Article

Towards Sustainable Development through Higher Education Quality Assurance

Nataliia Stukalo [1] and Maryna Lytvyn [1,2,*]

1   UA National Agency for Higher Education Quality Assurance, 01001 Kyiv, Ukraine; nstukalo@naqa.gov.ua
2   Department of Economic Theory and International Economic Relations, Dnipro University of Technology, 49005 Dnipro, Ukraine
*   Correspondence: maryna_lytvyn@ukr.net

Abstract: This study aims to identify the role of higher education quality assurance in achieving sustainable development goals. To support this aim, the following objectives were formulated: to discuss and summarize the best practices of QA agencies in promoting SDGs, to identify how Ukrainian universities consider SDGs in their policies, to develop recommendations for internal, and external quality assurance systems regarding SDG achievement. This qualitative study is based on a case study, observation, and questionnaire methods. Ukrainian higher education quality assurance systems are taken as a case study for this article. Primary data are collected through an online questionnaire and observation of Ukrainian universities' publicly available information regarding sustainable development activities at their official websites. Additionally, some publicly available documents, reports, and materials on the experience of foreign quality assurance agencies are also reviewed, compared, and contrasted. The results of the research can be used at national levels where higher education standards should include competence in sustainable development goals, at institutional level to improve HEIs' quality assurance system, and at the study program level to include SDG consideration as one of the requirements during internal quality assurance procedures.

Keywords: sustainable development; higher education quality assurance; sustainable development goals

1. Introduction

In November 2020, the European Higher Education Area (EHEA) ministers signed the Rome Communiqué [1], which highlights the key role of higher education in sustainable development goals (SDGs) [2] adopted by the United Nations and focuses attention on the support and the development of the higher education institutions' (HEIs) ability and capacity to prepare their students for "green" work and other activities to achieve SDGs. Learners should be offered upskilling and reskilling opportunities in a lifelong-learning plan, and they should be encouraged to develop and apply new technologies and approaches.

"Green work" is a job involved in the areas of the economy engaged in producing goods and services for environmental protection as well as those participating in conserving and maintaining natural resources (United Nations System of Environmental Economic Accounting definition) [3]. The International Labour Organization (ILO) uses a broader definition of what is considered "green", including activities such as community adaptation to climate change. Another difference from the environmental goods and services sector (EGSS) definition is that to be "green", jobs must also be "decent".

The global pandemic demonstrates how sensitive and vulnerable humanity is, and we need to join efforts to ensure a healthy, comfortable, decent life for future generations. A high quality education plays a key role in the formation of a civil society and prepares critically thinking people who feel a responsibility to conserve resources and ecosystems, defend the environment, and overcome hunger and poverty. The Rome Communiqué

states that HEIs should promote SDGs, and internal and external quality assurance systems should evaluate and monitor the achievement of SDGs put in place at HEIs.

The European Higher Education Area (EHEA) ministers have adopted the "Principles and Guidelines to Strengthen the Social Dimension of Higher Education in the EHEA", based on its broad understanding of social dimensions and commitment to implementing the principles and guidelines [1].

Several European agencies implemented an evaluation of universities' capacity to equip their students with the skills and the knowledge of "green" work and activities related to sustainable development. Leading universities all over the world publish annual reports on their achievement of sustainable development goals. The Times Higher Education Impact Rankings are the only global performance tables that assess universities against the United Nations' SDGs [4]. In 2021, the Times Higher Education published a full assessment of the impact of universities worldwide on solving urgent global problems. The developers have generated 18 ratings overall and 17 ratings for each SDGs. The 2021 Impact Rankings includes 1117 universities from 94 countries and is led by a U.K. university for the first time, the University of Manchester. Three Australian institutions complete the top four: the University of Sydney, RMIT University, and La Trobe University. The top institution from an emerging economy is Thailand's Chulalongkorn University (in 23rd place). The ranking also includes 17 Ukrainian higher education institutions, and in 2021, Lviv Polytechnic became the leader among the higher education institutions of Ukraine [4].

Ukrainian universities demonstrate some best practices in promoting and achieving SDGs. In 2021, Sumy National Agrarian University hosted the Plastic Challenge Hackathon 2021 in the modules of Jean Monnet Erasmus+ project and became the partner event of the European Green Week (#EUGreenWeek). Twenty-six partners were involved in the event, including universities and research institutions from France, Norway, the Netherlands, and others [5].

The United Nations Development Program (UNDP) in Ukraine and the European Union (EU) have been promoting SDGs for many years. In 2010, within the framework of UNDP/EU Project "Community-Based Approach to Local Development" (CBA) [6], the Educational Network for Sustainable Local Development was established, which includes 42 higher education universities in Ukraine [7]. Twenty-two sustainable development resource centers have been established in these universities. The main goal of the resource centers is to promote the Global 17 SDGs, which all countries of the world are committed to achieving by 2030. Some large-scale events were held within the framework of cooperation and partnership with UNDP in 2012–2017 in Ukraine. These include weeks and days set aside to bring awareness to SDGs; six all-Ukrainian student debates on sustainable development; six summer schools on sustainable development; 256 international conferences, forums, workshops, trainings on SDGs; and the implementation of 62 disciplines on sustainable development with 7153 students being involved [8].

The SDGs implemented and monitored by these programs should be affirmed at an institutional level through priorities in the universities' strategies as they develop relevant procedures and policies. Additionally, each study program can contribute to the achievement of SDGs through relevant teaching methods and learning technologies as well as in the contents of the courses. Each program should consider an objective to promote the formation of conscious citizens responsible for the future of their children and the whole world.

This study aims to identify the role of higher education quality assurance in achieving sustainable development goals. To support this aim, the following objectives are formulated: to discuss and summarize the best practices of QA agencies in promoting SDGs, to identify how Ukrainian universities consider SDGs in their policies, and to develop recommendations for internal and external quality assurance systems regarding SDG achievements.

Thus, the following research questions regarding quality assurance agencies, HEIs, and HE QA systems are raised and discussed. What is the HE QA system role in sus-

tainable development goals promotion? How could the internal and external quality assurance contribute to SDG achievement? How do quality assurance agencies address SDGs during external evaluation? How do Ukrainian higher educational institutions consider sustainable development goals in their policies and procedures? How do SDGs relate as a compulsory requirement for HEIs in their QA policies and standards? What are the current practices of evaluation and monitoring of Ukrainian higher education contribution to sustainable development? What steps and actions should be taken by quality assurance agencies, HEIs, and HE QA systems to enhance QA contributions to SDG achievements?

2. Literature Review

The peculiarities of ensuring sustainable development and quality assurance in higher education are debatable issue among authors and experts. Many scientists have devoted their investigations to theoretical and practical aspects of sustainable development in the context of higher education quality assurance.

Galkute et al. [9] defined quality as a central tool for the transformation of universities. As a result of the analysis of the quality assurance of higher education within the context of sustainable development, the authors advocate the "fitness of purpose" approach with the goal of systematic, continuous transformation within the context of achieving sustainable development. Galkute et al. [9] have analyzed the internal quality systems in universities that are actively developing suitability for transformation and concluded that the key role of our higher education institutions is not only to produce graduates for today but sustainability-literate, change savvy, inventive, ethically robust leaders for tomorrow, and for this to happen, a profound transformation of our HEIs is necessary [9].

It is worth paying attention to the findings presented by Holmab et al. [10] who made the comparative analysis of quality assurance in education for sustainable development (ESD) in Chinese and Nordic countries and universities, both at the policy level and at the implementation level. In the first stage of the study, the literature was analyzed; in the second stage, a special survey was conducted in scientific circles in two provinces of China [10]. Holmab et al. [10] investigated the possibilities of improving ESD in these regions by the application of quality assurance requirements, and they found that both regions enhanced their ESD.

The study of Yanniris [11] substantiates the theoretical foundations of ecology, sustainability, and global citizenship education based on three practical cases from Greece, Colombia, and Mexico. These examples represented approaches to education that are interdisciplinary in nature. Yanniris [11] concluded that while environmental education has a deeper aim in bringing science into a dialectic relationship with ethics, education for peace and global citizenship bears the promise of reconciling ethics with social practices by addressing issues such as social and environmental justice.

Voskoboynikova-Guzeeva [12] concluded that the process of implementing education in sustainable development, which is actively taking place in Ukrainian universities, is characterized by multi-vector and multi-level factors. Voskoboynikova-Guzeeva [12] has identified that the promising direction in which to continue research is to study the experience of project activities in the field of SDGs, in particular the activities of adult education centers involved in the implementation of SDGs. From the other side, Koreneva [13] argues that education for sustainable development should be interdisciplinary, inclusive, and continuing. Sustainable education has a proactive nature and a practical orientation, and it integrates not only the field of formal education, but also all education [13].

On the other side, Zinchenko et al. [14] concluded that the existing education system is still "teaching" society the tasks and the SDGs on a small and insufficient scale. The authors identified that communication is a strategic resource that contributes significantly to the sustainable development of HEIs, its competitive advantages in the national and global markets for educational services, and the establishment of partnerships for SDGs. Zinchenko et al. [14] concluded that HEIs should be transformed and improved as institutions that are focused on all types of young people with disabilities; must be "gender

sensitive"; create and strengthen a safe, non-violent, inclusive, and effective learning environment for all; and provide training for qualified educational staff, including through international cooperation of developed countries with developing countries. Contrary to that point, Khmelevska [15] substantiated that the role of educational institutions is to facilitate a transition to the principles of sustainable development and implementation of SDGs in Ukraine. Khmelevska [15] concluded that Ukraine should focus on the development of such educational institutions in the following ways: reorient the subject area of education and competence design; train education support agents; create a sustainable learning environment; and update the content of educational reforms [15]. Finikov et al. [16] concluded that the national understanding of the concept of lifelong learning in Ukraine is at the stage of formation, which corresponds to the real situation in the European Higher Education Area (EHEA). The Charter of European Universities for Lifelong Learning, which sets out a coordinate system for cooperation among universities, governments, and stakeholders, can serve as a milestone in this direction [16].

On the contrary, Anderson [17] analyzed the strategic and normative documents of Latvia at different stages of their reform of educational content and concluded that competencies, problem-solving skills, and critical thinking skills are relevant today in improving the content of education. Education for sustainable development is characterized by an integrated approach to economic and social development, based on a diversity in culture, everyday life, and economy; the responsibility for people's life conditions and environments; the participation of the society in decision making; the observance of regional, national, and global contexts; and an integrated teaching and learning process [17].

Many studies of SDGs are supported by the United Nations Development Program. An interesting study, "Analysis of State Strategic Documents of Ukraine to Consider the SDGs for 2030 Adapted for Ukraine: Analytical Report" [18], was conducted based on the United Nations methodology. Experts have analyzed 35 selected, strategic state documents according to certain criteria and developed proposals and recommendations on measures to be taken to ensure better incorporation of SDGs into the state policy of Ukraine. For example, the Institute of Public Economic Research has analyzed strategic state documents in Ukraine to consider the SDGs for 2030 adapted for Ukraine [18]. It concluded that many measures and tasks of SDGs 4.4 "to improve the quality of higher education and ensure its close connection with science" are included in state strategic documents, such as a strategy for sustainable development of Ukraine and a national strategy for the development of education in Ukraine. This document included the development and approval of 125 standards of higher education for a bachelor's degree in philosophy, 127 standards of higher education for a master's degree in philosophy, and 117 standards for a doctorate in philosophy. The analysis of state strategic documents showed that today the process of their adaptation to the tasks of SDGs has not yet systematically begun, and where the goals and objectives of SDGs coincide, it has happened indirectly under the influence of bilateral or multilateral international agreements. Even the preparation of the national report "SDGs: Ukraine" was not completed until 2017 [18].

The first voluntary national review of the SDGs in Ukraine [19] is devoted to the transformation of society on the way to achieving SDGs. The review summarizes public opinions and expert assessments on the achievement of each of the 17 SDGs, including four SDGs on the quality of education [19]. The national report "SDGs for youth of Ukraine" contains a vision of the guidelines for youth development within the context of Ukraine's achievement of SDGs. Interestingly, the following measures have been taken to improve the quality of higher education in the international market of educational services: the National Agency for Higher Education Quality Assurance (NAQA) has established guidelines for the development of higher education standards based on a competency-based approach and basic funding for science in universities for the long term was introduced [20]. In 2018, Ukraine joined the international education quality survey of Programs for International Student Assessment (PISA), which was launched almost 20 years ago by the Organization for Economic Cooperation and Development (OECD). Today, more than 80 countries have

been involved in the study. Their government officials trust the results of PISA and use them to make informed policy decisions in the field of education [21].

The Quality Assurance Agency for Higher Education of Andorra (AQUA), in collaboration with the Aragon Agency for Quality Assurance and Strategic Foresight in Higher Education (ACPUA), has developed a proposal of indicators to embed SDGs into institutional quality assessments (QA). This work is part of the project Making Connections between the Institutional Evaluation and the Sustainable Development Goals: Empowering Stakeholders for quality enhancement and is co-funded by the International Network for Quality Assurance Agencies in Higher Education (INQAAHE) [22]. The results of this project are the integration of the institution's quality assurance system with SDGs. The quality assurance agencies of Aragon and Andorra have worked alongside higher education stakeholders that are seeking to interpret SDGs in their higher education context, identify quality concerns in relation to embedding the SDGs in higher education, and develop indicators that could be used to improve, as well as assess, an institution's quality performance in this area [22].

The Education for Sustainable Development Guidance is intended to help UK higher education institutions incorporate Education for Sustainable Development (ESD) within their curricula. QAA and Advance HE, together with a group of experts representing academic, business, and student communities, published a new version of the guidance for 2021 with the aim of supporting students from any discipline to acquire the knowledge, understanding, and skills necessary to develop values towards sustainable futures [23].

There is evidence the researchers and practitioners pay attention and demonstrate understanding that quality assurance in higher education could play an important role in promoting and achieving SDGs. However, the problems associated with the issues of achieving SDGs at the university level are far from being solved and require further theoretical and experimental efforts. There is a lack of comprehensive investigation into the role of internal and external higher education quality assurance (QA) in SDG achievements. It is important to identify how SDGs are considered at the university level in emerging countries like Ukraine and what steps and measures should be implemented through QA procedures in order to improve in this sphere.

3. Materials and Methods

3.1. Methodology

This qualitative study was based on the case study, observation, and questionnaire methods [22]. Both primary and secondary data were collected through observations and questionnaire. Ukrainian higher education quality assurance system was taken as a case study for this article. Primary data were collected through an online questionnaire and observations of Ukrainian universities that were publicly available with information regarding sustainable development activities at their official websites. In addition, some publicly available documents, reports, and materials on the experience of foreign quality assurance agencies were also reviewed, compared, and contrasted.

3.2. Primary Data Collection and Analysis

The 14-question questionnaire was developed and disseminated via social media and NAQA contact lists involved such participants as academics, QA experts, HEIs representatives, university administrators, students, and employers. A total of 760 responses were collected. The survey was conducted to study the activities of HEIs in Ukraine to achieve SDGs. The participants of the survey were representatives of Ukrainian HEIs, QA experts, students, and employers as well as all interested parties.

The major objective of the questionnaire was to obtain first-hand feedback on the higher education practices regarding SDG promotion, understanding, and implementation. The structure of the questionnaire included the following questions: What group of stakeholders do you represent? Is achieving SDGs clearly declared in the strategic documents of your higher education institution? Is the contribution of the higher education institution to

achievement of SDGs constantly monitored and evaluated? Has your higher education institution had webpages devoted to SDGs? Did the results of monitoring the achievement of SDGs get published on the university's website? Does the strategy of quality assurance of educational programs include the achievement of SDGs as one of the key requirements? Does your higher education institution use SDGs in internal quality assurance procedures? Does your higher education institution provide SDGs at the level of study programs? Do the study programs provide the acquisition of competencies related to sustainable development? Do the students join initiatives to ensure sustainable development?

The questionnaire was offered to identify the role of higher education quality assurance in achieving SDGs, to discuss and summarize the best practices of QA agencies in promoting SDGs, and to identify how Ukrainian universities consider SDGs in their policies. The major objective of the questionnaire was to obtain first-hand feedback on the higher education practices regarding SDG promotion, understanding, and implementation. The collected data set was sufficient since the questionnaire was distributed among the wider academic public, representatives from various size and types of universities, and stakeholders who were involved in quality assurance from different regions of Ukraine. The demography of the questionnaire participants was the following: 11% were representatives of university administrations, 30% were study program leaders and other representatives (e.g., teachers and scientists), 52% were QA experts, 5% were students, and 2% were employers.

The primary data were analyzed through a repeated process of critical reading, interpreting, and reaching a shared understanding of the data. The logical steps of the data analysis were the following: labelling and archiving the analysis of demographic data, reviewing the questionnaire results, identifying the key patterns, coding different themes and organizing the data into relevant categories, preparing a simple grid to collate the data obtained, designing a simple coding system for closed questions, evaluating open questions, reviewing responses and their categorization into a small set of broad categories to be coded, calculating the proportion of respondents answering for each category of each question, and pooling responses to a number of related questions. The obtained results were also compared with expectations and research questions that were interpreted and summarized.

3.3. Secondary Data Collection and Analysis

This study also used secondary data including journal articles and publicly available information offered by QA agencies and universities' websites. The cases of foreign QA agencies were considered for benchmarking the outcomes of the Ukrainian case study.

The secondary data analysis was conducted to cross check the results of this research and to validate the findings. The primary data collected via questionnaire were checked against the data presented on the universities' websites. At the final stage, the conclusions were made.

3.4. Limitation

The limitation of this qualitative study was that the participants recruited for the questionnaire represented opinions of only those stakeholders who had access to the Internet and email as well as those who were registered on social media. It did not consider the opinion of people who were inactive on social media. Such an approach was justified, firstly, to avoid any face-to-face contacts due to COVID-19 pandemic restrictions. Secondly, most stakeholders of higher education were involved in social media and e-communication, so university managers, teachers, students, experts, and employers became participants of this research.

4. Results

4.1. International Experience on Quality Assurance Systems Contribution to Sustainable Development

The external QA role is to ensure that national and international standards of qualifications offered by universities are well planned, properly delivered, and appropriately evaluated. QA agencies review HEIs and their study programs against such standards and evaluate their contributions to the most important issues that societies face. According to the Rome Communiqué, HEIs are expected to play key role in achieving SDGs through preparing all their students for different activities to achieve SDGs. Some QA agencies have already started active promotion of SDGs and include relevant criteria into external QA reviews. AQUA is one of the pioneering agencies focusing its attention and support on quality-led pathways for embedding sustainable development into higher education and bringing SDGs into higher education QA and quality enhancement systems [24].

AQUA ensures the quality of higher education in Andorra, conducts certifications, and improves the quality of higher education and research in the universities [25]. AQUA assesses, accredits, and certifies the quality of HE in Andorra in accordance with the European Standards and Guidelines (ESGs). AQUA assesses, accredits, and certifies the quality of HE in Andorra in accordance with the European Standards and Guidelines (ESGs). In 2019, its focus was on two universities: a public university, the Universitat d'Andorra (UdA) and a private online university, La Salle Open University-Andorra (UOLS). The UdA consists of online studies and the University Extension Centre, the Health and Education Science Centre, the Health Sciences and Education Centre, the Business and Technology Studies Centre, and the International Doctorate School. It offers classroom-based and online studies in the fields of nursing, educational science, IT, business administration, languages, humanities, and law. The university's mission is to meet the country's needs, and its values include social responsibility, quality, and the spirit of critical thinking and innovation. UOLS offers courses in business studies, IT and multimedia, and Lasallian studies. The university is flexible and international with important values such as inclusive education, solidarity, and diversity [22,24]. AQUA aims to be a streamlined, approachable, and inclusive agency that acts as a platform for transformation in higher education. It recognizes that institutional quality can support efforts to address social and employment needs [22,24].

AQUA's best practices for external quality assurance in higher education have been set out in proposals to improve the quality standards of higher education proposed for the implementation of SDGs [25]. In particular, it is the creation of forums and debates to advance sustainability through quality assessment systems and to decide which sustainability standards are most relevant as well as to determine the process of their implementation and evaluation. AQUA determined that higher education institutions should not limit themselves to achieving established standards, but should develop plans, programs, and innovative initiatives that go further and promote sustainable development in university activities while paying special attention to the teaching and learning process [25].

ACPUA is the official regional agency for quality in higher education in Aragon. ACPUA started operating in 2006 with the specific intention of promoting a culture of quality and guiding strategic decision-making in higher education. ACPUA serves the Aragon university system by promoting quality enhancement as well as assurance. Its focus is on two universities: a public university (The University of Zaragoza, Zaragoza, Spain) and a private university (San Jorge University, Zaragoza, Spain). ACPUA is a full member of the European Association for Quality Assurance in higher education (ENQA) and is registered in the European Quality Assurance Register for higher education (EQAR) [22].

AQUA and ACPUA have worked together on quality enhancement initiatives since 2015. The agencies share a common understanding of the role quality assurance agencies play in small higher education systems as well as the need to engage stakeholders actively in the quality assurance processes. ACPUA and AQUA worked alongside higher education stakeholders seeking to interpret SDGs in their higher education context and identify qual-

ity concerns in relation to embedding SDGs in higher education and developing indicators that could be used to improve as well as assess an institution's quality performance in this area. This alignment resulted in a collaborative partnership that supports dialogue and learning across their areas of responsibilities [22].

Education for Sustainable Development (ESD) is a global HE trend and recent QAA development. ESD can be understood as a lens that permits us to look critically at how the world is and to envision how it might be and equips us to deliver that vision [23]. The European Association for Quality Assurance in higher education (ENQA) is an umbrella organization that represents its members at the European level and internationally, especially in the political decision-making processes and in co-operation with stakeholder organizations. ENQA has already introduced into their practice the assessment of the ability of universities to prepare their graduates for "green" activities and other activities to ensure sustainable development [26].

Following best practices while considering the Rome Communiqué, QA has begun to include SDGs and relevant criteria for higher education quality evaluation. For instance, in the beginning of 2021, NAQA developed changes to the regulations on study program accreditation. Among other suggested changes, there are additional criteria for study program evaluation and how SDGs are considered in its objectives and in a HEI's strategies and policies. These changes are currently under review and will hopefully be adopted in the future.

4.2. Role of Higher Education in Sustainable Development Goals Achievement: Case of Ukraine

Most Ukrainian universities consider SDGs in their strategies and other documents. Moreover, 82% of questionnaire respondents confirmed that SDGs were declared in their HEI's strategy and an additional 5% said SDGs were included in other policy documents. Among the other documents are ecology policies of the university, the charters of the HEIs, concepts of consumption, corporate culture codes, annual reports, quality assurance policies, rector's orders, concepts of sustainable development, social reports, internationalization strategies, study process documents, and energy management strategies. Only 11.5% of respondents reported that SDGs were not mentioned in the strategic documents.

Approximately 50% of the respondents thought that HEIs conduct sustainable development events regularly and implemented SDG policies in consistent and comprehensive ways. A total of 44% of respondents reported that such policies and events were conducted from time to time, and only 5% thought that no SDG activities were provided by HEIs. Few respondents considered that sustainable development principles were formally declared but not actually implemented—"SDGs are formally mention in our university's documents, but are not implemented in fact"—and mentioned some efforts and initiatives of different departments or groups of people that are not supported systematically at an institutional level because of the absence of the national regulations regarding this issue. For example, "Only department of ecology contributes to this problem at our HEI. The ministry should issue the order to teach 'Sustainable development' as obligatory course for all students".

The HEIs' contribution to SDG achievements were monitored and evaluated on an annual basis (51%) or periodically (35%). No monitoring of sustainable development principles implementation was reported by 11.5% of the respondents.

However, the monitoring results and relevant information regarding SDG implementation was not sufficiently presented on university websites: 25% of responses confirmed there was no relevant information on websites, only 31% respondents considered the information to be sufficient, and 42% confirmed only a partial presentation of the SDG-related information.

To verify the data collected through the questionnaire, the HEI websites were observed. According to the annual report of the National Agency for Higher Education Quality Assurance (NAQA), there were 282 educational institutions in Ukraine in 2019 with slightly more than 1.3 million students [27]. In this study, the websites of 80 Ukrainian HEIs (seventy-five state and five private universities) from different regions of Ukraine (Vinnytsia, Dnipro,

Zhytomyr, Zaporizhia, Ivano-Frankivsk, Kyiv, Lviv, Mykolayiv, Nizhyn, Odesa, Ostroh, Poltava, Rivne, Sumy, Ternopil, Uzhhorod, Kharkiv, Cand hernihiv) were analyzed to verify the data obtained through the questionnaire.

The review of the universities' websites included the investigation of the following issues: Were there separate pages devoted to SDGs on a university's website? Was information about a university's activities on SDGs systematically provided? Were there any documents describing SDGs as a strategic direction of the HEI and what were they? Was there evidence that SDGs were provided at the level of study programs? Did this happen systemically, periodically, chaotically, or unsystematically?

A total of 12% (10 out of 80) of Ukrainian HEIs had pages devoted to SDGs. For example, the website of the Vinnytsia Institute of Trade and Economics of Kyiv National University of Trade and Economics had the page "Resource Center for Sustainable Development" [28]. The website of Uzhhorod National University had the page "Sustainability Development Center" [29]. Uzhhorod National University was a co-organizer of the action in the Transcarpathian region [30].

The website of Dnipro University of Technology [31] had pages referring to integrated courses within the context of sustainable development, scientific publications on sustainable development management, internships and advanced training courses on sustainable development (including academic and scientific mobility), and participation in projects on sustainable development [31].

The Resource Center for Sustainable Development has been established at Volodymyr Dahl East Ukrainian National University [32]. Every year, a conference is held for higher education students of various specialties and is dedicated to the problems and SDGs in Ukraine and the world. In 2020, the course Economics of Sustainable Development was introduced as an elective for other specialties. The university has created a multi-hub dialogue platform called "GreenLab" where they promote the principles of the green office [33].

So, we concluded that some Ukrainian universities had webpages devoted to SDGs. However, in general, the information about a university's activities on SDGs was provided unsystematically. The information was updated at the resource centers for sustainable development of HEIs in Ukraine: Resource Center for Sustainable Development of Kyiv National Economic University, named after Vadym Hetman [34]; Sustainability Development Center of Uzhhorod National University [29]; Resource Center for Sustainable Development of Sumy State University; Resource Center for Sustainable Development of Volodymyr Dahl East Ukrainian National University [32]; on the website of V.N. Karazin Kharkiv National University was information on SDGs (but references to poverty, quality education, good health and well-being, sustainable cities and communities, and partnership for sustainable development were not included) [35]; and others. Information was provided about weeks and days set aside to identify and celebrate SDGs as well as for student debates on sustainable development, summer schools on sustainable development, international conferences, forums, workshops, and trainings on SDGs and disciplines on sustainable development. It should be noted that the UNDP project A Community-Based Approach to Local Development significantly influenced the role of universities in SDGs [6]. Due to the implementation of the UNDP project and the process of opening resource centers for sustainable development, their drive for promoting SDGs had to be postponed [7]. The Educational Network for Sustainable Local Development is an association of representatives from the network of HEIs in Ukraine that were partners of the European Union Project and the UNDP CBA. The purpose of the network is to create a permanent platform for discussing the activities of universities in helping current and future generations understand and apply SDGs through the involvement of citizens [7,36].

A total of 31% (25 out of 80) Ukrainian HEIs have documents regulating sustainable development goals as a strategic direction of the HEI: Strategy 2025 Ukraine Catholic University [37], Development Strategy of Sumy National Agrarian University [38], Devel-

opment Strategy of V.N. Karazin Kharkiv National University [39], Strategic development plan of Lviv Polytechnic until 2025 [40], and others.

According to the participants' responses, 55.5% agreed and 36.7% partly agreed with this statement: Institutional quality assurance systems include SDG achievement as a key requirement and standard.

The review of the HEIs websites demonstrated that 5% (4 out of 80) of Ukrainian HEIs had used sustainable development goals in internal quality assurance procedures. Only 5% (4 out of 80) of HEIs in Ukraine provided SDGs at the level of study programs. For example, the study programs called "International Economic Relations" [41] and "Marketing" [42] at Dnipro University of Technology included sustainable development goals as part of the course work. The course "Sustainable Development Strategy" is included in most master's study programs implemented at National University of Food Technology as a basic or elective course in the educational programs "Ecology" and "Veterinary Hygiene, Sanitation, and Expertise" and include sustainable development goals.

The National Forestry University of Ukraine has a comprehensive program of "greening" the educational process and their courses. The university is recognized as the most ecological university in Ukraine according to the results of UI Green Metric. Several international projects in which NNPs and free economic zones take part are aimed at achieving the goals of sustainable development including "Sustainable Cities Week" [43].

Overall, there are some good practices already implemented and evidence that Ukrainian universities have paid attention to SDG promotion at the study program level; however, their activities in this area are still quite chaotic and unsystematic.

A total of 42% of respondents confirmed that internal QA procedures included the evaluation of how SDGs were built into the context of the study programs, and 44% respondents confirmed that SDGs were partly considered in their study programs. It is important to note that study programs included SDGs as obligatory courses (confirmed by 52% respondents), optional courses (49%), SDG-related topics in the course content (52%), practical training (25%), and informal and non-formal education (26%). One of the respondents mentioned such practice as "interdisciplinary course work on sustainable development component".

In Ukraine, 107 higher education standards for bachelor's degrees and 89 standards master's degrees have been developed and approved as of 2021. They covered all 29 fields of knowledge including education, culture and art, social and behavioral sciences, journalism, management and administration, biology, natural sciences, information technologies, mechanical engineering, electrical engineering, chemical and bioengineering, electronics and telecommunications, agricultural sciences and food, social work, transport, public administration, international relations, etc. [44]. The analysis of the 80 standards mentioned above demonstrated that less than 5% of standards included SDG achievement as a key requirement. For example, standards of higher education (for bachelor's and master's degrees) in ecology and earth sciences covered sustainable development goals [44]. This was typical as this topic not only corresponds to the content of the specialty, but it is a key topic for the ecology field.

The case of Ukraine demonstrates that Ukrainian higher educational institutions understand the importance of considering sustainable development goals in their policies. However, this understanding is not actioned in the policies and strategies consistently and often does not lead to practical implementation. In order to improve the practical implementation of SDGs in HEIs, it should become a part of HE standards and quality assurance criteria. This will challenge the HEIs in Ukraine to consider SDGs as important issues to be included in their strategic and policy documents as well as a way to improve internal QA procedures, so they review the achievement of SDGs at the study program and university management levels.

5. Discussion

This study demonstrated the important and substantial role of higher education and its quality assurance in achieving sustainable development goals. The QA agencies and universities have initiated and implemented some good practices to promote and implement SDGs.

At the level of QA agencies, the most important tool to include is a review of SDG achievements in the external evaluation criteria. There are some examples of implementing such practices by foreign agencies, and NAQA has also suggested some relevant changes for external QA regulation documents.

Most HEIs in Ukraine consider SDGs as an important issue to be included in their strategic and policy documents. The contribution of universities to the achievement of SDGs is evaluated periodically, and in some cases, even annually. However, the results of monitoring the relevant information on the implementation of SDGs are insufficiently presented on the websites of universities. The results of the questionnaire and the review of the HEIs' websites confirmed the lack of relevant information. Only 15% of Ukrainian HEIs had pages dedicated to the goals of sustainable development, and only 40% of HEIs in Ukraine had documents describing SDGs as a strategic direction.

It is also important to note that internal QA procedures were not focused on the review of achievement of SDGs as a key requirement. Only a few HEIs have implemented SDGs at the study program level. Ensuring the implementation of SDGs at the study program level was chaotic and unsystematic. Approximately 5% of the HEIs in Ukraine provided SDGs at the study program level. An analysis of the standards of higher education in various fields showed that less than 5% of the standards included SDG achievements as a key requirement.

The results of this research can be used at the national level, at the institutional level, and at the study program level (Table 1).

Table 1. Recommendations for internal and external quality assurance systems for SDG achievement.

National Level	Institutional Level	Study Programme Level
Recommended: ➢ To ensure that the higher education standards include competencies relevant to sustainable development goals including their knowledge, in-depth understanding, and ability to implement them in everyday life and in the workplace. ➢ These standards should be reflected and integrated into the accreditation criteria to be reviewed and evaluated through external quality assurance procedures. ➢ To collect and analyze the results of external QA regarding SDGs and publish outcomes of such analysis on the QA agencies' websites and include them as a separate section in the QA agencies' annual reports. ➢ To make SDGs a focus at the agencies' webinars and expert trainings and to include them in guidelines and other publications.	Recommended: ➢ To consider SDG achievements as strategic goals and s priority in institutional policy. ➢ To include SDG considerations as one of the requirements during internal quality assurance procedures. ➢ To ensure the monitoring of department, faculty, and student efforts in joining and developing initiatives on SDG achievement.	Recommended: ➢ To foster continuous enhancement of teaching on the basis of SDGs. ➢ To promote the integration of sustainable development topics into courses. ➢ To encourage teamwork among faculty, non-academic staff, and students to implement sustainable development practices and activities in the workplace. ➢ To establish short trainings to increase environmental responsibility and to promote the higher education mission for SDG achievement. ➢ To share and disseminate the work carried out in sustainable development and quality. ➢ To encourage and fund projects devoted to sustainable development. ➢ To use environmentally friendly technologies (facilities, paper-free, sustainable consumption, etc.) in universities.

At the national level, it is recommended that higher education standards include competencies relevant to sustainable development goals, including knowledge, in-depth understanding, and the ability to implement SDGs in everyday life and in the workplace. These standards should be reflected and integrated into the accreditation criteria and be reviewed and evaluated through the external quality assurance procedures. It would also be useful to collect and analyze the results of external QA regarding SDGs and then to publish the outcomes of such analyses on the QA agencies' websites, include them as a separate sections in the QA agencies' annual reports, and to make them a specific focus during the agencies' webinars and expert trainings as well as to include SDGs into their guidelines and other publications.

The results of the research can be used at an institutional level. As a recommendation for HEIs' quality assurance systems, they should consider SDG achievements as strategic goals and a priority in institutional policies and include SDG considerations as a requirement during internal quality assurance procedures. They should consider monitoring the efforts of their departments, faculty, and students in promoting and developing initiatives for SDG achievement. This should be reflected in university documents including strategic goals, action plans, internal quality assurance regulations, etc.

At the study program level, it is important to foster the continuous enhancement of teaching with a focus on SDGs and to promote the integration of sustainable development topics into the courses. Universities and study program staff should encourage teamwork among faculty, non-academic staff, and students as they work together to implement sustainable development practices and activities in the workplace, to establish short trainings to increase environmental responsibility, to promote the higher education mission of SDG achievement, to share and disseminate the work carried out in sustainable development and quality, to encourage and fund projects devoted to sustainable development, and to use environmentally friendly technologies (facilities, paper-free, sustainable consumption, etc.) on campus.

For example, students may prefer to adopt SDG achievement (decent work and economic growth, quality education, industry, innovation and infrastructure, sustainable cities and communities) as their personal career choice in the future. Suggestions for improving the implementation of education for sustainable development (ESD) include comprehensive formal and non-formal education, publicity, and curriculum integration to promote learning about SDGs [45].

6. Conclusions

To make sustainable development-focused learning and teaching a reality, it is important to consolidate the efforts of all higher education stakeholders at different levels, to start and maintain a structured dialogue on SDG innovations and enhancements in learning and teaching, and to encourage and support the development and implementation of national and institutional strategies. The issues addressed should include the development of curricula, learning outcomes, assessments, and quality assurance reviews, with due consideration for the skills needed to address current and future challenges of society [1].

The implementation and enforcement of SDGs should be ensured at the national, institutional, and study program levels. Each study program can contribute to the achievement of SDGs through appropriate teaching methods and learning technologies, course content, and working and learning environments. The purpose of higher education should include the formation of conscious citizens responsible for the future of their children and all mankind.

The results of this research can be used at the national level. Standards for higher education should include competency in sustainable development goals. At an institutional level, HEIs need quality assurance systems for SDG achievement. At the study program level, internal quality assurance procedures should include SDG consideration as one of the requirements.

This study has discussed the current situation of SDG achievement in IQA and EQA as well as provided recommendations on how to progress in this direction. The evaluation of the link between IQA and EQA in terms of SDG achievement is an area for future investigation and further studies in this field.

Future work will relate to the development of a methodology for determining the criteria for achieving sustainable development goals at a national level, at an institutional level, and at a study program level.

References

1.　Rome Communique. Available online: https://erasmusplus.org.ua/novyny/3131-bologna-conference-in-rome-19-nov-2020.html (accessed on 19 November 2020).

2.　Sustainable Development Goals. Available online: https://www.ua.undp.org/content/ukraine/uk/home/sustainable-development-goals.html (accessed on 14 August 2021).

3.　The Challenges of Defining a "Green Job". Available online: https://www.ons.gov.uk/economy/environmentalaccounts/methodologies/thechallengesofdefiningagreenjob (accessed on 14 August 2021).

4.　Impact Rankings. 2021. Available online: https://www.timeshighereducation.com/impactrankings?fbclid=IwAR1tTZIMxsLJYzQAFtu5tRlxn6Tz2cRisKviFet2oLgJ19lTa_LMv3a8WWE#!/page/0/length/25/sort_by/scores_overall/sort_order/asc/cols/undefined (accessed on 14 August 2021).

5.　International Plastic Challenge Hackathon at SNAU has brought together fighters for a clean environment. Available online: https://snau.edu.ua/mizhnarodnij-plasticchallengehackathon-u-snau-borciv-za-chiste-dovkillya/ (accessed on 28 May 2021).

6.　About the Project UNDP/EU Project "Community Based Approach to Local Development". Available online: http://cba.org.ua/en/about-us/about-the-project (accessed on 14 August 2021).

7.　Educational Network to Promote Sustainable Local Development. Available online: https://m.facebook.com/groups/389955517766641 (accessed on 14 August 2021).

8.　Stukalo, N.; Lytvyn, M. Sustainable development: Ways from "brown to" green economy. In *Green Economy: From the Global Concept to Reality of Local Development*; Oles Honchar Dnipro National University: Dnipro, Ukraine, 2018; pp. 24–35.

9.　Galkute, L.; Fadeeva, Z.; Mader, C.; Scott, G. Assessment for Transformation—Higher Education Thrives in Redefining Quality Systems. In *Sustainable Development and Quality Assurance in Higher Education—Transformation of Learning and Society*; Palgrave Macmillan: London, UK, 2014; pp. 1–25.

10.　Holm, T.; Sammalisto, K.; Vuorisaloa, T. Education for sustainable development and quality assurance in universities in China and the Nordic countries: A comparative study. *J. Clean. Prod.* **2014**, *107*, 529–537. [CrossRef]

11.　Yanniris, C. Education for Sustainability, Peace, and Global Citizenship: An Integrative Approach. *Educ. Sci.* **2021**, *11*, 430. [CrossRef]

12.　Voskoboynikova-Guzeeva, O. Sustainable Development Goals to 2030: Implementation in the educational process of training information professionals in Ukraine. *Ukr. J. Libr. Inf. Sci.* **2020**, *6*, 84–96. [CrossRef]

13.　Koreneva, I. The phenomenon Education for sustainable development: The essence and modern features of the concept. *Ukr. Pedagog. J.* **2018**, *2*, 113–123.

14.　Zinchenko, V.; Bryzhnik, V.; Gorbunova, L.; Kurbatov, S.; Melkov, Y. *Analysis of Leading Domestic and Foreign Experience on Higher Education Strategies in Terms of Internationalization for Sustainable Development of Society*; Institute of Higher Education of the National Academy of Educational Sciences of Ukraine: Kyiv, Ukraine, 2020; p. 270.

15.　Khmelevska, O. Education for sustainable development: Content and institutions. *Demogr. Soc. Econ.* **2018**, *1*, 29–42. [CrossRef]

16.　Finikov, T.; Sharov, O. Context of the European Higher Education Area. In *Monitoring the Integration of Ukrainian Higher Education System into the European Higher Education and Research Area*; International Foundation for Education Policy Research: Kyiv, Ukraine, 2014; pp. 10–24.

17. Andersone, R. The Content Reform of Education for Sustainable Development. *Rural Environ. Educ. Personal.* **2015**, *8*, 75–81.

18. Analysis of State Strategic Documents of Ukraine to Consider the Sustainable Development Goals for 2030 Adapted for Ukraine: Analytical Report. Available online: http://iser.org.ua/uploads/files/ISED_Report-UKR_Web_Final.pdf (accessed on 24 March 2017).

19. Voluntary National Review of the Sustainable Development Goals in Ukraine. Available online: https://me.gov.ua/Documents/Detail?lang=uk-UA&id=a0fc2a99-ada3-4a6d-b65b-cb542c3d5b77&title=DobrovilniiNatsionalniiOgliadSchodoTsileiStalogoRozvitkuVUkraini (accessed on 30 June 2020).

20. National Report "Sustainable Development Goals for Children of Ukraine". Available online: https://www.me.gov.ua/Documents/Detail?lang=uk-UA&id=5d858678-56dd-47a1-92fa-3e03166d9af2&title=NatsionalnaDopovidtssrDliaDiteiUkraini-ukrainskaVersiia- (accessed on 30 August 2019).

21. Mazorchuk, M.; Vakulenko, T.; Tereshchenko, V.; Bychko, G. *National Report on the Results of the International Survey on the Quality of Education PISA-2018 Ukrainian Center for Educational Quality Assessment*; Ukrainian Center for Educational Quality Assessment: Kyiv, Ukraine, 2019; p. 439.

22. Proposal of Indicators to Embed the SDGs into Institutional Quality Assessment. Available online: https://www.aqua.ad/system/files/sites/private/files/101_17-045_proposal_of_indicators_to_embed_the_sdg_into_institutional_q_assessment_digital_0.pdf (accessed on 29 March 2019).

23. QAA Education for Sustainable Development Guidance. Available online: https://www.qaa.ac.uk/quality-code/education-for-sustainable-development# (accessed on 29 March 2021).

24. Connecting Quality Assurance and the SDGs in Higher Education. Available online: https://copernicus-alliance.org/news-archive/232-connecting-quality-assurance-and-the-sdgs-in-higher-education (accessed on 19 February 2019).

25. Mulà Pons de Vall, I.; Junyent Pubill, M. *The Quality of Higher Education in Andorra and the Sustainable Development Goals: A Proposal for Quality Assessment Standards and Guidelines*; Complex Research Group, Autonomous University of Barcelona: Barcelona, Spain, 2018; p. 61. ISBN 978-99920-3-168-1.

26. QA Trends and Innovations. The European Association for Quality Assurance in Higher Education. Available online: https://www.enqa.eu/news/call-for-contributions-qa-trends-and-innovations/ (accessed on 2 October 2021).

27. National Agency for Higher Education Quality Annual Report: 2019. Available online: https://en.naqa.gov.ua/wp-content/uploads/2020/04/NAQA-REPORT.pdf (accessed on 15 March 2020).

28. Resource Centre for Sustainable Development of Vinnytsia Institute of Trade and Economics of KNUTE. Available online: http://www.vtei.com.ua/index.php/en/structure/centers/resource-centre-for-sustainable-development (accessed on 14 August 2021).

29. Sustainability Development Centre of Uzhhorod National University. Available online: https://www.uzhnu.edu.ua/en/news/cat/sust_dev (accessed on 14 August 2021).

30. Greening of the Planet Initiative Results Have Been Summed Up. Available online: https://www.uzhnu.edu.ua/en/news/Greening-of-the-Planet-initiative-results-have-been-summed-up.htm (accessed on 26 April 2021).

31. Integrated Courses within the Context of Sustainable Development. Dnipro University of Technology. Available online: https://mk.nmu.org.ua/en/sustainable_development/%D0%B4%D0%B8%D1%81%D1%86%D0%B8%D0%BF%D0%BB%D1%96%D0%BD%D0%B8_%D1%81%D1%82%D0%B0%D0%BB%D0%BE%D0%B3%D0%BE_%D1%80%D0%BE%D0%B7%D0%B2%D0%B8%D1%82%D0%BA%D1%83.php (accessed on 14 August 2021).

32. Resource Centre for Sustainable Development of Volodymyr Dahl East Ukrainian National University. Available online: https://snu.edu.ua/subdivision/resursnyj-tsentr-zi-stalogo-rozvytku/ (accessed on 14 August 2021).

33. Platform Green Lab. Available online: https://snu.edu.ua/u-snu-im-v-dalya-rozpochav-robotu-multyhab-greenlab/ (accessed on 14 August 2021).

34. Resource Center for Sustainable Development of Kyiv National Economic University named after Vadym Hetman. Available online: https://feu.kneu.edu.ua/ua/rcsr/?fbclid=IwAR3frOVE2sQJbCdOKteXll9b3wSdhe0J2YpHaNQ5akIwrqPcBADaK-fm6Ks (accessed on 14 August 2021).

35. Sustainable Development Goals of V. N. Karazin Kharkiv National University. Available online: https://www.univer.kharkov.ua/ua/general/tcili-stalogo-rozvitku (accessed on 14 August 2021).

36. Stukalo, N.; Lytvyn, M.; Petrushenko, Y.; Pylypenko, Y.; Kolinets, L. The concept of sustainable development of Ukraine in the context of global threats. *Naukovyi Visnyk Natsionalnoho Hirnychoho Universytetu* **2021**, *2021*, 178–183. [CrossRef]

37. Strategy 2025 Ukraine Catholic University (2021). Available online: https://strategy.ucu.edu.ua/ (accessed on 14 August 2021).

38. Development Strategy of Sumy National Agrarian University. Available online: https://snau.edu.ua/wp-content/uploads/2021/01/%D1%81%D1%82%D1%80%D0%B0%D1%82%D0%B5%D0%B3%D0%B8%D1%8F.pdf (accessed on 14 August 2021).

39. Development Strategy of V. N. Karazin Kharkiv National University. Available online: https://www.univer.kharkov.ua/docs/work/strategiya-rozvytku-universitetu-2019-2025-2.pdf (accessed on 14 August 2021).

40. Strategic Development Plan of Lviv Polytechnic Until 2025. Available online: https://lpnu.ua/2025 (accessed on 14 August 2021).

41. Educational Program "International Economic Relations". Available online: https://www.nmu.org.ua/ua/content/infrastructure/structural_divisions/science_met_dep/OPP%20bakalavr/292%20%D0%B1%D0%B0%D0%BA%D0%B0%D0%BB%D0%B0%D0%B2%D1%80%20%D0%9E%D0%9F%D0%9F-20.pdf (accessed on 25 June 2020).

42. Educational Program "Marketing". Available online: https://www.nmu.org.ua/ua/content/infrastructure/structural_divisions/science_met_dep/OPP%20bakalavr/075%20%D0%B1%D0%B0%D0%BA%D0%B0%D0%BB%D0%B0%D0%B2%D1%80%20%D0%9E%D0%9F%D0%9F-20.pdf (accessed on 25 June 2020).

43. Participation of Ukrainian National Forestry University Students in the International Project Special Week. Available online: https://nltu.edu.ua/index.php/home/novyny/item/969-uchast-studentiv-nltu-ukrainy-v-mizhnarodnomu-proiekti-special-week-2021,%20V4%20Green%20Universities%20(V4GU) (accessed on 8 May 2021).
44. Approved Standards of Higher Education of Ukraine. Available online: https://mon.gov.ua/ua/osvita/visha-osvita/naukovo-metodichna-rada-ministerstva-osviti-i-nauki-ukrayini/zatverdzheni-standarti-vishoyi-osviti (accessed on 14 August 2021).
45. Yuan, X.; Yu, L.; Wu, H. Awareness of Sustainable Development Goals among Students from a Chinese Senior High School. *Educ. Sci.* **2021**, *11*, 458. [CrossRef]