

Sustainable development of education as inclusive economic growth basis

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Abstract

The article considers the issue of sustainable development of education as a basis for inclusive economic growth. We present the analytical assessment of current and target values of the leading indicators of The Sustainable Development Goal 4 «Quality Education» (SDG 4). The main characteristics of dynamic processes of inclusive development in conditions of sustainable economic growth are given. The tasks and indicators of the CSB in education are presented, which are an informational, statistical, and analytical basis for monitoring the implementation of sustainable development in the context of ensuring inclusive growth of economic systems. The main stages of formation and integration of principles, values, and practical measures of sustainable development of education of all levels and types are presented. Ukraine traditionally has a high level of school enrollment and basic adult literacy. Still, there are some local gaps and imbalances in access to the Internet, computer and software, formal and non-formal education. Based on the analysis of current and target values of the main indicators of achieving SDG 4, the last decade has seen some positive changes. However, the armed confrontation only increased social tensions and population stratification, exacerbated by the global pandemic, so achievements were somewhat eliminated due to the systematic crisis. The quality of logistics is relevant for educational institutions, especially in rural areas, and significantly affects the economic, social, and territorial cohesion of newly created communities, limiting/expanding opportunities for inclusive growth. It is substantiated that increasing the cohesion and capacity of local communities to effectively solve a significant part of the existing problems of spatial development strengthens the inclusiveness of economic development. Systematic reform of the education sector is proposed, envisages updating education standards and bringing them to international levels to ensure equal access to such a social service as education for all citizens.

Keywords: sustainable development goals, SDG 4, inclusive growth.

Сталий розвиток освіти як основа інклюзивного зростання економіки

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Анотація

У статті розглядається питання сталого розвитку освіти як основи інклюзивного зростання економіки. Представлена аналітична оцінка поточних та цільові значення основних індикаторів досягнення цілі сталого розвитку 4 «Якісна освіта», наведено основні характеристики динамічних процесів інклюзивного розвитку за умов сталого зростання економіки. Наведено завдання та індикатори ЦСР у сфері освіти, які є інформаційною, статистичною та аналітичною основою для моніторингу імплементації сталого розвитку у контексті забезпечення інклюзивного зростання економічних систем. Представлено основні етапи формування та інтеграції принципів, цінностей та практичних заходів сталого розвитку освіти усіх рівнів та видів. Зазначено, що в Україні традиційно високим є рівень охоплення шкільною освітою та рівень базової грамотності дорослого населення, проте існують певні локальні розриви та диспропорції щодо доступу до мережі Інтернет, забезпечення комп'ютерними та програмними засобами, можливостей здобуття формальної та неформальної освіти. На основі аналізу поточних та цільових значень основних індикаторів досягнення цілі сталого розвитку 4 «Якісна освіта» підкреслено, що останнє десятиріччя відбулися певні позитивні зрушення. Проте через систематичні кризові явища, збройне протистояння, що тільки збільшили соціальну напругу та стратифікацію населення, загострені світовою пандемією, вони були децю еліміновані. Питання якості матеріально-технічного забезпечення є актуальним для освітніх закладів, особливо у сільській місцевості, та значною мірою впливає на економічну, соціальну та територіальну згуртованість новостворених громад, лімітуючи/розширюючи можливості інклюзивного зростання. Обґрунтовано, що підвищення згуртованості та спроможності локальних спільнот ефективно вирішувати значну частину наявних проблем просторового розвитку, посилює та інклюзивність розвитку економіки. Запропоновано системне реформування освітньої галузі, що передбачає оновлення стандартів освіти та доведення їх до міжнародних з метою забезпечення рівного доступу до такого соціального сервісу як освіта для усіх громадян.

Ключові слова: цілі сталого розвитку, ЦСР 4, економічне зростання.

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Introduction

Radical changes are needed in the global education system to meet humanity's new diverse and growing needs, exacerbated by the COVID 2019 epidemic and its consequences, the growing threat of armed conflict, unemployment, and the resulting social tensions. Although education alone cannot achieve sustainability, it is undoubtedly one of the critical tools for achieving inclusive economic growth. Therefore, radical reform of the content of education should include the transfer of knowledge gained from experience, as well as expand the skills and abilities needed to adapt and creatively respond to future changes, entirely consistent with the concept of sustainable development (Weizsäcker & Wijkman, 2018; Wamsler, 2020; Holfelder, 2019).

The UN and the international community have increasingly used the Sustainable Development Goals (SDGs) to promote priority objectives (Fukuda-Parr, 2014; Kroll et al., 2019). The Concept of SDGs was first proclaimed at the 2012 United Nations Conference on Sustainable Development in Rio de Janeiro. The main task was to develop goals to solve urgent environmental, political, and economic problems. The UN General Assembly approved the Decade of Education for Sustainable Development 2005-2014 (UNDESD), which launched the integration of principles, values, and practical measures for sustainable development of education at all levels and types (UNESCO, 2014). Such powerful work in the field of education was aimed at initiating changes in the behavior of citizens and, in the long run, future generations to create an economically integrated, viable, and socially just living space. Following the Decade of Education for Sustainable Development in 2014, UNESCO launched the Global Program of Action (GAP) to stimulate global efforts in education for sustainable development, particularly the Sustainable Development Goal 4 «Quality Education» (SDG 4) on Agenda 2030. Achieving the SDGs is implemented by performing clearly defined tasks for each goal, which in turn is monitored through the control of certain indicators, their comparison with the planned values. The implementation of these tasks are markers on the roadmap for achieving the SDGs and serve as a basis for inclusive growth of economic systems. It is worth noting that education is in fourth place among the 17 possible development priorities until 2030. Today, the implementation of the 2030 Agenda is somewhat complicated given the epidemiological situation in the world.

Therefore, in 2020, as the COVID 19 pandemic spread across the globe, most countries announced the temporary closure of schools and educational institutions, impacting more than 91 %. Approximately 1.6 billion children and youth were out of school, nearly 369 million children who rely on school meals needed to look to other sources

for daily nutrition (United Nations, 2020). In order to protect children's well-being and ensure equal access to continued learning, UNESCO launched the COVID 19 Global Education Coalition, a multi-sector partnership between the UN family, civil society organizations, media, and IT partners to design and deploy innovative solutions. In cooperation, they help countries tackle content and connectivity gaps and facilitate inclusive learning opportunities for all society members during this period.

Global sustainable development goals could be determined as a policy tool. The mechanisms that have governance and knowledge effects lead to both intended and unintended consequences in influencing international development strategies and activities aimed at balanced and inclusive economic growth achievement (Fukuda-Parr, 2014). Inclusive growth could be defined as a pro-poor increase in social opportunities and examine what is included in social opportunities (access to health or education) distributed based on income and how this distribution changes over time. We can affirm that the higher the quality of education of the people in an area, the more the area will increase the opportunities to achieve inclusive growth towards inequality (Satrio et al., 2019; Findler et al, 2019; Lewis et al, 2019).

Georgescu M. and Herman E. substantiated that achieving highly productive employment is a serious challenge facing inclusive and sustainable development. Accordingly, economic growth and development, competitiveness, and living standards within an economy depend on labor productivity, and workers are more productive if they work with better equipment and are more efficient if they benefit from education and training (Georgescu, 2019). That is why ensuring sustainability in education is crucial for achieving inclusive development.

To support the EU's economic growth potential and its social models to smart, sustainable, and inclusive growth transformation the quality of our education improvement, research performance strengthening, innovation, and knowledge transfer promotion, making full use of information and communication technologies and ensuring that innovative ideas can be turned into new products and services that create growth, quality jobs and help address European and global societal challenges are required (Strategy 2020, 2010). Recognizing the risk that the SDG agenda may go the same route as the sustainable development discourse – that priority will go to economic growth over social and economic goals Gupta J. and Vegelin C. surveyed the SDGs to assess how well they represent inclusive development. Social floors include Goal 4's focus on inclusive and equitable education through universal completion of primary and secondary education, access to pre-primary

education, and opportunities to enhance vocational and lifelong learning by 2030 (Gupta, 2016).

Clustering education (SDG 4) and the innovation component of SDG 9 are recognized as the life-long nature of education and its importance in fostering innovation. Furthermore, these issues are critical to facilitate the generation of new knowledge, technologies, and approaches to the unprecedented challenges the SDGs are intended to address (Lim et al., 2018; Raitskaya & Tikhonova, 2021). Leverage points for sustainability implementation focus on transformational «sustainability interventions», centered on restructuring institutions and rethinking how knowledge is created and used to pursue sustainability in education were proposed by Abson D. and others (2017). Quental N. et al. (2011) revealed the main developments and cycling patterns of political activity concerning sustainable development and at identifying the most important sustainability goals and targets, including the SDG 4 that shifted the attention of the international community to economic growth as a solution for poverty and social inequalities that was thought to be compatible with sustainable and inclusive improvement.

The empirical evidence of the influence of investment in education and training on such macroeconomic indexes, as the unemployment rate, GDP, lifelong learning, the medium wage for the EU countries, have been studied by Yarime & Tanaka, (2012); Manafi & Marinescu (2013) performed a cluster analysis for EU members using some macroeconomic indexes and found that the countries invested in sustainability were more homogenous and stable during the crisis and are more likely to perform inclusive growth. The possibility of applying such an approach to countries with developing economies and less developed education systems remains unexplored and may be the subject of further research. Kates R. et al. (2005) believe that according to many sustainable development stakeholders, each with different definitions of indicators lists, definitional differences are downplayed in reaching a standard set of indicators. Thus, the range of indicators becomes very broad to be inclusive, so most existing sustainable initiatives represent less inclusive research or advocacy groups who share a more narrow and homogenous view of sustainable development. Thus, there is an urgent need to unify sustainable development indicators, especially about inclusive development and the area of fair provision of social services, especially education.

Beugelsdijk S. and Schaik T. (2005) studied the issues of regional differences in economic growth and their relation to social capital, the core of which is the educated population, in the form of generalized trust and social cohesion. Zinchuk T. et al. (2018) determine the implementation of smart and inclusive development ideas that will

ensure sound conditions for the participation of all categories of rural society in socio-economic transformations and multiply the value of human and social capital, its ability to effectively use the endogenous potential of rural areas and produce competitive goods and services as one of the most significant preconditions for sustainable development of the rural economy of Ukraine. However, this approach ignores the issues of rural population equal access to formal and non-formal education, creating a specific information structure and educational space.

Though value creation and productivity improvement remain the basis of economic growth and competitiveness for certain countries, reviewing the bonds' nature between the economic, social, and environmental dimensions of sustainable competitiveness is essential. Sustainable economic growth, which enables a continual standard of living, depends on finding a balance between economic progress and social and environmental sustainability (Despotovic et al., 2016; Aikens et al., 2016; Masterson et al., 2017). The authors conducted a thorough study on the economic, social, and environmental dimensions of sustainable competitiveness of European countries. However, not enough attention has been paid to addressing quality and affordable education corresponding to SDG 4 implementation. In case of inclusive economic growth, sustainable and long-term life improvement of all population segments would be ensured, which stimulates not only the acceleration of GDP growth but also state regulation aimed at subsidies redistribution and targeted use of public investment on social infrastructure networks, education, and health systems, cultural and personal development expansion (Chaikin & Usiuk, 2019; Chaikin, 2020). The creation of added value and the further equitable distribution of wealth and social benefits, such as education and access to it, should become the basis for ensuring the inclusive development of both individual territories and the state.

Methods and Materials

The methodological basis of the research is general scientific and specific methods of economic phenomena and processes cognition. Therefore, the following methods have been applied: monographic (while the recent research on sustainable development of education as inclusive economic growth catalyst study); logical generalization (while the current situation on SDG 4 indicators achievement and inclusive development prospects issues defining); economic and statistical (when current and target values of the main SDG 4 indicators achievement analysis conduction); abstract-logical (the SDG 4 study achievement data interpretation); graphic (for visual presentation of sustainable development of education as a basis for inclusive economic growth indicators planed

change); heuristic (when key scientific and research findings generalization and highlighting the future research area).

Results

Ensuring quality education and equal access to it throughout life combines several important vectors of educational development – quality, equity, accessibility, involvement, and comprehensive encouragement, which is consistent with the principles of inclusive economic growth. In Ukraine, the adult population's level of school enrollment and basic literacy is traditionally high. There are no significant social or gender inequalities in all educational levels and areas. However, there are some local gaps and imbalances in access to the Internet, the provision of computer and software tools, and opportunities for formal and non-formal education. Particularly acute gaps are observed in rural areas. It should be noted that at the present stage of development of the domestic economy, increasing the availability of educational training is due to reducing the quality of educational services in some institutions and while maintaining the deformation of the infrastructure of the educational system. Currently, the socio-economic problems caused by the commercialization of education are significantly exacerbated, and the areas of «educational inclusion» and «lifelong learning» are still in their infancy.

At present, taking into account the generally accepted principles and approaches to the

implementation of sustainable development and using a wide range of information, statistical and analytical materials, a national CSD system (86 national development tasks and 172 indicators for their monitoring) has been developed – inclusive growth of the country and systematic monitoring of the state of achievement of the SDGs. In particular, some tasks (7) and indicators (11) of the national system relate to SDG 4 (Tab. 1).

During 2016 the Ministry of Economic Development and Trade of Ukraine initiated and coordinated the inclusive discussion of the SDGs by the following groups: equitable social development; sustainable economic growth and employment; effective, accountable and comprehensive governance and justice for all; ecological balance and building sustainability. Given the significant changes that have taken place during the years of independence and the formation of market relations in the country, which required radically new approaches to the system of strategic planning of economic development in response to which the SDGs was adapted, we can conclude that there have been some positive developments. 2). However, frequent crises, armed confrontations, social tensions, and stratification, exacerbated by the global pandemic, somewhat eliminate these positive trends.

Today, despite the legally declared equal rights to preschool education and the growing demand for this type of educational service, the level of

Tab. 1

Objectives and indicators of achieving the SDG 4

Targets	Indicator
Ensure access to quality school education for all children and adolescents	Share of population satisfied with the availability and quality of school education services,%
Ensure the availability of quality preschool development for all children	Net indicator of coverage of children aged 5 years by preschool educational institutions,%
Ensure access to vocational education	Proportion of households suffering from lack of funds to receive any vocational education for a family member,%
Improve the quality of higher education and ensure its close connection with science, promote the formation of cities of education and science in the country	Ukraine's place in the Global Competitiveness Report in the field of "higher education"
	Number of university cities, units
Increase the prevalence of knowledge and skills needed for decent work and entrepreneurship	Level of participation of adults and youth in formal and non-formal education and training for the last 4 weeks,% of the population aged
	15-70 years
Eliminate gender inequality among school teachers	Proportion of the population that reported using the Internet in the last 12 months,%
Create modern learning conditions in schools, including inclusive, based on innovative approaches	Share of men among school teachers,%
	Share of rural full-time secondary schools with Internet access,%
	Share of rural full-time secondary schools with computer software,%

Source: designed according to the data of Ministry of Economic Development of Trade and Agriculture of Ukraine

Tab. 2

Current and target values of the leading indicators of achieving the SDG 4

Indicator	2015	2020	2025	2030	2030 to 2015	%
Net indicator of coverage of children aged 5 years by preschool educational institutions,%	70.6	80.0	90.0	95.0	24.4	34.6
Proportion of households suffering from lack of funds to receive any vocational education for a family member,%	7.6	7.0	6.0	5.0	-2.6	-34.2
Number of university cities, units	7.0	10.0	12.0	14.0	7.0	100
The level of participation of adults and youth in formal and non-formal education and training for the last 4 weeks,% of the population aged 15-70	9.2	10.0	12.0	14.0	4.8	52.2
Proportion of the population that reported using the Internet in the last 12 months,%	48.9	59.0	70.0	80.0	31.1	63.6
Share of men among school teachers,%	14.7	17.0	20.0	25.0	10.3	70.1
Share of rural full-time secondary schools with Internet access,%	81.6	85.0	90.0	95.0	13.4	16.4
Share of rural full-time secondary schools with computer software,%	60.5	65.5	70.0	80.0	19.5	32.2

Source: calculated according to the data of Ministry of Economic Development of Trade and Agriculture of Ukraine

coverage of children with preschool education remains unsatisfactory. Based on open data, in 2015, only 77.4% of urban and 57.4% of rural five-year-olds attended preschool. Furthermore – 17.8 thousand rural settlements inhabited by children under six years of age, which is 66% of the total number of such settlements, do not have preschool educational institutions at all. Lack of kindergartens, overcrowding, lack of proper infrastructure, obsolete material and technical base, practical lack of alternative forms of school preparation, high cost of services in the private sector – all this negatively affects the social cohesion, exacerbates social and economic gaps, causes imbalances individual territories, worsens the chances of a significant part of citizens to obtain «equal starting opportunities», which limits the opportunities for inclusive and sustainable growth of the economy as a whole.

In order to ensure reasonable, sustainable, and inclusive growth of the country's economy, it is necessary to fully implement the declared accessibility of all educational services, ensure their quality, create equal conditions of development and education for all citizens regardless of social status, health, residence, and level of income.

Currently, the pedagogical and scientific-pedagogical staff is not fully provided with some subjects, primarily such areas of knowledge according to the International Standard Classification of Education as Natural Sciences, Mathematics and Statistics; Information and Communication Technologies; Engineering, Manufacturing, and Construction (International Standard, 2015). In addition, currently, the issue of

ensuring gender balance among educators remains acute; for example, the share of men among school teachers in 2015 was only 15% (Fig. 1).

The implementation of the concept of continuing education, which meets the requirements of sustainable development, requires increased participation of the population, especially those who are in the zone of social risks, in formal and non-formal education programs. Currently, the level of participation of adults and youth in formal and non-formal education and training is less than 10% (Fig.2).

The quality of logistics remains a significant problem in education, primarily due to insufficient levels of modern educational infrastructure (Internet access, computer, and software, technology parks, equipped offices, laboratories, educational clusters according to the needs of each region). In addition, most educational institutions of all levels do not have modern special laboratory equipment and have no more and use materially and technically outdated equipment.

First, this issue is relevant for educational institutions in rural areas, negatively affecting the economic, social, and territorial cohesion of newly created communities, limiting the opportunities for inclusive growth of these areas. Thus, as of 2015, the share of rural full-time secondary schools with Internet access was only 82%, and the share of rural full-time secondary schools with computer software was 61% (Fig.3). GDP growth does not guarantee non-economic goals of sustainable development and does not reflect the fair distribution of social goods and services. For current conditions of growing social contradictions, new global challenges

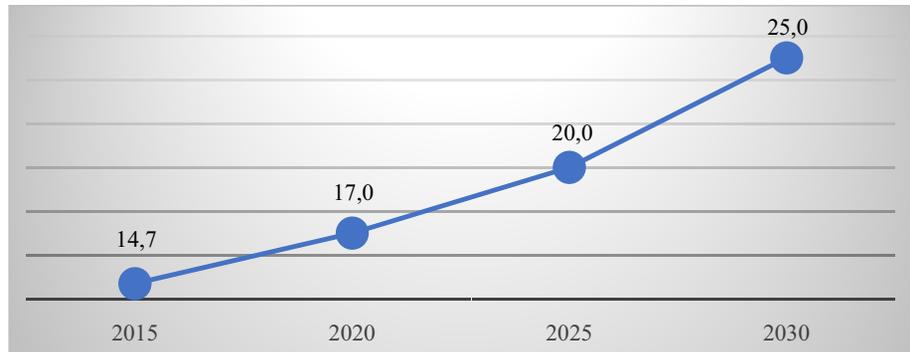


Fig.1. The share of men among school teachers, %

Source: designed according to the data of Ministry of Economic Development of Trade and Agriculture of Ukraine

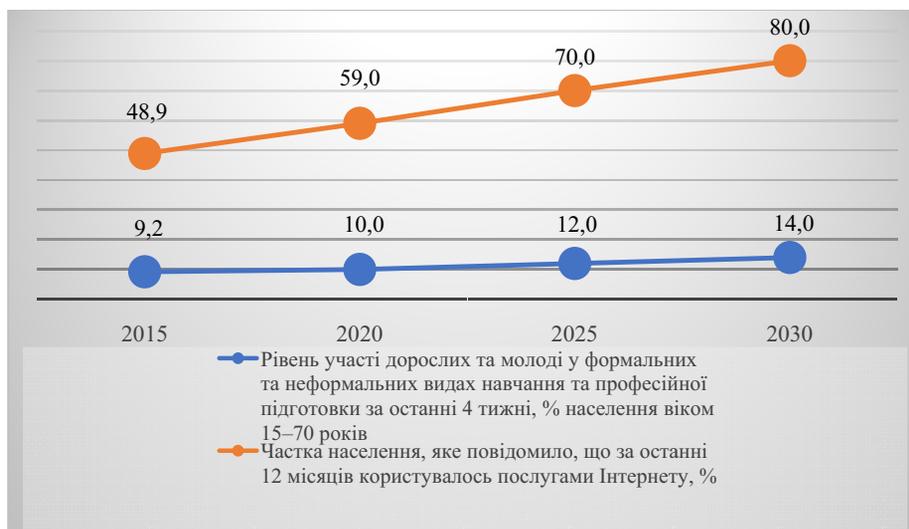


Fig. 2. Indicators of self-education of the population in accordance with the SDG 4

Source: designed according to the data of Ministry of Economic Development of Trade and Agriculture of Ukraine

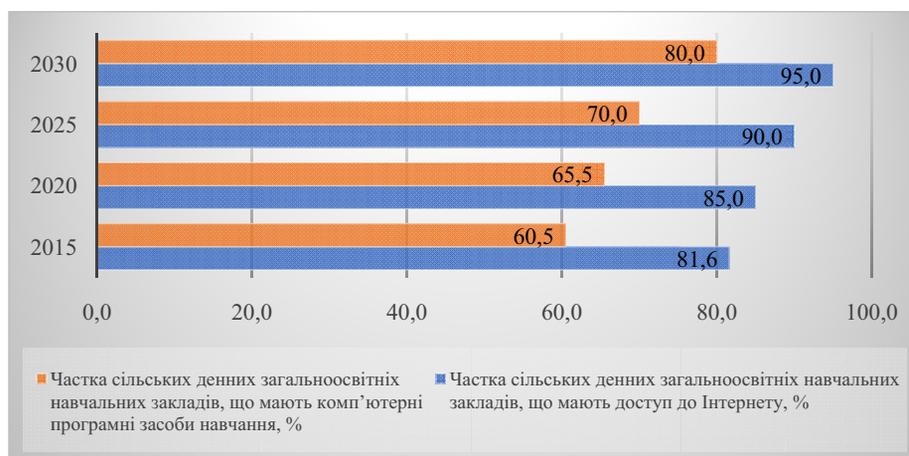


Fig. 3. Access to education for the rural population in accordance with the SDG 4

Source: designed according to the data of Ministry of Economic Development of Trade and Agriculture of Ukraine

emerge, such as the COVID 2019 epidemic and its consequences, growing threats of armed conflicts caused by social incoherence, unemployment, the desire of several EU countries for strategic autonomy, strengthening the interdependence of all participants and components of the world economic system are unacceptable. We can say that the current development of the domestic economy is a socio-economic system that limits equal access to social services and opportunities, including in education, and to the fair distribution of wealth, which slows down and in some regions makes it impossible to ensure sustainable and balanced development. Thus, the most urgent task is to accelerate the modernization of educational institutions at all levels, especially in rural areas, concerning their connection to the Internet and computer software for learning and communication.

In the developed world, such traditional economic and geographical factors of regional competitiveness as the availability of natural, labor, and energy resources and the quality of accumulated material capital are losing importance for the sustainability and inclusiveness of spatial development. Increasing the cohesion and capacity of local communities to effectively address a significant part of the existing problems of territorial development strengthens the inclusiveness of local economies. Under such conditions, involvement in the formation, production, and distribution of results of all community members increases, and the sense of responsibility for this result increases, which in turn ensures greater cohesion of community members and forms a strong unity around shared interests in achieving sustainable development goals.

Discussion and Conclusion

This study illustrates the effectiveness of public policy and its impact on the dynamic processes of achieving the CSB, particularly in education. Ensuring equal access to such social services as education can increase the cohesion and capacity of communities and reduce stratification gaps and disparities, which will be essential to inclusive growth in both individual territories and the economy. To achieve the SDG 4, it is necessary to systematically reform the education sector, which involves updating education standards, bringing them to be international, including European; ensuring equal access to such social services like education and vocational training for citizens regardless of social status, health status, place of residence and income level. Further research will be aimed at economic and mathematical modeling of changes in the dynamics of key indicators of achieving sustainable development goals, determining their interdependence, and forecasting the impact of sustainable education on the inclusiveness of economic growth.

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