



Mapping SDG Contributions



SDG focus

- ☒ Goal 4 - Quality education
- ☒ Goal 17 - Partnerships for the goals

What did you do?

The IUS SDG Executive Committee initiative integrates sustainability into learning and teaching by mapping how academic staff and programs contribute to the Sustainable Development Goals (SDGs). This process provided a clear overview of which courses and individuals align with each goal, allowing for more focused planning and curriculum updates. It also encouraged academic staff to reflect on their own contributions, raising awareness across the university. The mapping has become part of the university's regular operations, ensuring that the data continues to grow and improve over time. It has also supported student engagement through sustainability-related coursework and projects.

Mapping SDG Contributions at the International University of Sarajevo (IUS)

Workflow of keyword-based and text similarity-based models for detecting SDG relevance in university learning outcomes (Tašaković & Büyükdağlı, 2024).

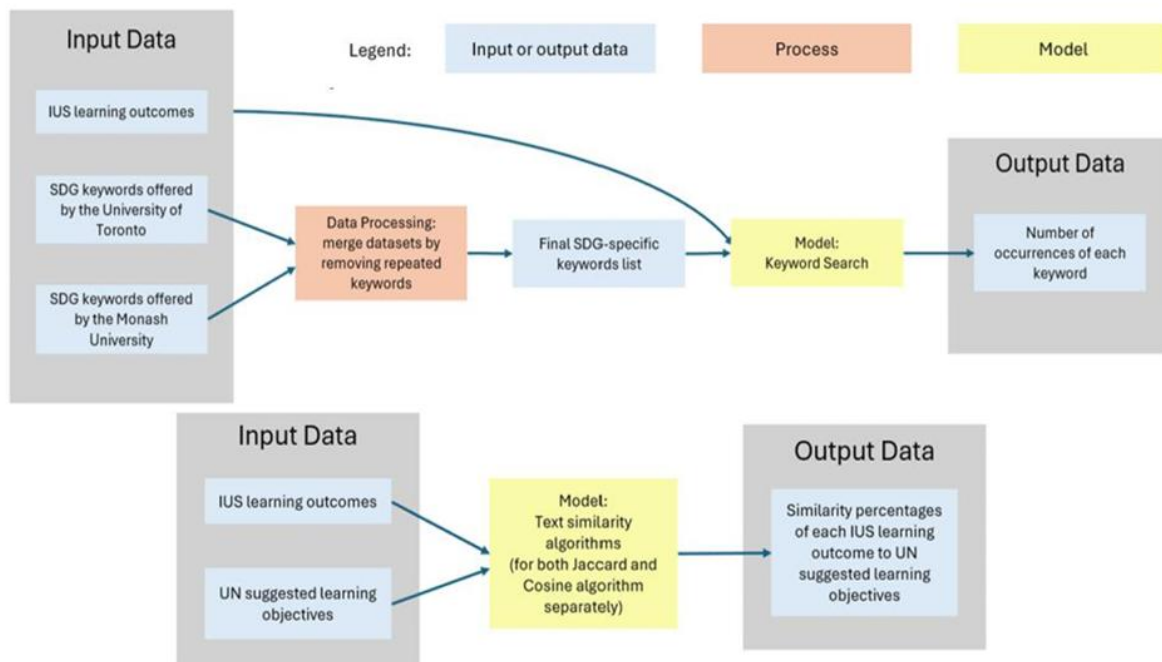


Image: Workflow of keyword-based and text similarity-based models for detecting SDG relevance in university learning outcomes. This work laid the groundwork for semi-automated curriculum mapping and offered a valuable methodological contribution to SDG evaluation practices in higher education while also demonstrating how academic programs can actively support institutional transformation. In addition to algorithmic tools for curriculum mapping, we also explored the potential of AI language models to support SDG classification of academic publications. Specifically, we experimented with using tools like ChatGPT to analyse abstracts and summaries of faculty publications and suggest which SDGs the work may relate to. While this method is not intended to replace expert evaluation, it serves as a pre-screening tool that can provide preliminary insights and reduce the manual workload for those conducting traditional desktop assessments.

What were the benefits and outcomes?

1. The SDG mapping process allowed IUS to collect detailed, faculty-wide data on academic contributions to sustainability. It became part of annual reporting, ensuring that the initiative is now sustainable and embedded in regular operations.
2. The exercise prompted academic staff to reflect on their teaching and research in relation to the SDGs. This self-assessment increased overall awareness and helped staff recognize their role in advancing sustainable development.
3. The initiative created an environment that encouraged meaningful conversations between departments, helping to align efforts and support more effective planning around shared

sustainability goals. It laid the groundwork for long-term improvements in teaching, research, and community engagement.

What barriers or challenges did you encounter in embedding sustainability into your learning and teaching practice and how did you overcome them?

1. Initial top-down structure and limited engagement:

At first, sustainability activities were mostly led by a few SDG Executive Committee members, with limited involvement from wider academic staff. This made the efforts less impactful and harder to sustain.

Solution: The SDG mapping process required every academic staff member to reflect on and report their SDG contributions. This broadened participation and helped integrate sustainability into everyday academic practice.

2. Lack of clear visibility of existing contributions:

Many staff members were unsure whether their teaching or research related to sustainability.

Solution: The mapping exercise provided a structured, visual summary of which programs and individuals addressed each SDG, increasing clarity and recognition across the university.

3. Sustainability seen as an add-on, not a core element

Without a formal process, sustainability was often treated as optional or secondary in course planning.

Solution: By embedding SDG reporting into annual academic procedures, sustainability became a standard, expected part of institutional planning and course development.

What are your conclusions and recommendations for others?

- Embedding sustainability reporting into existing institutional systems, rather than creating separate reporting mechanisms, significantly improves participation and data quality.
- Combining automated tools with human validation balances efficiency and accuracy in mapping SDG contributions.
- Raising awareness and prompting self-reflection among academic staff helps build ownership and embed sustainability into institutional culture.
- Using AI and data-driven methods can support but not fully replace human engagement and expert evaluation.

Web link to further information:

[LINK](#)

Supporting Information: Mapping SDG Contributions at the International University of Sarajevo (IUS)

In the past few years, IUS has initiated a systematic effort to identify how existing educational practices, research, and community activities align with the Sustainable Development Goals (SDGs). This recognition step served as a crucial starting point for a deeper institutional commitment to embedding sustainability in learning and teaching.

While universities often contribute to sustainable development through education, research, and outreach, these contributions are not always explicitly recognised or communicated. At IUS, we realised that before introducing new initiatives, it was essential to understand and acknowledge what was already being done by teaching staff and students across faculties.

Since 2018, sustainability-related efforts at IUS were primarily carried out through a traditional **desktop study** approach. In this method, a designated staff member manually reviewed activities, events, and academic outputs to estimate their potential alignment with one or more of the SDGs. While this method enabled the university to maintain annual records and show early commitment to sustainability, it relied heavily on a single individual and became increasingly unsustainable as the university grew. Moreover, the approach was largely top-down and offered limited opportunities for active engagement from academic staff and students.

Another commonly recognized approach is **self-assessment**, where academic and administrative staff are asked to report their own SDG-related contributions. At IUS, we attempted this method as well by regularly sending reminder emails and open calls for staff to submit their activities. However, response rates remained low, and the data collected was often incomplete or inconsistent. This reinforced the need to find alternative strategies that were more embedded in existing routines.

Recognising the limitations and inefficiencies of this method, especially the challenges of low response rates and human bias, the SDG Executive Committee also began exploring more automated and scalable alternatives. One of the first approaches applied was **keyword-based search**, where key terms associated with each SDG that were drawn from the SDG literature, were used to scan course syllabi, project descriptions, and research abstracts. Although this approach yielded some initial results, it suffered from low accuracy and was not robust enough to guide strategic decision-making.

To improve accuracy, additional efforts were undertaken in collaboration with the Software Engineering program at IUS. A master's student developed a two-stage model for detecting SDG contributions in course learning outcomes¹. The first stage used keyword search based on international SDG keyword lists, while the second applied text similarity algorithms

¹ Tašaković, L., & Büyükdaglı, Ö. (2024). Impact assessment methods for teaching activities on sustainable development goals in higher education institutions: A case study from a Bosnian university. *Heritage and Sustainable Development*, 6(2), 445-458.

(Jaccard and Cosine) to compare IUS learning outcomes with UN-recommended SDG objectives². The diagram given in Figure 1, published in the same study, illustrates the data sources, processing steps, and outputs of both approaches.

This work laid the groundwork for semi-automated curriculum mapping and offered a valuable methodological contribution to SDG evaluation practices in higher education while also demonstrating how academic programs can actively support institutional transformation.

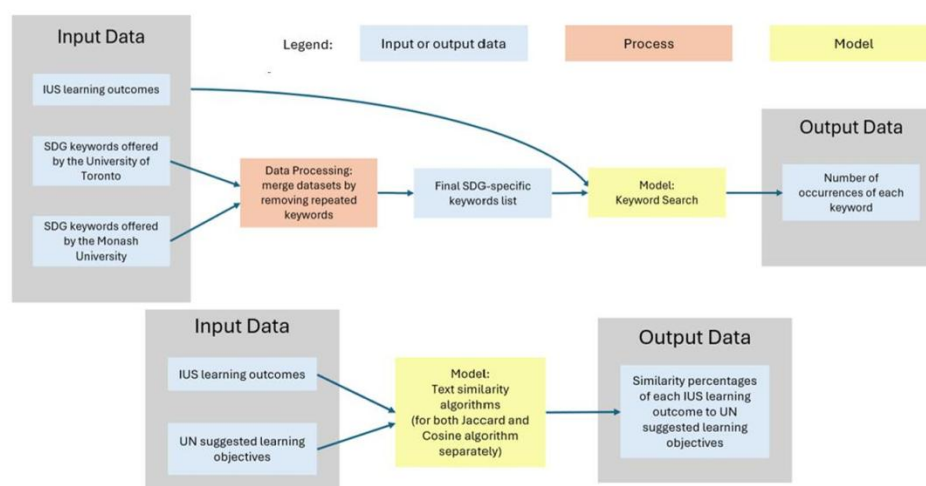


Figure 1. Workflow of keyword-based and text similarity-based models for detecting SDG relevance in university learning outcomes (Tašaković & Büyükdağlı, 2024).

In addition to algorithmic tools for curriculum mapping, we also explored the potential of AI language models to support SDG classification of academic publications. Specifically, we experimented with using tools like ChatGPT to analyse abstracts and summaries of faculty publications and suggest which SDGs the work may relate to. While this method is not intended to replace expert evaluation, it serves as a pre-screening tool that can provide preliminary insights and reduce the manual workload for those conducting traditional desktop assessments.

Paper	Score	Comments
E. Smolo, Knezovic, E., and Aydin, S., "Extending the concept of financial literacy: A step toward a sustainable society", <i>Heritage and Sustainable Development</i> , vol. 5, no. 1, pp. 65-76, 2023.	10	This paper is strongly related to SDG 4 (Quality Education) and SDG 8 (Decent Work and Economic Growth) as it discusses financial literacy, which is crucial for sustainable economic growth and development.

Figure 2. Example of AI-assisted SDG classification and scoring for a faculty publication.

² U. N. E. S. and C. Organization, "Education for Sustainable Development Goals Learning Objectives," 2017. [Online]. Available: <https://unesdoc.unesco.org/ark:/48223/pf0000247444>

The example given in Figure 2 shows how one publication was analysed and scored based on its potential contribution to SDG 4 Quality Education and SDG 8 Decent Work and Economic Growth. The AI-generated output gives a brief justification, which can be later confirmed, refined, or expanded by human reviewers during formal reporting.

While these technology-driven methods offered valuable support for curriculum and publication mapping, they also highlighted a parallel need: broader institutional participation. Automated tools could assist, but they could not replace the role of staff engagement in accurately identifying and validating SDG-related work. However, a persistent challenge remained: many staff members still perceived SDG reporting as an additional administrative burden.

To address this, we shifted our focus toward integration. Rather than requesting separate SDG reports, we explored how to embed this process into existing systems. This led to a simple yet effective solution: incorporating SDG reporting into the university's annual performance evaluation platform.

In the 2023/2024 academic year, the SDG Executive Committee proposed adding a dedicated "SDG-related" section within the performance evaluation system. Since all staff members were already required to use this platform to report their yearly academic, research, and community engagement activities, including a single additional question about SDG relevance created no extra workload. Staff were prompted to indicate whether each reported activity contributed to any of the SDGs. Because this field was compulsory, it significantly improved the completeness and consistency of our data and allowed for more systematic tracking. (Figure 3)

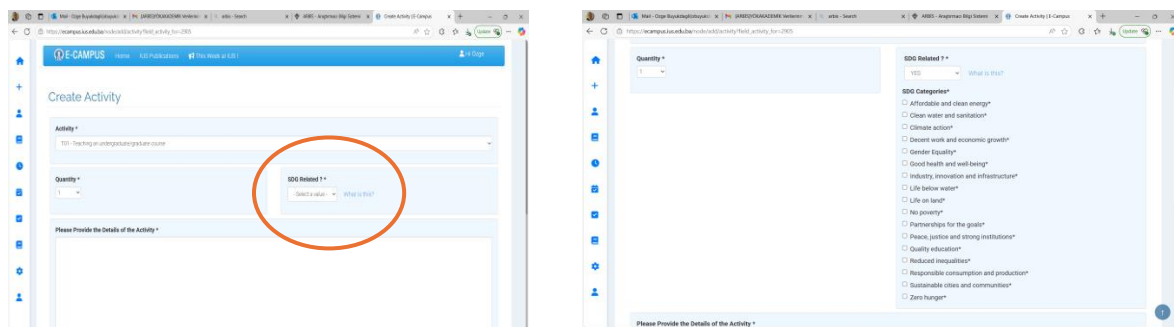
The image contains two side-by-side screenshots of a web application interface for 'E-Campus'. The left screenshot shows a 'Create Activity' form with fields for 'Activity', 'Quantity', and 'SDG Related'. The 'SDG Related' field is circled in orange, and a red asterisk indicates it is required. The right screenshot shows the 'SDG Related' dropdown menu expanded, displaying a list of 17 SDG categories for selection. The categories are: Affordable and clean energy, Clean water and sanitation, Climate action, Decent work and economic growth, Gender Equality, Good health and well-being, Industry, innovation and infrastructure, Life below water, Life on land, No poverty, Partnerships for the goals, Peace, justice and strong institutions, Quality education, Reduced inequalities, Responsible consumption and production, Sustainable cities and communities, and Zero hunger.

Figure 3. SDG-related reporting field integrated into the staff activity entry page on the IUS performance evaluation system (E-Campus), making SDG classification a required part of annual reporting.

The participation in this updated process was exceptional. By embedding SDG identification into a routine institutional procedure, we not only improved response rates but also raised awareness among staff about how their work contributes to sustainable development. The data collected through this integrated approach allowed us to generate our most comprehensive institutional SDG contribution map to date.

Figure 4 presents the number of reported outputs aligned with each of the 17 SDGs. As shown, the most frequently cited contributions were linked to SDG 4 Quality Education,

which is unsurprising given IUS's core role as a higher education institution. Significant contributions were also recorded under SDG 3 Good Health and Well-being, SDG 5 Gender Equality, and SDG 16 Peace, Justice and Strong Institutions. These results reflect the diverse and often interdisciplinary nature of sustainability-related efforts happening across faculties ranging from teaching content to extracurricular student projects and research initiatives.

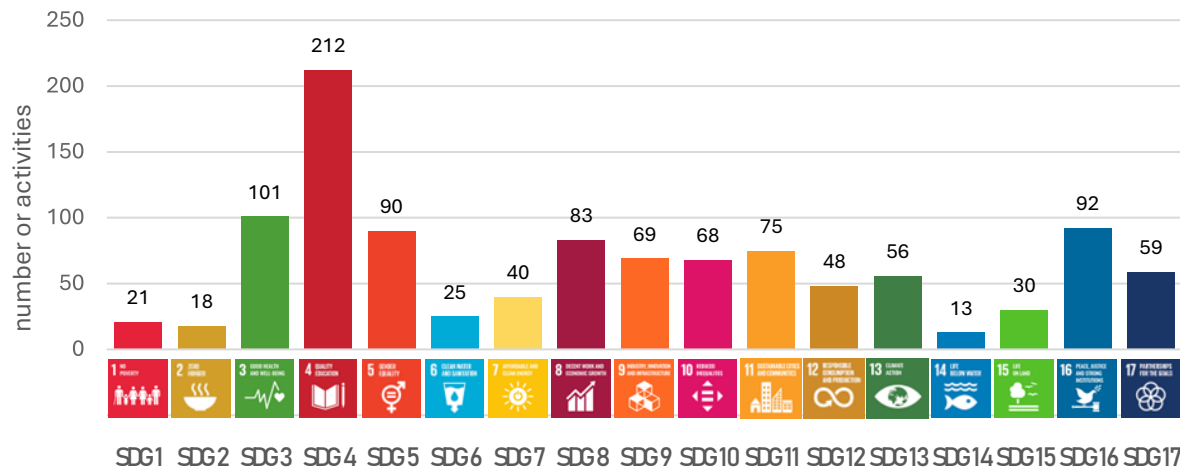


Figure 4. Number of reported IUS activities aligned with each Sustainable Development Goal (SDG), based on staff performance evaluation data for the year 2024.

This revised approach provided the SDG Committee with a much clearer and more comprehensive picture of our university's contributions. For the first time, we could see which programs and individual academics were engaging with specific SDGs, supported by accurate, detailed data that will only grow stronger over time. Because the process is now embedded into the university's standard annual operations, it no longer depends on a single individual or committee, making it both scalable and sustainable.

Just as importantly, the process prompted every academic to reflect on their own contributions. Having to classify their activities encouraged a moment of self-assessment and raised awareness across the university. In that sense, the system has already begun to achieve more than reporting: it is shaping mindsets, building shared ownership, and embedding sustainability deeper into our institutional culture.