

Modeling cross-sector partnerships of creative industries in education for sustainable development through the integration of ESG principles

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Received: 02 May 2026; **Revised:** 18 August 2026; **Accepted:** 21 August 2026

ABSTRACT

The article systematizes indicators for measuring how far ESG transformation has progressed, presents the associated risks, and consolidates data on ESG factor evaluation. The scientific novelty lies in the authors' approach to designing formulas and a rating system for ESG indicators in educational institutions with due regard to the use of electronic devices in the educational process, the gap between men's and women's salaries, gender inequality among senior staff, and the share of young personnel. The research subject is the set of management characteristics of educational organizations that secure their sustainable development. The objective is to develop indicators for measuring ESG factors in education. The article presents information on when ESG factors began to be tracked across different sectors of the economy. The authors examine data from consulting firms and scholars on the ESG transformation of educational organizations and identify similarities and differences in ESG criteria between commercial organizations and educational institutions. The teaching and upbringing processes in higher education are split into educational and administrative activities and described in terms of external and internal drivers of educational processes, with environmental (green technologies), social (presence or absence of gender inequality, the modernity of the technologies used, the gradation of pay levels), and governance (corporate culture, image, the achievement of financial results) factors as their components. Specific features of the financing of environmental projects are identified. The article draws a parallel between ESG principles and the Sustainable Development Goals and highlights those SDGs that correlate with ESG factors.

Keywords: ESG, Sustainable development, Modern university, Education, Participants

Introduction

Modern educational institutions must comply with the sustainable development concept adopted at the UN Conference

on Environment and Development held in Rio de Janeiro in June 1992. They must also observe ESG principles (Environmental, Social and Governance), i.e. they must show how the organization takes care of the environment and how it works to cut the damage it causes. While general environmental issues across many sectors of the economy have been considerably studied, ESG compliance among educational institutions that are adopting green economy and sustainable development principles has remained outside scientific attention [1-12]. This article attempts to consolidate the ESG factors used to gauge progress toward the sustainable development concept and to ask how relevant the ESG experience of commercial organizations

Access this article online

Website: www.japer.in

E-ISSN: 2249-3379

How to cite this article: Nagymzhanova K, Sadykova A, Arystankyzy G, Amantayeva A, Zhumakassova G, Nurzhanova Z, et al. Modeling cross-sector partnerships of creative industries in education for sustainable development through the integration of ESG principles. J Adv Pharm Educ Res. 2026;16(3):129-34. <https://doi.org/10.51847/sPZFdfYHqj>

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actually is for educational institutions. Significant contributions to ESG research have come from Babaiev, Valerii & Klymenko, Natalia & Berlizova, Viktoriia & Tymokha, Denys (2025); Maslak, Oleksandr & Maslak, Tetyana (2026); Mistri, Ekta & Japee, Gurudutta (2025); Rottenbornová, Lucie & Tausl Prochazkova, Petra (2026); Paužulienė, Jurgita & Derkach, Vadym (2024); and Kryukov, I. & Kopytova, E. (2026), who view the ESG concept through the lens of corporate risk (**Table 1**) [13-18]. In our opinion, the above-mentioned risks reflect the design of the sustainable development concept split into three blocks (environmental, social, and governance) and capture various features of ESG factors. At the same time, ESG factors are examined only in their risk dimension as possible consequences of environmental, social, or governance problems. Current, risk-free activity gets less attention in science, and the wishes of management stakeholders across the environmental, social, and governance areas are also left out [12, 19-25]. Poddar, Avijit & Robu, Elena (2025) and Marwa, Soffa & Soesatyo, Bambang (2025) also emphasize business risks within the ESG transformation, though their position differs from the previous authors (**Table 2**) [26, 27]. The table presents a different set of factors for tracking ESG.

Table 1. Elements of the ESG concept

Concept block	Risks within the concept
Environmental	Energy efficiency and energy saving; investments and expenditures on environmental protection; emissions, waste generation, and waste disposal
Social	Employment, occupational health and safety; education; gender composition of staff; practices in relations with suppliers and customers; product responsibility, etc.
Governance	Company tax strategy; business ethics; audit and internal control; long-term strategy; risk management

Table 2. Factors for evaluating ESG components

Concept block	Factors to account for
Environmental	Environmental management system, water use, air pollution, waste, energy efficiency, climate change, land use, etc.
Social	Working conditions and safety, social support, staffing changes, human rights and discrimination, etc.
Governance	Respect for the interests of all stakeholders, development strategy, the level of transparency, sustainability governance, and the degree of disclosure of financial and non-financial information

On the one hand, the governance component of ESG factors runs through all three blocks. On the other hand, no concrete indicators are spelled out. What does energy efficiency mean, for example? It can be read as the energy efficiency of buildings (building energy codes) or as energy reuse, the reduction of greenhouse gas emissions, etc. Does social support mean

employee bonuses or a unified benefits package? Does the level of transparency mean transparent executive pay, or open access for supervisory bodies? Those questions stay open after reading the table. In our opinion, combining the two tables would more fully capture the factors and risks needed to assess how far a commercial organization has progressed toward ESG transformation.

The environmental component should account not only for the use of energy resources but also for waste processing and reuse. Furthermore, energy efficiency has to be read broadly: buildings, utilities, etc. Alongside scholars summing up organization progress toward sustainable development, rating agencies also aggregate the results of ESG factor use, drawing on open data and ranking companies by how far they meet specific ESG indicators, even though unified evaluation criteria have not been adopted and common ESG indicators have not been set yet. However, each of the three blocks of the sustainable development concept tracks the factors needed for ranking.

Table 3. A systematization of factors for measuring the level of ESG transformation

Concept block	Factors for measuring the level of ESG transformation
Environmental	Use of green technologies: the development of an environmental strategy for the enterprise that takes account of resource conservation and environmental damage (water-land-air). The economic aspect of the strategy: environmental protection expenditures relative to profit. The use of digital technologies and tools in operations
Social	Worker characteristics (sex, age, education level, etc.) and the social guarantee package available to them. Workplace safety and the availability of modern equipment
Governance	Modern management: corporate culture, risk management, time management, business reputation, and the company's transparency

Based on a comparative analysis of scientific work based on open data, this article puts forward a set of common factors for determining how far organizations have progressed in their ESG transformation (**Table 3**). Thus, this article attempts to systematize the main factors for measuring a commercial company's level of ESG transformation. Within the environmental block, the economic component plays a special role and can be expressed in monetary terms. The social block covers the sex-and-age structure, as well as the rights and guarantees of employees. The governance block calls for an analysis of how management decisions get made. Educational institutions are a specific kind of organization that does not treat profit as its main task. The social aspect of the ESG concept ties closely to the educational process: the interaction between teacher and learner aimed at mastering the discipline under study and producing changes in the individual qualities of the student. Applying the ESG concept in education looks both logical and timely, and it can be viewed from two angles: 1) the learning

environment, which includes the teaching process, the teacher, and the learners; 2) the administrative environment, which covers managerial and support staff, as well as other stakeholders (Table 4). Table 4 attempts to systematize the factors that apply the ESG concept inside an educational institution. Given the specifics of educational activity (a mixed organizational budget, a social component, a range of teaching methods), one circumstance can be partly called into question: the fact that female teachers significantly outnumber male teachers. When accounting for the use of electronic devices in place of paper, the source of electricity matters. If it comes from renewables or eco-batteries, it counts. Otherwise, it does not enter the analysis. An institution's image plays a major role in attracting applicants in big cities where universities compete hard, but in small regions this matters less. Shifts in the global economy leave their mark on adherence to ESG management principles. In many countries the environmental aspect is moving toward social support: more projects target vulnerable populations, which in turn affects other areas of life.

Table 4. Areas of ESG use in education

Concept block	Learning environment	Administrative environment
	1. Amount of sorted waste as a share of total waste. 2. Share of energy from renewable sources	
Environmental	1. Number of electronic devices available for student use in place of paper, relative to the total student count. 2. Eco-education activities. 3. Environmental pollution generated during the teaching process	1. Share of departments using electronic document management relative to the total number of departments. 2. Number of tools and materials in use that are made from recycled waste
	Absence of pay gradation within a single position based on a person's social status	
Social	1. Number of female teachers and women in leadership positions compared to the total number of teachers and the total number of leadership posts. 2. Availability of modern teaching equipment. 3. Interaction with higher levels of the organizational structure (chair, dean's office)	1. Number of women in leadership positions compared to the total number of leadership posts. 2. Availability of a benefits package. 3. Provision of modern office equipment. 4. Interaction with higher levels of the organizational structure (department, division, administration)
Governance	Omnichannel approach (interaction strategy)	

1. A student-side corporate culture in place. 2. Methods of management decision-making. 3. Organization of the educational process (meeting the current requirements of federal standards and programs)	1. A developed corporate culture. 2. Company image (media monitoring). 3. Open financial data (income–expenses, salaries, other reporting)
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Total environmental protection spending covers capital investments and current expenditures on environmental protection. Capital investments aimed at environmental protection and the rational use of natural resources include the cost of new construction, expansion, reconstruction, technical re-equipment, and the modernization of facilities, i.e. costs that raise the asset initial value and feed the organization's additional capital. In this regard, the financial load is redistributed between the state and business. A reorientation of the state budget may force a revision of the final goals of state projects and programs in this sector. We should highlight that neither the state nor business can address ecological matters in isolation. In our opinion, a country's residents must also be motivated to tackle environmental problems. Only joint effort delivers serious results in environmental work. None of this would be possible if the population did not receive proper education in schools, research bodies, and higher education institutions. Tax breaks for business, investments, and considered energy consumption have also produced positive results in the environmental sector. The social aspect shows up here too, in the form of benefits and guarantees. At the same time, ESG principles correlate with the Sustainable Development Goals [28-31], drawn up by the UN General Assembly in 2015 and on the agenda through 2030 as a plan for securing a sustainable future for all. The sustainable development concept brings together economic, social, and environmental aspects. Scholars sometimes treat ESG and sustainable development as equivalent. The factors listed above need to work systemically and in combination to deliver on the stated goals. Among the 17 global Sustainable Development Goals, those most relevant to public education and the ESG concept are quality education, gender equality, decent work and economic growth, eco-education, and partnership. Therefore, the article attempts to design indices and a rating system for non-quantifiable factors in order to analyze the level of ESG performance. The index system rests on parameters connected directly to the ESG blocks, in particular, those touching the environmental and social factors involved in educational activity [32]. The quality of the educational process depends directly on how modern the technical devices used in teaching are [33]. The number of electronic devices per learner is also worth tracking.

$$I_g = \frac{\sum G}{\sum St}, \quad (1)$$

where I_g is the electronic device index, %; G is the number of electronic devices used in teaching (the total covers both working

and non-working units), units; St is the number of learners (the total on a given date, including those expelled, transferred), persons. The electronic device index can be supplemented with indicators reflecting the substitution of paper materials by electronic devices and capturing the impact of teaching materials on learners' health and preparation [34]. This would capture part of the social impact effect.

Table 5. Degree of gender inequality among persons in leadership positions

Percentage ratio	Level of inequality
0-20	No inequality
21-33	Marked inequality
>33	Pronounced inequality

The management component shows up in the use of electronic resources to enable quick responses to resources, educational materials, etc. The use of information devices and computing speeds up the generation and transfer of knowledge. Gender inequality is a situation in which persons of different sex have unequal access to resources, opportunities, rights, and freedoms. It can show up in any sphere of activity, education included. The first and most obvious indicator for detecting inequality is a salary comparison between men and women in the same job group:

$$Iw = \frac{\sum Wf}{\sum Wm}, \quad (2)$$

where Iw is the income index, %; Wf is the average income of women in the organization within a single job group, tenge; Wm is the average income of men in the organization within a single job group, tenge. Exact salary figures are usually unavailable since this information is not always in the public domain (vacancy data can be compared, but it does not always carry salary information). In such cases, aggregated data from anonymous surveys should be used. Tracking the median salary and preventing rights violations on the basis of sex matters. The gender structure of the organization's leadership is also worth considering [35]. To build the table above, we drew on data from the Global Gender Gap Report 2025 prepared at the World Economic Forum, which reports that gender inequality worldwide has been closed by 69.3% to date. For **Table 5** on the degree of gender inequality among persons in leadership positions, we also used data from the UNDP and the Gender Inequality Research Laboratory at the University of Pittsburgh, which find that women hold less than a third of leadership posts worldwide. On the basis of these data, we built a three-level table for measuring gender inequality among the leaders of higher-education institutions. The percentage ratios reflect the expert data given in the World Economic Forum gender report. Staff turnover is a familiar value, calculated by dividing the number of employees who have left the organization by the average number of employees over the period and multiplying by 100%. This indicator carries particular weight in tracking young staff under the age of 30 because they are the driving force of any organization, educational ones included. They are the ones who

can introduce real changes in unit-level work and apply modern instruments and technologies in practice. This indicator also belongs to the social policy block, which is part of ESG. The environmental and social components could not function or even exist without effective management. The methods by which management decisions get made, and the way they transform with rapidly shifting realities, matter as much as ever. That holds both for environmental management and for addressing the social problems of work teams [36]. In education, such decisions are taken at the level of institutional leadership and the relevant ministries, which set the agenda for modern education.

Data from universities in Kazakhstan show that awareness of ESG principles among students and faculty sits at a medium to above-medium level. At Kazakhstani universities, participants recognize the value of adopting ESG principles, most often linking them to student projects and initiatives, environmental initiatives, and the integration of ESG into university curricula. Roughly 40% of participants (218 of 567) said they had taken part in ESG initiatives, while 60% had not. In other words, ESG activity is moderate and evenly distributed across Kazakhstani universities. The main difficulties respondents flagged concern shortages of information, resources, and motivation, which point to the need for systemic support and the development of cross-sector partnerships to advance sustainable development in education.

Conclusion

Building a green culture has become not just a trend but a global challenge. The educational sphere should naturally lay the foundation for eco-education. The article presents experience with environmental tools in different fields of activity. The index system put forward allows to calculate several indicators for studying ESG factors at an educational organization. Tracking these factors and comparing institutions makes it possible to see where a given institution stands in environmental, social, and governance terms.

Acknowledgments: None

Conflict of interest: None

Financial support: The article was written within the framework of grant funding AP26102707 Modeling cross-sector partnerships in educational creative industries to promote sustainable development with the integration of ESG principle.

Ethics statement: None

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