Education International (EI) a Belgium-based organization, defines quality education as one that focuses on the social, emotional, mental, physical, and cognitive development of each student regardless of gender, race, ethnicity, socioeconomic status, or geographic location (Robinson, 2013).

Meanwhile, quality higher education is not a singular product or outcome subject to one simple definition or numerical score. It has to do with a diverse range of activities and processes. The quality of the education and free inquiry that takes place within an institution cannot be easily or accurately parsed, quantified, ordered and compared (Robinson, 2013).

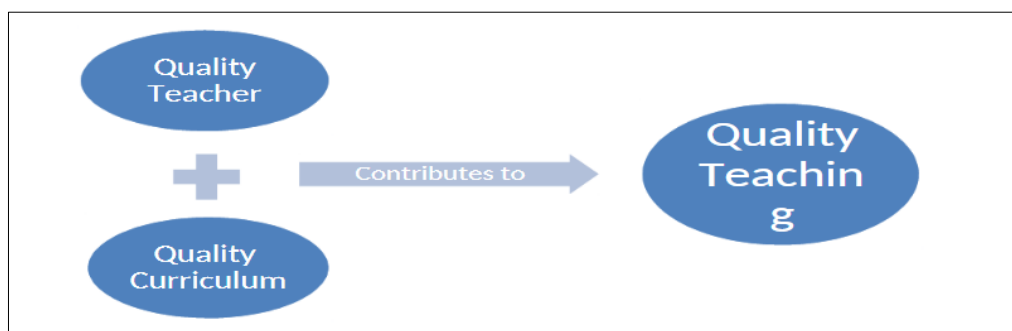
In 2012, the United Nations, for the first time, included 'Quality Education' in their Sustainable Development Goals (SDG). Further, education in modern times is highly influenced and dependent on Information and Communication Technology, which has paved the way for students to attain school or higher-level education.

According to the European Commission (EC), the European Union faces skills shortages in the STEM (science, technology, engineering, and mathematics) and ICT fields of study. Some social groups as women are underrepresented in these studies, therefore, new skills needs are emerging in the green and digital transitions of the European Union. The European Union needs to act if it is to ensure the continuous development of skills required to remain economically competitive at the global level (European Commission, 2020).

Furthermore, according to UNESCO (N.D), each student should obtain transversal skills, which are generally considered unrelated to a particular job, task, academic discipline, or field of knowledge and that can be used in a variety of situations and work settings (e.g. organizational skills).

Figure 3.

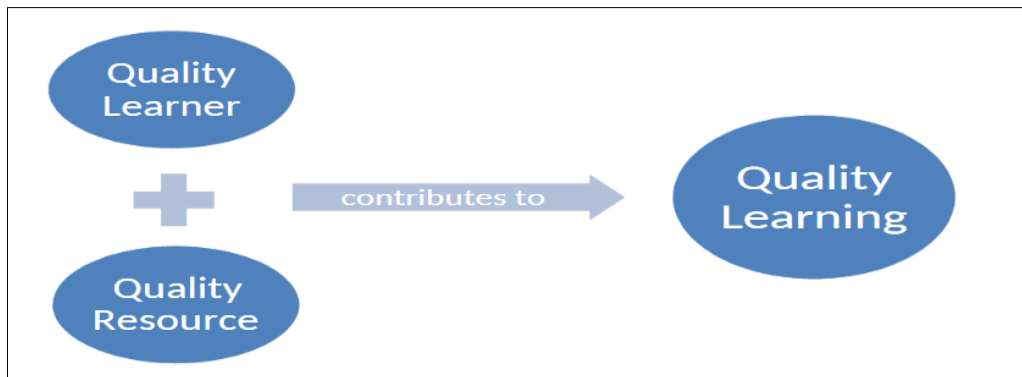
The first part of the TLS (Teaching Learning Support) Model of Quality Education



Note: figure 3 shows that teachers and curriculum are key components of the quality teaching process. Figure taken from Thinly, (2021), Elements of Quality Education.

Figure 4.

The second part of the TLS (Teaching Learning Support) Model of Quality Education



Note: figure 4 displays that quality learners and resources contribute to supporting quality learning. Figure taken from Thinly, (2021), Elements of Quality Education.

Teaching and learning: **Teaching is the process of attending to people's needs, experiences, and feelings, and making specific interventions to help them learn things** (Smith, 2018).

Learning is the relatively permanent change in a person's knowledge or behaviour due to experience. This definition has three components: 1) the duration of the change is long-term rather than short-term; 2) the locus of the change is the content and structure of knowledge in memory or the behaviour of the learner; 3) the cause of the change is the learner's experience in the environment rather than fatigue, motivation, drugs, physical condition or physiologic intervention (Mayer, 1982).

Teacher professional capacity:

The teaching force is changing, with a larger proportion of teachers with five or fewer years of experience and a high concentration of inexperienced teachers in high-poverty schools. Some educational reformers have viewed the "greening" of the teaching force as a positive development and focused on eased entry to quickly get new teachers into classrooms (Stosich, N.D.). The continuum of professional learning results in increased knowledge, skills, and application of leadership. Indicators of instructional leadership for teacher leaders include coaching and mentoring, collaboration, and understanding the context of school and community (Blase & Blase, 2000).

Higher education is tertiary education leading to the award of an academic degree. Higher education, also called post-secondary education, third-level, or tertiary

education, is an optional final stage of formal learning that occurs after the completion of secondary education. It represents levels 6, 7, and 8 of the 2011 version of the International Standard Classification of Education structure. Tertiary education at a non-degree level is sometimes referred to as further education or continuing education as distinct from higher education (2022, July 29).

Student engagement is in the side events and happenings taking place in local communities enriches students' ability to gain additional skills and knowledge required for professional and individual development.

Curriculum: A curriculum is a standards-based sequence of planned experiences where students practice and achieve proficiency in content and applied learning skills. The curriculum is the central guide for all educators as to what is essential for teaching and learning so that every student has access to rigorous academic experiences. The structure, organization, and considerations in a curriculum are created to enhance student learning and facilitate instruction. The curriculum must include the necessary goals, methods, materials, and assessments to effectively support instruction and learning (Rode Island Department of Education, N.D.).

4.2 Engaging environment

Accessibility: Accessibility is the practice of making information, activities, and/or environments sensible, meaningful, and usable for as many people as possible (SeeWriteHear, 2022). Accessible means a person with a disability is allowed to acquire the same information, engage in the same interactions, and enjoy the same services as a person without a disability in an equally effective and equally integrated manner, with substantially equivalent ease of use.

The person with a disability must be able to obtain the information as fully, equally, and independently as a person without a disability. Although this might not result in identical ease of use compared to that of persons without disabilities, it still must ensure equal opportunity for the educational benefits and opportunities afforded by the technology and equal treatment in the use of such technology (Case Western Reserve University N.D.).

Accessibility is the practice of making your websites usable by as many people as possible. We traditionally think of this as being about people with disabilities, but the practice of making sites accessible also benefits other groups such as those using mobile devices, or those with slow network connections (Mozilla Foundation, 2022, August 6).

Safety and well-being: Safety is the condition of being safe from undergoing or causing hurt, injury, or loss and a device (as on a weapon or a machine) designed to prevent inadvertent or hazardous operation (Merriam-Webster, N.D.).

Infrastructure and resources: Infrastructure is the set of fundamental facilities and systems that support the sustainable functionality of universities (Investopedia, 2022). In the business environment, resources are transformed into usable products or services. A country's resources, such as mineral wealth, infrastructure, labour force, and armed forces, are used for the well-being of the people, as well as for economic and political development. The concept of resources has been applied in various forms such as economics, commerce, environment, and human society.

Resources have three common features:

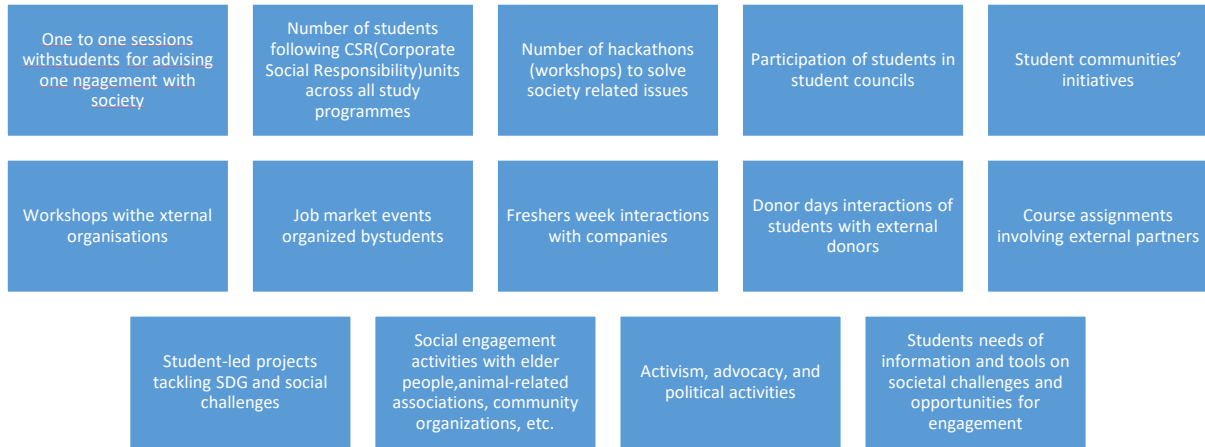
- **Utility:** Resources are used to satisfy the consumer.
- **Limited availability:** Resources are inadequately available against demand.
- **Potential for depletion:** Resources are gradually reduced as they are used (Safopedia, N.D.).

According to the Boot-camp organized with professionals of the Qual-AI-ty Engagement Project, eight indicators with high Importance and High Difficulty for Assessment were identified. Those indicators are:

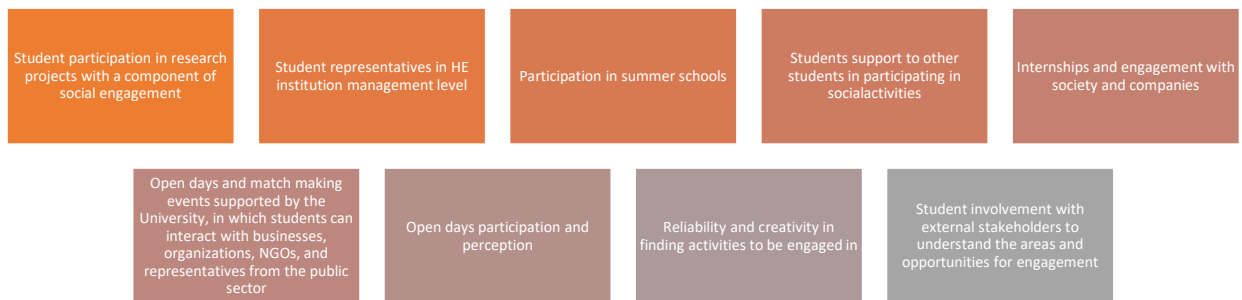
First group of indicators with a high level of importance and high difficulty for assessment:



Second group of indicators with medium level of importance and difficulty for assessment:



Third group of indicators with low Importance and low difficulty for assessment:



All groups of indicators were analysed, and the following indicators were synthesized to be chosen as one of the most important for the students to be analysed to foster students' engagement in societal life.



4.3 Leadership for engagement

Support and cooperation: The term academic support may refer to a wide variety of instructional methods, educational services, or school resources provided to students in the effort to help them accelerate their learning progress, catch up with their peers, meet learning standards, or generally succeed in school.

When the term is used in educational contexts without qualification, specific examples, or additional explanation, it may be difficult to determine precisely what “academic support” is referring to. The terms *support* or *supports* may also be used for any number of academic-support strategies. While the term *academic support* typically refers to the services provided to underperforming students, it may be used in reference to “enrichment” programs and more advanced learning opportunities provided to higher-achieving students (The Glossary of Education Reform, 2013).

In practice, academic support encompasses a broad array of educational strategies, including tutoring sessions, supplemental courses, summer learning experiences, after-school programs, teacher advisors, and volunteer mentors, as well as alternative ways of grouping, counselling, and instructing students. Academic support may be provided to individual students, specific student populations (such as non-English speakers or disabled students), or all students in a school. State and federal policies may require schools to provide academic support to certain student populations, such as identified special-education students, or schools may voluntarily create support programs to address specific performance results or trends, such as large numbers of dropouts, and course failures, behavioural problems, etc. While the term *academic support* typically refers to the services provided to underperforming students, it may be used for “enrichment” programs and more advanced learning opportunities provided to higher-achieving students (The Glossary of Education Reform, 2013).

Management professional capacity: Capacity management refers to the wide variety of planning actions used to ensure that a business infrastructure has adequate resources to maximize its potential activities and production output under any condition. Capacity management theory consists of the planning, IT monitoring, and administrative actions undertaken to ensure that information technology resources can handle data processing requirements across the entire service lifecycle (Heavy.AI., N.D.).

The professional capacity is the continuum of professional learning that results in increased knowledge, skills, and application of leadership (IGI Global, N.D.).

Organizational efficiency (including financial support): Efficiency in finance means performing tasks in a timely and cost-effective manner typically via simplified and standardized processes that leverage technology and consolidation/elimination of non-core activities through shared services/outsourcing. Finance efficiency refers to

the meeting of requirements (elimination of market distortions, competitive markets, accessible information, etc.) for the provision of the highest quality financial services at the lowest cost possible (IGI Global, N.D.).

Management efficiency is the output a management team creates relative to the direct capital and expenses they expend.

Managerial efficiency is the proportion of total organization resources that contribute to productivity during the manufacturing process. The higher this proportion, the more efficient the manager. The more resources wasted or used during the production process, the more efficient the manager is (Management Innovations. 2008, December 4).

Elements identified in this chapter are crosscutting aspects to have a higher engagement of students and increased performance during the studying process and beyond.

4.4 Relevance or compliance with goals

Learning according to the needs of society results: in certain competencies developed, the ability to get involved in the job market, raise social capital and use talents of each individual despite their identity and different societies' opportunities for group inclusion.

Equity and inclusion: According to the definitions, provided by Monroe Community College, diversity is more than a simple numerical representation of various groups in the organization. It is the active engagement of all viewpoints and individuals in the discussions and decisions that are made within the organization. All members of the community of higher education must feel valued and heard by the institution to achieve the goal of creating an inclusive learning environment (Monroe Community College, 2020).

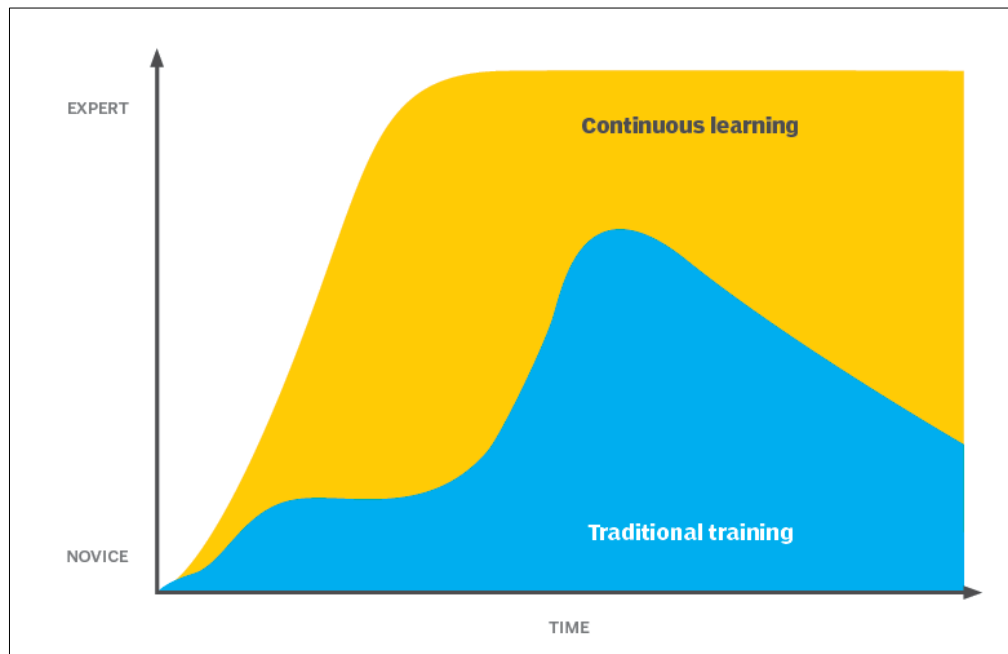
Equity includes the creation of opportunities and programs for historically underrepresented populations to have equal access and participation in educational programs that are intended to close the achievement gap in student success and completion. Equity programs are designed to assist underrepresented groups in achieving success in school and the workplace (Monroe Community College, 2020).

Diversity refers to ensuring that we welcome and embrace all individuals while valuing their differences, which are strongly interlinked to the identity of the person. Individual differences may include factors such as personality, learning styles, life experiences, race/ethnicity, class, gender, sexual orientation, country of origin, and ability, as well as cultural, political, religious, or other affiliations. Most of these elements also influence the ability and possibility to learn and also the accessibility to education and other social and political processes. The concepts of continuous learning or Lifelong learning and inclusion are important aspects also in the process of developing the U-Society Qual-AI-ty Assessment Model.

Continuous learning is the ongoing expansion of knowledge and skillsets. Participation of the students in activities in their community are ensuring the development of soft skills. Lifelong learning is often used in the context of professional development, continuous learning in the workplace is about developing new skills and knowledge, while also reinforcing what has been previously learned (Chai, 2020). Figure 2 illustrates continuous learning compared to traditional learning.

Figure 2.

The Continuous Learning Model



Note: continuous learning in a work environment helps to retain knowledge compared to traditional learning which knowledge depreciates over time due to the lack of reinforcement. Figure taken from Chai, (2020), Continuous learning.

Continuous learning is similar to adult education, at least in being intended for adult learners, especially those beyond traditional undergraduate college or university age (Wikipedia, 2022, July 7).

Competencies and achievements: Competencies identify the observable behaviours that successful performers demonstrate on the job. Those behaviours are the result of various abilities, skills, knowledge, motivations, and traits an employee may possess. The formula to easily understand competencies is:

Skills + Knowledge + Abilities = Competencies (Becket, 2018).

The U-Society Qual-AI-ty Assessment model is developed to evaluate the level of student engagement with society and ensure universities with the possibility to apply results for quality assurance purposes, taking into consideration both elements of equity and inclusion as well as learning and lifelong learning. In developing the model

to ensure improved student engagement in society, it is important to take into consideration Elton Mayo's contribution to management theory, which explains the thinking behind human beings' motivation to do something and to be committed to personal or organizational achievement (Ward, 2021, August 29).

Mayo's findings helped pave the way for modern human relations management methods. Based on his well-known Hawthorne experiments, Mayo's management theories grew from his observations of employee productivity levels under varying environmental conditions. His experiments drew several conclusions about the real source of employee motivation, laying the groundwork for later approaches to team building and group dynamics.

Mayo's management theory states that employees are motivated far more by relational factors such as attention and camaraderie than by monetary rewards or environmental factors such as lighting, humidity, and other factors of the environment (Ward, 2021, August 29).

Taking into consideration the above-mentioned, it is important to highlight, that development of the U-Society Qual-AI-ty Assessment model, there is a will to increase the development of students' social capital and talent development during their studies in higher education institutions.

5. THE -SOCIETY QUAL-AI-TY ASSESSMENT MODEL IN USE

The model consists of four dimensions to assess, each one with three sub-dimensions: Teaching Quality and training (15 questions in the first level); Engaging and Inclusive Environment (15 questions in the first level), Good leadership and governance (8 questions in the first level) and Relevance or compliance with goals (8 questions in the first level).

The model was built to have two or more levels of questions to assess the student's engagement with society. If in the first level, if the answer is negative, the interview does not continue to the next level. In case more than half of the answers in the first level are negative, this is a signal of low student engagement, lack of knowledge of respondents, poor language skills or a mistake within a process.

If in the first level the answer is positive, the interview continues to the next level. A quantitative analysis of answers will be provided in tables as "questions for chatbot" and in a data analysis tool (will be developed after testing the pilot).

The questions in the interview guide are organized in three sets depending on the number of questions to be solved. Fulfilling one of the sets will allow for building in-depth or superficial analysis:

- **Minimum set:** about 10 minutes,
- **Optimum set:** intermediate number of answers, between 20 to 45 minutes,
- **Maximum set:** about 2 hours, complete answers to all the questions.

Universities/interviewers will be able to adjust/modify/include/exclude questions according to their needs. In the model there is the possibility for students not to answer the full model (all dimensions), there is also the possibility to reduce the speed, stop the interview, and return to it at any time of the interviewee's convenience.

For universities/interviewers, the AI tool will allow repeating measurements for longitudinal analysis, which means it will provide the option to repeat an interview with some time sequence. For example, once in 12 or 24 months. In other words, there must be the possibility to interview a student in the first year and then the same questions should be asked in the period of interest.

For the registration of students, it is recommended to collect identification information. To compare results and analyse the progress, a student ID number could be used (this depends on university internal regulations and the application of the GDPR). Also, other important information could be considered such as name, surname (not compulsory if there is an ID), gender, age, study year, and study area. For an easier collection of information, the field of study could be an important variable, such as humanities, social sciences, natural sciences, engineering, medicine, etc.

The quantitative side of the model is described in detail in the user manual of the AI tool.

5.1 Questions for the interview assistant: maximum set

The Maximum Set could last from 60 to 120 minutes. In the first level, Yes/No answers could be included, as well as “I don’t know”, with a meaning “no”. If the majority of answers in the first level are “I do not know”, it leads the interviewer to the logical conclusion about communication problems with students or lack of this activity/item in the university.

For the institutions, the AI tool could be used also for educational or promotional purposes by adding the possibility to redirect student to their website. For example: after answering “I don’t know” on the question “Do you have a carrier centre in a university?” there could be an embedded link to the specific website.

Table 2

Questions for the Interview Assistant: Maximum Set

No	Area / Dimension	First Level	Answer	Second Level	Answer
1	Teaching Quality / training:				
1.1	Study process and Learning	Does your institution provide any opportunity to create a part of your study plan yourself?	Y/N	If Y: Have you taken the opportunity to do this (yes/no) •do you do it? If yes - How often •If no – Would you like to take such opportunity? If N: Would you like to have that opportunity?	Once per semester r/ year
		Do you have to organize your own learning process (are there elements of self-directed learning?)	Y/N	If yes - Does this apply to every course? Y/N && If Y: How much/often do you have to involve yourself in the learning process? If N: would you like to be involved? Y/N	Never – Rarely – Sometimes – Always – Often
		Do you have internships / work-study placements in the region as part of the Curriculum?	Y/N	If Y: How many credit points do you receive for weeks/ hours? If N: should you have these? Why?	4/10/20
		Does your institution provide the opportunity to participate in Co-curricular activities	Y/N	If Y: How does it happen? Provide examples. If N: Would you like this? Why?	Keywords (post processing)

		for involvement in social innovation / entrepreneurship?			
		Does your university have any tracking system for co-curricular social engagement?	Y/N	If Y: do you use it? Do you know how to use it? Do you gain info from using it? If N: should they have one? • If Y: Why do you think so? If IDK: if it exists, then suggest the links. If not, then ask the questions from N.	
1.2	Teaching and teacher professional capacity	Do you have the possibility to evaluate teachers?	Y/N	If Y: How often? & If Y: Do you find it useful / impactful? (Y/N) • If Y: Why?	Times per semester / year
		Are teachers / professors involved in local community events / activities?	Y/N	If Y: How often? Provide examples. If N: Should they be involved? Why?	
		Are teachers / professors involving students in local community events / activities?	Y/N	If Y: How often? Provide examples. If N: Should teachers involve students? Why? If IDK: Would you like to be involved by your teachers?	
1.3	Curriculum	Does your institution provide the possibility to improve your study program?	Y/N	If Y: How often? How does it happen? Provide examples. If N: Would you like to have such a possibility? Why?	Questionnaire, discussion, written
		1. Are students involved in co-curricular volunteering? 2. Do you have the possibility to participate in community-engaged courses?	Y/N	If Y: How often? Provide examples. If N: Should they? Why?	
		Do you have the possibility to take studies abroad?	Y/N	If Y: How often? How many ECTS? If N: Why not?	1/2/3 times / semesters per year 30/60/90
		Do you have curricular (for-credit) research and leadership training with social engagement?	Y/N	If Y: Provide examples. how many credits? how often? If N: should you have? Why?	
		Do you know your study program (curriculum) learning outcomes?	Y/N	If Y: How many? Can you provide examples of some of them?	

				if N: suggest a link to the study program LO	
		Do you have any co-curricular activities which provide developmental pathways with increasingly complex forms of social engagement?	Y/N	If Y: How often? Provide examples. If N: should you have? Why?	
2	Engaging / Inclusive environment:				
2.1	Accessibility	Does your institution have any student support and psychological support services?	Y/N	If Y: How easy is to access institutional support services? If N: Should they have? Why? If IDK: suggest link	Easy / average / difficult
		Does your institution have a career centre?	Y/N	If Y: do you make use of it? Do you get info about the career centre? If N: should there be one? Why? If IDK: suggest link	
		Are there internships / work-study placements provided by your institution?	Y/N	If Y: did you get any info about this? & if Y: did you get any internships from your institution? If N: should there be? Why	
		Have you been in an internship?	Y/N	If Y: How responsive was the company / organization? If N: would you like to? Why?	Very / medium / not responsive
		Is the knowledge / competence you gained at your institution useful in practice?	Y/N	Evaluate on a scale from 1 to 10 (10 – excellent)	1-10
		Have you had company visits during the study process?	Y/N	If Y: How many? If N: should there be some? Why?	1/10/20
2.2	Safety and well-being	Does your institution have recognition of the student-initiated advocacy campaigns?	Y/N	If Y: Do students have awareness of social engagement? Provide any examples If N/IDK: Should it? Why?	
		Does your institution provide any sports activities / facilities?	Y/N	If Y: Do you participate in athletics? How many hours per week? Are they free of charge for students? If N: should it? Why?	1/3/10

2.3	Infrastructure and resources	1. Does your institution have venues for students and communities? 2. Does your institution support student communities and organizations?	Y/N	At what level do these venues support / help your engaging activities? How often do you use them?	
		Do you have activities in student living-learning communities / residence halls?	Y/N	If Y: How often do you participate in such activities? Give examples. If N: Why not?	
		Does your institution have students involved in advisory services for the community?	Y/N	If Y: How often do you participate in such activities? Give examples. If N: Should this happen? Why? What are the benefits?	
		Does the institution offer any green campus / sustainability activities? / Do you consider your campus as green / sustainable?	Y/N	If Y: Are you also involved in these activities? How often? Provide examples. If N: should there be such activities? Why?	
3	Good leadership / governance:				
3.1	Organizational efficiency (including financial support)	Does your institution provide organized support for volunteer work?	Y/N	If Y: Provide examples. If N: Should they be? Why?	
		Do you have any financial support / scholarships?	Y/N	How easy was it to apply for support / scholarship?	
		Have you applied for support / scholarship?	Y/N	If N/IDK: suggest links	
		Does your institution have efficient internal organizational procedures?	Y/N	If Y: Provide examples. If N: Why?	
3.2	Management professional capacity	Does your institution encourage students to participate in social engagement activities?	Y/N	If Y: Provide examples. If N: should it be? Why? If IDK: suggest link	
		Do you have any leadership training for working with the community and social actors?	Y/N	If Y: Did you take some training? Provide examples. If N: Should there be? Why? If IDK: suggest link	

3.3	Support and cooperation	Does your institution offer any incentives and rewards for engaging with society?	Y/N	If Y: What are they? Provide examples If N/IDK: should there be? Why?	
		Does your institution have a measurement system for students' participation in democratic life?	Y/N	If Y: Provide examples If N/IDK: should they have it? Why?	
4 Relevance or compliance with goals:					
4.1	Competences , achievements and recognition	Does your institution provide any formal recognition and rewards for students' social engagement?	Y/N	If Y: Provide examples. If N: Should it be? What kind?	
		Does your institution provide any informal recognition and rewards for students' social engagement?	Y/N	If Y: Provide examples. If N: Should they? What kind?	
4.2	Continuity of learning and employment	Does your institution have any tracking and engagement system for graduates working in the region?	Y/N	If Y: Did you get information about it? If N: Should they have? Why? If IDK: suggest link	
		Does your institution provide career exploration activities with social engagement?	Y/N	If Y: What kind? If N/IDK: Should there be such activities? What kind?	
		Does your institution encourage and involve students in any local community events / activities?	Y/N	If Y: Do you take part in them? Provide examples If N: should they? What kind? If IDK: suggest links	
4.3	Equity and inclusion	Does your institution provide any opportunities to discuss social, political, or ethical issues across the curriculum and in co-curricular programming?	Y/N	If Y: How often? Provide examples. If N: should there be such discussions? Why?	
		Does student well-being is a priority for your institution?	Y/N	If Y: Any examples? If N: should there be? Why?	

		Are you involved in institutional life?	Y/N	If Y: How often? Provide examples. If N: Why not? Would you like to be? Why	
--	--	---	-----	--	--

5.2 Questions for the interview assistant: minimum set

The Minimum Set consists of questions that users can answer in 10 to 15 minutes. This approach gives the opportunity to receive responses from those who start to get acquainted with the tool.

Table 3

Questions for the Interview Assistant: Minimum Set

No	Area / Dimension	First Level	Answer	Second Level	Answer
1. Teaching Quality / training:					
1.1	Study process and Learning	Does your institution provide any opportunity to create a part of your study plan yourself?	Y/N	If Y: Have you taken the opportunity to do this (yes/no) • If yes - How often do you do it? • If no – Would you like to take such an opportunity? If N: Would you like to have that opportunity?	Once per semester / year
		Does your institution offer any internships / work-study placements in the region included in the curriculum?	Y/N	If Y: How many credit points do you receive per / weeks/ hours? If N: should you have these? Why?	4/10/20
		Comments: in some countries, internships are not included in the study programs. Then this question could be replaced with company visits.			
1.2	Teaching and teacher professional capacity	Does your institution provide any possibility to evaluate teachers / professors?	Y/N	If Y: How often? & If Y: Do you find it useful / impactful? (Y/N) • If Y: Why?	Times per semester/year
		Comments:			
1.3	Curriculum	Does your institution offer any possibility to improve your study program?	Y/N	IF Y: How often? How does it happen? Provide examples. If N: Would you like to have such possibility? Why	Questionnaire, discussion, written
		Does your institution offer you the possibility to have studies abroad?	Y/N	If Y: How often? How many ECTS? If N: Why not?	
		Comments:			

2	Engaging / Inclusive environment:				
2.1	Accessibility	Does your institution have any student support and psychological support services?	Y/N	If Y: How easy is to access university support services? If N: Should they have? Why? If IDK: suggest link	Easy / average / difficult
		Does the institution have a career centre?	Y/N	If Y: do you make use of it? Do you get information about the career centre? If N: should there be one? Why? If IDK: suggest link	
		Have you had company visits during the study process?	Y/N	If Y: How many? If N: should there be some? Why?	1/10/20
		Comments: See comment at 1.1			
2.2	Safety and well-being	Does your institution provide any sports activities / facilities?	Y/N	If Y: Do you participate in athletics? How many hours per week? Are they free of charge for students? If N: should it? Why?	1/3/10
		Comments: this section could also include questions about data protection, knowledge about internet security etc.			
2.3	Infrastructure and resources	1. Does your institution have venues for students and communities?	Y/N	At what level these venues support/help your engaging activities?	
		2. Does your institution support student communities and organizations?		How often do you use them?	
		Comments: venues for students and communities: coworking spaces, workshop areas, incubators, etc.			
3	Good leadership / governance:				
3.1	Organizational efficiency (including financial support)	Does your institution offer any financial support / scholarships?	Y/N	How easy was it to apply for support/scholarship? If N/IDK: suggest links	
		Have you applied for support/scholarship?	Y/N		
		Comments: Besides scholarships could be grants, projects etc.			
3.2	Management professional capacity	Does your institution encourage social engagement for students?	Y/N	If Y: Provide examples. If N: should it be? Why? If IDK: suggest link	
		Comments: Social engagement: donor days, voluntary work, political activities, etc.			
3.3	Support and cooperation	Does your institution provide incentives and rewards to students for participation in social engagement?	Y/N	If Y: What are they? Provide examples If N/IDK: should there be? Why?	

		Comments:			
4.	Relevance or compliance with goals:				
4.1	Competence and achievements and recognition	Does your institution offer any formal recognition and reward for students' social engagement?	Y/N	If Y: Provide examples. If N: Should it be? What kind?	
		Comments: formal recognition: giving credits for some activities, recognizing the internship fully or partly.			
4.2	Continuity of learning and employment	Does the institution have any tracking and engagement system for graduates working in the region?	Y/N	If Y: Did you get information about it? If N: Should they have? Why? If IDK: suggest link	
		Comments: Alumni organizations or other instruments to keep cooperation with students.			
4.3	Equity and inclusion	Does the institution offer any opportunities to discuss social, political, or ethical issues across the curriculum and in co-curricular programming?	Y/N	If Y: How often? Provide examples. If N: should there be such discussions? Why?	
		Comments: with other students, with professors, with civil society organizations and other stakeholders.			

5.3 Questions for the interview assistant: optimum set

The Optimums Set consists of questions the users can answer in 10 to 15 minutes, providing most of the valuable information related to student social engagement. This information can be analysed by the administration of the university to create additional programmes and organize specific activities for student engagement.

Table 4

Questions for the Interview Assistant: Optimum Set

No	Area / Dimension	First Level	Answer	Second Level	Answer
1	Teaching Quality / training:				
1.1	Study process and Learning	Does your institution provide the opportunity to create a part of your study plan yourself?	Y/N	If Y: Have you taken the opportunity to do this (yes/no) • If yes - How often do you do it? • If no – Would you like to take such an opportunity? If N: Would you like to have that opportunity?	Once per semester / year
		Do you have to organize your own learning process (are	Y/N	If yes - Do this apply to every course? Y/N &&	Never – Rarely – Sometimes –

		there elements of self-directed learning?)		If Y: How much / often do you have to involve yourself in the learning process? If N: would you like to be involved? Y/N	Always – Often
		Does your institution offer any internships / work-study placements in the region included in the curriculum?	Y/N	If Y: How many credit points do you receive per weeks / hours? If N: should you have these? Why?	4/10/20
		Comments: in some countries, internships are not included in study programs. Then this question could be replaced with company visits.			
1.2	Teaching and teacher professional capacity	Does your institution offer the possibility to evaluate teachers / professors?	Y/N	If Y: How often? & If Y: Do you find it useful/impactful? (Y/N) • If Y: Why?	Times per semester / year
		Are teachers / professors involved in local community events / activities?	Y/N	If Y: How often? Provide examples. if N: Should they be involved? Why?	
		Comments:			
1.3	Curriculum	Do you have the possibility to improve your study program?	Y/N	IF Y: How often? How does it happen? Provide examples. If N: Would you like to have such a possibility? Why	Questionnaire, discussion, written
		Does your institution offer opportunities for studying abroad?	Y/N	If Y: How often? How many ECTS? If N: Why not?	1/2/3 times / semesters per year 30/60/90
		Does your institution provide any curricular (for-credit) research and leadership training for social engagement?	Y/N	If Y: Provide examples, how many credits, how often If N: should you have? Why?	
		Does your institution offer any co-curricular activities which provide developmental pathways with increasingly complex forms of social engagement?	Y/N	If Y: How often? Provide examples. If N: should you have? Why?	
		Comments:			
2.	Engaging / Inclusive environment:				
2.1	Accessibility	Does your institution have any student support and psychological support services?	Y/N	If Y: How easy is it to access university support services? If N: Should they have? Why? If IDK: suggest link	Easy / average / difficult

		Does the university have a career center?	Y/N	If Y: do you make use of it? Do you get info about the career center? If N: should there be one? Why? If IDK: suggest link	
		Are there internships/work-study placements provided by your university?	Y/N	If Y: did you get any info about this? && if Y: did you get any internships from your university? If N: should there be? Why	
		Have you had company visits during the study process?	Y/N	If Y: How many? If N: should there be some? Why?	1/10/20
		Comments: See comment at 1.1.			
2.2	Safety and well-being	Does your university provide any sports activities/facilities?	Y/N	If Y: Do you participate in athletics? How many hours per week? Are they free of charge for students? If N: should it? Why?	1/3/10
		Comments: it could also be questions about data protection, knowledge about internet security etc.			
2.3	Infrastructure and resources	1. Does your university have venues for students and communities?	Y/N	In what level these venues support/help your engaging activities?	
		2. Does your university support student communities and organizations?		How often do you use them?	
		Do you have any green campus/sustainability activities? / Do you consider your campus as green / sustainable?	Y/N	If Y: Are you also involved in these activities? How often? Provide examples. If N: should there be such activities? Why?	
		Comments: venues for students and communities – coworking spaces, workshop areas, incubators?			
3	Good leadership/governance:				
3.1	Organizational efficiency (including financial support)	Do you have organized support for volunteer work?	Y/N	If Y: Provide examples. If N: Should they be? Why?	
		Do you have any financial support/scholarships?	Y/N	How easy was it to apply for support/scholarship?	
		Have you applied for support/scholarship?	Y/N	If N/IDK: suggest links	
		Comments: Besides scholarships could be grants, projects etc.			

3.2	Management professional capacity	Does your institution encourage social engagement for the students?	Y/N	If Y: Provide examples. If N: should it be? Why? If IDK: suggest link	
		Do you have any leadership training for working with the community and social actors?	Y/N	If Y: Did you take some training? Provide examples. If N: Should there be? Why? If IDK: suggest link	
3.3	Support and cooperation	Does your institution have a measurement system of students' participation in democratic life?	Y/N	If Y: Provide examples If N/IDK: should they have it? Why?	
Comments:					
4	Relevance or compliance with goals:				
4.1	Competence and achievements and recognition	Does your institution offer any formal recognition and reward for students' social engagement?	Y/N	If Y: Provide examples. If N: Should it be? What kind?	
		Does your institution offer any informal recognition and reward for students' social engagement?	Y/N	If Y: Provide examples. If N: Should they? What kind?	
4.2	Continuity of learning and employment	Does your institution have any tracking and engagement system for graduates working in the region?	Y/N	If Y: Did you get information about it? If N: Should they have? Why? If IDK: suggest link	
		Does your institution offer career exploration activities with social engagement?	Y/N	If Y: What kind? If N/IDK: Should there be such activities? What kind?	
Comments:					
4.3	Equity and inclusion	Do you have any opportunities to discuss social, political, or ethical issues across the curriculum and in co-curricular programming?	Y/N	If Y: How often? Provide examples. If N: should there be such discussions? Why?	
		Does student well-being is a priority for institution?	Y/N	If Y: Examples? Education, social equity If N: should there be? Why?	
Comments:					

6. REFERENCES

- Backett, S. (2018). What's the Difference Between Skills and Competencies? Human Resource Systems Group-HRSG. <https://resources.hrsg.ca/blog/what-s-the-difference-between-skills-and-competencies#competencies>
- Blase, J. and Blase, J. (2000). Effective instructional leadership: Teachers' perspectives on how principals promote teaching and learning in schools, *Journal of Educational Administration*, 38, (2), pp. 130-141. <https://doi.org/10.1108/09578230010320082>
- Case Western Reserve University. (N.D.). Digital Accessibility: What is Accessibility? <https://Case.Edu/Accessibility/What-Accessibility>
- Chai, W. (2020). Continuous learning. TechTarget. <https://www.techtarget.com/whatis/definition/continuous-learning>
- European Commission-EC (2020). Relevant and high-quality higher education. European Education Area. <https://education.ec.europa.eu/education-levels/higher-education/relevant-and-high-quality-higher-education>
- Heavy.AI. (N.D.). Capacity Management Definition. Capacity management. <https://www.heavy.ai/technical-glossary/capacity-management>
- IGI Global. (N.D.). What is Financial Efficiency? <https://www.igi-global.com/dictionary/how-to-measure-the-level-of-financial-development/47257>
- IGI Global. (N.D.). What is Professional Capacity? <https://www.igi-global.com/dictionary/instructional-leadership/98407>
- Investopedia. (2022, July 14). Infrastructure: Definition, Meaning, and Examples. Government Spending & Debt. <https://www.investopedia.com/terms/i/infrastructure.asp>
- Malamed, C. (N.D.). 10 definitions of learning. The Learning Coach. <https://Theelearningcoach.Com/Learning/10-Definitions-Learning/>
- Management Innovations. (2008, December 4). Managerial effectiveness & efficiency. <https://managementinnovations.wordpress.com/2008/12/04/managerial-effectiveness-efficiency/>
- Mayer, R. (1982). *Encyclopedia of Educational Research*. The Free Press.
- Merriam-Webster. (N.D.). Safety. <https://www.merriam-webster.com/dictionary/safety>
- Monroe Community College. (2020). Diversity, equity, inclusion: Defined. <https://www.monroecc.edu/diversity/resources/definitions/>

- Mozilla Foundation. (N.D.). What is accessibility? https://developer.mozilla.org/en-US/docs/Learn/Accessibility/What_is_accessibility
- Robinson, D. (2013). The Mismeasure of Higher Education. International Education. <https://www.ei-ie.org/en/item/21050:the-mismeasure-of-higher-education>
- Rode Island Department of Education-RIDE. (N.D.). Curriculum Definition. <https://www.ride.ri.gov/InstructionAssessment/Curriculum/CurriculumDefinition.aspx>
- Safopedia. (N.D.) Resource. <https://www.safeopedia.com/definition/2945/resource>
- SeeWriteHear. (2022). What is Accessibility? <https://www.seewritehear.com/learn/what-is-accessibility/>
- Smith, M. K. (2018). 'What is teaching?' in The encyclopaedia of pedagogy and informal education. <https://infed.org/mobi/what-is-teaching/>
- Stosich, E. (N.D.). 3 Top-Down Approaches to Improving Teacher Capacity. Stanford Center for Opportunity Policy in Education. <https://edpolicy.stanford.edu/library/blog/1370>
- The Glossary of Education Reform. (2013). Academic support. <https://www.edglossary.org/academic-support/>
- Thinley, J. (2021). Elements of Quality Education. Conference: English for Academic Presentation, UNE. https://www.researchgate.net/publication/355167115_Elements_of_Quality_Education
- UNESCO. (N.D.). Transversal skills. TVETipedia Glossary. <https://unevoc.unesco.org/home/TVETipedia+Glossary/filt=all/id=577>
- Ward, P. (2021, August 29). *Elton Mayo's management Theories*. NanoGlobals. <https://nanoglobals.com/glossary/elton-mayo-management-theories/>
- Wikipedia. (2022, July 7). Continuing Education. https://en.wikipedia.org/wiki/Continuing_education
- Wikipedia. (N.D.). Higher education. https://En.Wikipedia.Org/Wiki/Higher_education

Project Partner:



**UNIVERSITY
OF TWENTE.**



MCAST



**Funded by
the European Union**

Project Number: 2020-1-LV01-KA203-077578

The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflect the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.