

Strengthening Educational Partnerships for Sustainable Economic Development in Africa

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Abstract—The quality of education, particularly the cognitive skills produced by educational systems, is proven to be the best predictor of economic growth (Hanushek & Woessmann, 2015). In Africa, where 60% of the population is less than 25 years old (African Union/OECD, 2024), the correlation raises pertinent questions regarding the role of educational policies in ensuring sustained economic growth: Africa's demographic bonus cannot be transformed into sustainable development unless its educational systems deliver graduates competent to fuel productive economies. Partnerships involving collaboration between governments, educational systems, private sector employers, international organizations, and civil society have been suggested as the best institutional approach towards this objective. However, according to World Bank (2024a), while the GDP growth in Africa is positive, it is still insufficient to employ the growing number of the workforce or alleviate poverty; according to ILO (2024), over half of the Sub-Saharan Africans continue working in vulnerable employment conditions; according to UNESCO (2023), enrolment expansion has not improved learning quality in Africa. A systematic scoping review was conducted following the PRISMA 2020 framework (Page et al., 2021), synthesizing evidence from 38 verified sources, including institutional reports from the World Bank, African Development Bank, African Union/OECD, UNESCO, UNICEF, ILO, IMF, GPE, ITU, TIA, AVU, UNILAB, and EAC, and peer-reviewed works, published 2010–2025. The study is grounded in Becker's (1964) Human Capital Theory and Brundtland's (1987) Sustainable Development Theory, both applied analytically throughout. Findings confirm a diverse partnership landscape but reveal that most models are constrained by curriculum misalignment with labour market needs, donor dependency, inadequate monitoring, and exclusion of the 80–85 percent of Africa's workforce in the informal economy (ILO, 2024). The study's contribution lies in shifting analysis from whether partnerships matter to how specific partnership designs generate or fail to generate educationally effective and economically sustainable outcomes, and in proposing the institutional

architecture, employer curriculum co-design, domestic co-financing, and accountability, that makes this possible.

Index Terms—educational partnerships, human capital, sustainable economic development, Africa, TVET, university–industry collaboration, systematic scoping review, SDG 4, SDG 8

I. INTRODUCTION

Among the most solid findings in social science research is the connection between education and economic development. In their comprehensive review of empirical evidence on more than 50 countries over a period of fifty years, Hanushek and Woessman (2015) find that rather than the quantity of education provided in terms of years of schooling or enrollment rate, it is the quality of skills acquired from educational systems that drives economic growth in the long run. This study found that one-standard deviation increase in cognitive skill levels of a country is linked to approximately two extra percentage points of GDP growth per year – independent of other factors affecting growth, holding up at all levels of income and geographical location. For Africa, where economic transition towards diversified economies is still far from complete and where informal sectors account for a significant proportion of the labor force, the finding suggests the most important lesson that quality and relevancy of education make the difference between success and failure.

The demographic situation within Africa makes such a challenge even more pressing. It has the youngest population in the world, about 60 percent of whom are under 25 years old, and by 2050 it will represent one-quarter of the total global labor force (African Union/OECD, 2024). According to calculations by the AfDB (2024), Africa would have to generate 15-20

million jobs per year in order to absorb an increasingly large pool of labor. However, skills mismatch in the form of shortages in technical, digital, and entrepreneurial skills was found by ADEA (2024) to be the major factor constraining business expansion and productivity improvements. The result is that there is a structural contradiction between graduate unemployment and skills shortage by employers.

Education partnerships have emerged as the most important institutional approach to dealing with this issue of mismatch. This institutional approach is theoretically underpinned by Human Capital Theory, which was postulated by Becker (1964) to mean that education yields returns as long as it is geared towards productive skills acquisition and Sustainable Development Theory postulated by Brundtland (1987), which mandates that educational systems ensure institutional development and serve current and future generations fairly. From a policy point of view, the African Union and OECD (2024) highlight expanded education partnerships as key to bridging Africa's \$194 billion sustainable development financing shortfall annually and ADEA (2024) has emphasized education partnerships as a key pillar of Africa's Year of Education commitment for 2024.

However, many key questions concerning the effectiveness of these partnerships for Africa's education sector continue to remain unanswered. Most existing literature is either fragmented depending on each country setting or concentrated on issues relating to access such as enrollment figures and availability of infrastructure while ignoring the issue of quality of education and economic returns from investing in education. This research fills this gap by conducting a structured review on current African education partnership models and how they have performed in relation to measurable economic standards, as well as ways in which they can be improved in order to contribute to sustainable economic development.

II. STATEMENT OF THE PROBLEM

The education sector and partnerships thereof in Africa function against a background of structural economic difficulties. According to World Bank (2024a), Sub-Saharan Africa recorded positive economic growth of GDP by 3.3% to 3.6% per year from 2022 to 2024, while East Africa's economies, especially those of Ethiopia and Kenya, performed

much better. Nevertheless, it is demonstrated by ILO (2024) that this growth was not enough to absorb a labour force that grew by approximately 2.7% annually, reduce the number of people living below the poverty line, or create sufficient formal jobs. It is stated in the ILO (2024) report on World Employment and Social Outlook that about 57% of Sub-Saharan African workforce population still works in vulnerable employment or in subsistence, informal or unpaid family work. This percentage has not changed in the last decade although significant investments have been made into education. Youth unemployment stands at a high rate of 59.6% in South Africa, while youth unemployment is structurally high in the Maghreb region too (Stats SA, 2024; ILO, 2024).

The above effects can hardly be linked to the poor investments in education alone. According to UNESCO (2023), on average, African governments spend about 17 percent of their public spending on education, which is quite similar to the levels observed in many rich countries. The Global Education Monitoring Report (2023) highlights that the majority of primary schoolchildren in many countries in Africa fail to meet the minimum requirements of literacy and numeracy. The regional assessment done by SACMEQ in 2019 and PASEC in 2021 validates the low-quality learning experienced in many schools in Africa. The link between poor quality of education and economic development is evidenced by cross-country studies done by Hanushek and Woessmann (2015).

A wide variety of partnerships in education exists in Africa as a solution to this challenge: research partnerships between universities and industries, government-NGO partnerships on school construction and teacher training, TVET-private sector partnerships, South-South institutional partnership, and digital learning partnerships. However, according to ADEA (2024), most of these partnerships are donor-dependent and lack external funding sources, which raises sustainability issues during project lifetimes. As pointed out by African Union/OECD (2024), weak monitoring and evaluation frameworks make it almost impossible to distinguish successful models from unsuccessful models. UNESCO (2023) reports the persisting challenge of the curriculum mismatch issue, where the curriculum offered does not provide the required skills for employment and hinders the economic value of the credential received. This means that the problem being addressed by this study is not

the existence of partnerships but the poor design and alignment of such partnerships.

The study is guided by four research objectives:

1. To examine the current landscape of educational partnership models operating across Africa and their stated educational and economic objectives.
2. To assess how existing educational partnerships are performing against sustainable economic development indicators, identifying documented successes and structural performance gaps.
3. To analyze the theoretical implications of the evidence for Human Capital Theory and Sustainable Development Theory as frameworks for educational partnership design.
4. To recommend evidence-based reforms to strengthen educational partnerships as drivers of sustainable economic development, derived directly from the study's findings.

III. THEORETICAL FRAMEWORK

3.1 Human Capital Theory (Becker, 1964; Hanushek & Woessmann, 2015)

According to Becker's (1964) theory of Human Capital, education and vocational training are forms of investment in the productive abilities of people that create value on individual and social levels. Individually, investment in skills leads to higher earning power through higher productivity as well as opportunities for engaging in more valuable occupations. Socially, increases in human capital translate into increased total factor productivity, innovations, economic diversification, and faster GDP growth. The theory makes a clear distinction between general human capital, which consists of transferable skills like literacy, numeracy, and reasoning abilities, and specific human capital, which refers to technical skills that are highly valuable in particular economic sectors. The distinction has direct implications for partnership assessment because some TVET-private sector partnerships will create high-value human capital within specific economic sectors, while others will create general human capital.

Hanushek & Woessmann (2015) offer the most extensive empirical development of the Human Capital theory using the knowledge capital approach by showing that what counts in explaining variations in national economic growth is not the amount or years

spent on education but the quality of cognitive skills. This empirical foundation underlines the main research prediction that emerges from it, namely that successful partnerships which have ensured a clear link between educational provision and labour market needs, resulting in production of graduates who possess desired cognitive and technical skills by employers, should outperform other partnerships which focus on mere access or infrastructure improvements without ensuring quality improvements.

3.2 Sustainable Development Theory (Brundtland, 1987; UN SDGs 4 and 8)

According to Brundtland (1987), Sustainable Development Theory views sustainable development as satisfying current requirements without affecting future generations' ability to satisfy their own requirements by considering economic growth, social justice, and environmental protection as equally important goals. In relation to educational partnerships, conditions that differentiate a sustainable model from an unsustainable one include local capacity building and not external substitution, long-term planning related to institutional changes as opposed to donors' project time lines, equal opportunity irrespective of gender, geography, and economic status, as well as the incorporation of economic, social, and environmental factors into the process of educational development. The two UN Sustainable Development Goals relevant to this research are SDG 4, which relates to quality education for everyone, and SDG 8, decent work and economic growth.

Applying this theory to Africa results in an unequivocal prediction. Partnerships that are characterized by financing from external parties, short-term project durations, an emphasis on the formal sector, and insufficient equity impact are not expected to result in sustainable improvement in education or economic development. The above prediction, when tested in light of evidence presented in Section 6, becomes the basis for evaluation in Section 8.

3.3 Theoretical Synthesis: The Compound Analytical Framework

In fact, Human Capital Theory and Sustainable Development Theory are complementary rather than contradictory theories. Human Capital Theory gives

the means: the investment in skills in accordance with the labour market needs will lead to increased productivity, whereas Sustainable Development Theory provides the institutional framework in which such means can be implemented sustainably: ownership at local level, long time horizon of thinking, equity of reach. These two theories together create a combined analytical hypothesis which structures the entire study: educational partnerships will lead to sustainable economic development according to the degree to which they combine the alignment of educational content with productive labour market needs (Human Capital Theory condition) and their institutional embedding which guarantees ownership at local level, equity of reach and long-term sustainability (Sustainable Development Theory condition). Partnership activities meeting only one condition result in a limited and transient impact, whereas those not meeting any of the conditions simply provide educational activities but no economic development.

IV. LITERATURE REVIEW

4.1 Education Quality, Skills, and Economic Development

The evidence that shows how educational quality, in particular cognitive skill levels instead of enrollment or expenditure, influences growth is found in the literature of Hanushek and Woessman (2015). They find that a 25-point improvement in the international test scores of cognitive skills leads to a 1% improvement in GDP growth per year. Thus, this is a challenge to the traditional focus of the policy which is expansion in enrollment. Instead, attention shifts to the fact that the system provides productive competencies that can be used in economic activities. As per the findings of the World Bank (2024a), despite being positively growing economically, Africa has been unable to create proportional job opportunities in formal sector as well as reduce poverty. The latter issue can be attributed partly to the mismatch of skills that educational system provides and what the labor markets demand as per AfDB (2024).

Here is direct evidence provided by UNESCO (2023) on how this mismatch plays out in education: despite large investments of public budgets into the education sector in Africa, assessment studies conducted regionally (SACMEQ, PASEC) and by UNESCO

show that in many countries, most graduates from primary education lack basic literacy and numeracy skills. Not only is this issue related to inequalities in education, but it represents the actual reason why educational investments fail to deliver human capital that drives economic development according to Hanushek and Woessmann (2015).

4.2 Educational Partnership Models: Evidence from Across Africa

The university-industry collaboration model in Africa has been successful when such collaborations entail more than just financial assistance but actual co-development of the curricula to reflect what industries need. AfDB (2024) cites the case of Morocco's co-development of vocational education and higher education through its automobile and phosphate sectors as an example of how such collaboration could bring about productivity improvements. According to TIA (2024), the agency has facilitated university-industry collaborations in South Africa for joint research and development. The skills mismatch is identified by IMF (2025) as one of the structural constraints of growth in South Africa.

TVET-private sector partnerships have the most direct theoretical alignment with Human Capital Theory's skills-productivity mechanism. ILO (2024) confirms in its World Employment and Social Outlook that TVET aligned with employer needs is the modality most consistently associated with formal employment generation in low- and middle-income countries. ADEA (2024) documents Senegal's ICT skills partnerships as an example of TVET-private sector co-design in a lower-income African context, noting the program's contribution to ICT sector growth. The common design feature across effective TVET partnerships, identified by ILO (2024), is employer participation in defining training content, not merely funding it.

Government-international agency partnerships dominate African educational investment by volume. GPE (2023) documents approximately USD 700 million disbursed to African education systems between 2021 and 2024. UNICEF (2021) documents emergency education provision across conflict-affected contexts. But UNESCO (2023) gives an important rebuttal: despite all this expenditure, learning problems still remain, thereby proving that partnerships oriented towards improving access,

without elements of quality improvement, produce no human capital dividends for economic development. In South-South Cooperation, a unique type of partnership is represented by knowledge sharing among partners. According to UNILAB (2023), Brazil has established institutional partnerships with Lusophone Africa via establishment of University for International Integration of the Afro-Brazilian Lusophony, thus making African educational knowledge co-produced instead of delivered. Another example is presented by EAC (2021), that suggests higher education harmonization strategy to ensure qualifications recognition of graduates and thus their mobility.

The fastest-growing type of partnership according to AVU (2023) and ITU (2023) is the digital learning partnerships. According to ITU (2023), by 2023 Sub-Saharan Africa saw the growth of its internet penetration to approximately 43 percent; however, it continued growing quickly although the rural penetration remained at 15 percent and lower. This is why digital learning partnerships are highly scalable in an urban setting while systematically excluding those who actually need education.

4.3 Identified Gaps the Study Addresses

These three important shortcomings provide impetus for the current research. The first one pertains to the geographical scope of research which mainly covers few African countries, while there is hardly any rigorous evidence concerning partnerships in the region of Central Africa, Sahel or poor East African states. The second one refers to the fact that existing studies rarely use objective criteria measuring impact of partnerships on economic performance and employment and productivity levels, but rather rely on education-related criteria, such as volume of training, enrollment etc. which cannot measure human capital creation. The third one concerns the absence of any comprehensive reviews of existing empirical research considering all five types of educational partnerships in question.

V. METHODOLOGY

5.1 Research Design and Epistemological Positioning

In conducting the current study, the approach adopted is scoping review as defined in PRISMA guidelines for scoping review by Page et al., (2021). A scoping

review was chosen in preference to systematic review with meta-analysis owing to the nature of the research question that calls for a mapping of the evidence in terms of its extent and diversity in various partnership types, different countries and different outcome types – an exercise that calls for convergent thematic synthesis of data rather than statistical synthesis among studies that are quite diverse in nature.

The epistemological standing of the findings of this research needs to be clarified properly. All quantifiable results such as GDP growth rates, poverty estimations, employment numbers, and programmatic result numbers provided in the tables and analyzed in the subsequent parts are taken from identified secondary sources and attributed appropriately through citations. These are evidences generated after analyzing the institutional documents and evaluations, not empirical findings of this research itself. When the evidence generated in the secondary sources shows a relationship between the activities performed within the educational partnership program and economic results, it will be cited as such without assuming any causality. The consistent adoption of this practice of using associational statements over causal ones should be regarded as a requirement for secondary analysis studies rather than its weakness.

5.2 Search Strategy and Databases

A detailed literature search was undertaken during the period of January-April 2025 in five peer-reviewed databases viz. Scopus, Google Scholar, ERIC (Education Resources Information Center), Web of Science, and ProQuest, as well as systematic searches of institutional repositories of World Bank, African Development Bank, African Union, UNESCO, UNICEF, IMF, ILO, GPE, ADEA, ITU, TIA, AVU, EAC, and UNILAB. The institutional repository search focused on reports, evaluations and policy documents that did not appear in any of the other academic databases.

Search keywords were developed by iterative piloting and used in combination by means of Boolean operators (AND, OR, NOT). The final list of search strings included the following: 'educational partnerships Africa'; 'university-industry collaboration Sub-Saharan Africa'; 'TVET private sector partnership Africa'; 'government NGO education Sub-Saharan Africa'; 'South-South cooperation education Africa'; 'digital learning partnership Africa'; 'human capital

economic growth Sub-Saharan Africa'; 'sustainable economic development education Africa'; 'vocational training employment outcomes Africa'; and 'education labour market alignment Africa.' The date filter ranged from 2010 to 2025, except for those pre-2010 articles which are theoretically indispensable (Becker, 1964; Brundtland, 1987).

5.3 Inclusion and Exclusion Criteria

The sources chosen for inclusion must have covered: the topic of educational partnerships or educational investments in the context of Africa or another developing country comparable to the African case; correlations between educational efforts and economic measures, such as GDP, employment, productivity, skills acquisition, or poverty; scholarly publications in peer reviewed journals, report from credible established institutions with repositories from which these reports can be independently retrieved; and sources in English from between 2010 and 2025. The criteria for excluding sources include: purely educational concerns, which do not include economic

development considerations; purely non-African cases that have no comparative value to the African case; cases where the authorship or institutional backing cannot be independently verified; and claims involving statistics but lacking an independently retrievable primary source document. The latter exclusion is critical and applies to every statistic found in this manuscript: all statistics quoted herein are based on the source documents from which they originate, not other documents reporting on them.

5.4 Screening, Selection, and PRISMA Flow

All retrieved studies were exported into the reference manager software Zotero for automatic removal of duplicates, which was then manually cross-checked. The screening process was performed in two stages sequentially, namely the first was based on title and abstract screening, whereas the second involved full-text analysis of the articles meeting the inclusion criteria. The justification of all exclusion reasons was provided when screening at the full-text stage.

Table 3: PRISMA 2020 Study Selection Flow

Prisma Stage	Records (n)	Basis for Decision
Records identified via database searches	1,180	Scopus (312), Google Scholar (398), ERIC (187), Web of Science (218), grey literature: World Bank, AfDB, African Union, UNICEF, IMF, ILO, ADEA, GPE repositories (65)
Duplicates removed	298	Automated deduplication in Zotero; manual cross-check of title and author fields
Records screened by title and abstract	882	Screened against inclusion criteria: African context; education-economic development link; 2010-2025; English language
Excluded at title/abstract screening	741	Outside Africa without comparative African evidence (n=198); no education-economic development link (n=312); pre-2010 without foundational theoretical rationale (n=231)
Full-text records assessed for eligibility	141	Full texts retrieved and reviewed against all inclusion and exclusion criteria
Excluded at full-text review	103	No verifiable institutional affiliation or publication details sufficient for independent verification (n=41); exclusively non-African evidence (n=38); duplicated by higher-quality retained source (n=24)
Sources included in final synthesis	38	Institutional reports from verified organizations (24); peer-reviewed articles in verifiable journals (8); evaluated program assessments from documented institutions (6)

Note: The final corpus for synthesis analysis of 38 sources consisted of 24 institutional and policy reports from organizations having open access repositories; 8 peer-reviewed journal articles published in verified journals; and 6 program evaluations by established institutions. Full text evaluation of excluded sources is that which presents specific numerical statements without verification of primary documents.

5.5 Data Extraction and Analytical Approach

The data extraction form entailed information about: country or region; nature of partnership in education; economic/education effects identified; exact source document where the data or evidence was obtained from; limitations recognized by authors and methodology used in the source. The data extraction tool was tested on five sources picked at random. A strict adherence to the extraction process was followed

whereby the source document where any quantifiable figure had been obtained from was stated. There was no case where a secondary document would be listed for referencing.

Analysis involved convergent thematic synthesis with both qualitative and quantitative data. Quantitative data derived from institutional databases and evaluated program reports was tabulated and analyzed descriptively. On the other hand, qualitative data about partnership strategies, experience with implementation and contextual factors underwent thematic analysis, using open coding, categorical analysis in relation to research objectives, and finally selective coding for integration. Both streams of analysis were conducted through the use of Human Capital Theory and Sustainable Development Theory as analytical frameworks, guaranteeing that the theoretical approaches work as tools of analysis. The sources used were triangulated, each finding having at least two sources from different perspectives, and also consideration of missing or contradicting sources explicitly stated. Publication bias was countered by critical institutional sources (AfDB, 2024; African Union/OECD, 2024; UNESCO, 2023; ILO, 2024) in addition to program evaluations.

5.6 Ethical Considerations

This secondary analysis did not involve the direct gathering of primary data from human participants; thus, no formal ethics clearance was needed. This was

ensured through: proper citation of all sources in order to avoid plagiarism; accurate presentation of information from the sources used without any distortion; use of sources independently verifiable; and by following the guiding principle that each statistic presented in this study comes from a document which could be verified by anyone who has access to it. The reference section contains a statement certifying that all references listed have been cited in the body of the paper and that there are no fabricated references.

VI. RESULTS AND DISCUSSION

6.1 The Economic Context: Growth Insufficient to Transform

However, before any analysis can be conducted on the performance level of the partnerships, there is a need to have a clear understanding of the economic environment in which the partnerships function. Table 1 provides verified economic statistics about particular African regions and countries. The GDP statistics are provided by World Bank (2024a), Global Economic Prospects, from which the above information has been obtained. The poverty statistics come from the World Bank (2024b), Poverty and Inequality Platform, which is the official World Bank source of poverty statistics. The unemployment and vulnerable employment statistics come from ILO (2024), World Employment and Social Outlook.

Table 1: Sustainable Economic Development Indicators in Africa (2022–2024)

Region / Country	GDP Growth Rate (World Bank, 2024a)	Poverty Headcount Ratio (World Bank, 2024b PIP)	Unemployment / Vulnerable Employment (ILO, 2024; national sources)	Contextual Note
Sub-Saharan Africa	3.6% (2022); 3.3% (2023); 3.5% est. (2024). Positive but below population growth of ~2.7% annually	~55–57% below \$3.65/day (2022 est.); absolute number in poverty rising despite stable percentage	57% of workers in vulnerable employment (ILO, 2024); youth unemployment 12–15% formal rate	Growth creates insufficient formal jobs; structural transformation lagging demographic growth
North Africa	5.9% (2021); 5.1% (2022); 4.0% (2023); 4.1% est. (2024)	~7–10% below national poverty lines; Egypt and Morocco showing improvement	10–12% regional average; Tunisia 16.4% (2023); youth unemployment elevated across Maghreb	Higher growth rates but youth unemployment remains a structural challenge
Nigeria	3.6% (2022); 2.9% (2023); 3.3% est. (2024)	~40% below \$2.15/day (2022 est.); oil sector revenues not distributed to majority	5.3% official (Q4 2023); youth underemployment ~53%; majority in informal sector (NBS, 2024)	Positive GDP growth masked by extreme labour market informality
South Africa	1.9% (2022); 0.6% (2023); ~1.1% est. (2024). Energy crisis	~55–57% below upper-middle-income poverty line; Gini ~0.63, among world's highest	32.6% total unemployment; youth unemployment 59.6% (Q3 2023), highest in Africa (Stats SA, 2024)	High-income economy by African standards but extreme inequality and structural unemployment

	(load-shedding) suppressed growth			
Kenya	4.8% (2022); 5.6% (2023); ~5.0% est. (2024). Among East Africa's stronger performers	~36% below \$2.15/day (2022 est.); urban-rural disparities significant	~5.7% official; informal sector employs ~83% of workers (KNBS, 2024)	Relatively strong growth but informality means gains reach minority of workers
Ethiopia	6.4% (2022); 7.2% (2023); ~7.0% est. (2024). Among Africa's fastest-growing	~23-27% extreme poverty; post-conflict recovery in Tigray affects distribution	~19-21%; high agricultural underemployment; labour force growing faster than formal jobs	High growth rate but poverty reduction constrained by agricultural dominance
Ghana	3.2% (2022); 2.9% (2023); 4.0% est. (2024). Recovery constrained by 2022-23 debt crisis	~23-25% below national poverty line; fiscal consolidation reduced social spending	~4.2% official; informal sector dominant; youth underemployment high	Debt crisis recovery limiting investment in skills and educational partnerships

Note: GDP growth rate data obtained from the World Bank (2024a) report on Global Economic Prospects. Data on headcount poverty obtained from the Poverty and Inequality Platform of the World Bank (2024b), utilizing an extreme poverty line of \$2.15 per day and an upper-middle-income poverty line of \$3.65 per day. Data on unemployment and vulnerable employment provided by the ILO (2024) World Employment and Social Outlook, among others. Figures for 2024 are projections of the World Bank and IMF, or preliminary data.

Table 1 presents a much more complex narrative than one of purely economic downturn. For the most part, African economies registered positive GDP growth rates for 2022-2024, with Ethiopia and Kenya emerging as leaders. The difficulty from an analytical perspective does not lie in the collapse of GDP; rather, it is the existence of a 'growth without transformation' structure where economies grow overall but the barriers preventing productive participation by the masses (skills mismatch, informal economy, etc.) continue to exist. The proof lies in ILO (2024): 57 percent of Sub-Saharan African workers in vulnerable employment despite a decade of GDP growth and educational investments. Such is the prediction of Human Capital Theory (Becker, 1964; Hanushek & Woessmann, 2015) in case educational investment does not produce skills relevant for the labour market.

In South Africa – the most industrially developed country on the continent – with 59.6 percent youth unemployment and Gini of around 0.63 (Stats SA, 2024; World Bank, 2024b), we see an especially clear picture of high educational expenditures and credentialing of the workforce coupled with a structural mismatch in skills demand and supply. From a Sustainable Development Theory perspective (Brundtland, 1987), GDP growth that fails to reduce vulnerable employment or poverty is not sustainable development by the theory's own definition. The African Union and OECD (2024) reach this conclusion explicitly: Africa's growth has been insufficient to substantially reduce multidimensional poverty or meet present needs at the scale Brundtland's framework requires, let alone preserve resources and opportunities for future generations. This context establishes the scale of the challenge against which educational partnership performance must be assessed.

6.2 Educational Partnership Landscape: Evidence, Performance, and Gaps

The systematic review identified five primary educational partnership types currently operating across Africa. Table 2 presents documented examples, reported associations with outcomes, and identified structural weaknesses, with every claim attributed to the specific source document that contains it.

Table 2: Educational Partnership Models in Africa, Evidence and Structural Gaps

Partnership Type	Documented Examples (Africa)	Reported Associations with Educational and Economic Outcomes	Identified Structural Weaknesses	Verified Source
University–Industry Collaboration	South Africa: Technology Innovation Agency (TIA) facilitates university–industry R&D. Morocco: University Mohammed VI Polytechnic (UM6P)–OCP Group partnership in agricultural and engineering education	TIA annual reports document university–industry partnerships producing commercialized innovations and start-up support. UM6P co-developed applied curricula with industry, graduates employed in agricultural and engineering sectors. IMF (2025) identifies skills mismatch as structural growth constraint in SA, implying well-aligned programs generate returns.	Concentrated in well-resourced urban institutions; excludes majority of Africa's universities; weak post-graduation tracking; most institutions lack R&D infrastructure for industry engagement	TIA (2024); IMF (2025); AfDB (2024)
Government–International Agency Programs	UNICEF: Emergency education and school feeding in DRC, South Sudan, Sahel. GPE: Grants to 30+ African countries for teacher training, curriculum, infrastructure	UNICEF (2021): Maintained educational access for millions in conflict zones. GPE (2023): USD 700M disbursed to Africa (2021–2024). UNESCO (2023) documents that despite investment, majority of students in many African countries do not achieve minimum literacy/numeracy proficiency	Access-focused, not quality-focused; short project cycles misaligned with institutional change; donor priorities often diverge from local educational needs; learning outcomes remain weak despite enrolment growth	UNICEF (2021); GPE (2023); UNESCO (2023)
TVET–Private Sector Partnerships	Morocco: Government–industry automotive TVET compact (documented by AfDB, 2024). Senegal: Government–ICT sector digital skills program (documented by ADEA, 2024). Rwanda: Government-supported tech sector coding academies	AfDB (2024) documents Morocco's automotive sector growth as among Africa's most successful industrial transformations, associated with vocational skills investment. ADEA (2024) documents Senegal ICT skills partnerships. ILO (2024) confirms TVET–private sector alignment is the model with strongest employment association globally.	Formal sector focus excludes 80–85% of workers in informal economy (ILO, 2024); geographic concentration in industrial cities; limited scalability to rural contexts; informal workers remain unreached	AfDB (2024); ADEA (2024); ILO (2024)
South–South Cooperation	Brazil–Africa: UNILAB (University for International Integration of Afro-Brazilian Lusophony, est. 2010), Lusophone Africa–Brazil reciprocal exchange. East Africa: EAC Higher Education qualification recognition framework across 5 member states	UNILAB: Reciprocal curriculum development positioning African knowledge as co-produced rather than received (UNILAB, 2023). EAC framework: Credential recognition enabling graduate mobility across member states, expanding effective labour market reach (EAC, 2021). African Union/OECD (2024) identifies South–South cooperation as growing but under-resourced.	Significantly under-resourced relative to North–South flows; politically dependent; weak monitoring and evaluation; limited systematic impact data published	UNILAB (2023); EAC (2021); African Union/OECD (2024)
Digital and Remote	Pan-African: African Virtual University (AVU, est. 1997), 33	AVU: Delivers learning programs across 33 African countries in STEM disciplines (AVU, 2023).	Digital divide: ~43% Sub-Saharan internet access (ITU, 2023);	AVU (2023); ITU (2023); African

Learning Partnerships	countries, STEM focus. Rwanda: Andela program, software engineers for global employment. Kenya: M-Pesa Foundation Academy	Andela: Connects African software engineers with international employment. ITU (2023): Internet penetration ~43% in Sub-Saharan Africa, growing but uneven.	rural connectivity below 15%; electricity access below 50% in SSA (African Union/OECD, 2024); urban bias reinforces existing inequalities	Union/OECD (2024)
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Note: All documented program examples and outcome associations are drawn from the cited source documents. Claims represent associations documented in those sources, not experimentally verified causal effects. Every specific figure is attributable to the named source document, not to a secondary source that discusses it. Readers are encouraged to consult source documents directly using URLs in the References section.

6.2.1 University–Industry Collaborations

University–industry partnerships represent the model most directly aligned with Human Capital Theory's prediction that sector-specific skills investment generates productivity returns. The Technology Innovation Agency (TIA, 2024) documents South Africa's government-facilitated university–industry R&D network producing innovations and supporting start-up enterprises, with annual reports publicly accessible at tia.org.za. The AfDB (2024) mentions the case of University Mohammed VI Polytechnic in Morocco as an anchor model where investments in educational facilities by companies are accompanied by industry collaboration in the design of curricula, which serves as the educational approach by which human capital investments generate returns. In the IMF (2025) South Africa Article IV Consultation, it was clearly stated that skills mismatch among university graduates and job market needs is a structural problem for South Africa's GDP growth.

The geographical and institutional concentration of this model, however, makes it difficult to achieve significant overall impact. According to UNESCO (2023), Africa spends only 0.5 percent of its GDP in research and development while the world average is at 1.8 percent. This research facility, which enables efficient university–industry collaboration, is limited to just a few resourceful institutions and thus not accessible by most universities in Africa. Under Sustainable Development Theory, a collaboration framework that can only be utilized by selected

institutions will not fulfill the equity condition of sustainable development by Brundtland (1987).

6.2.2 Government–International Agency Programs

The most common partnership across Africa is those of government and international agencies. Such partnerships play an essential role, especially in settings of fragility and conflict. According to UNICEF (2021), millions of children are provided with education access in DRC, South Sudan, Somalia, and the Sahel via emergency education programs and school feeding. Additionally, according to GPE (2023), between 2021 and 2024, more than \$700 million has been provided to support teachers' training, development of curriculum materials, and construction of schools. Such interventions are crucial because without maintaining access,

quality cannot be improved. Nonetheless, UNESCO (2023) highlights the evidence that there will be no gains in human capital in the absence of quality improvement. The Global Education Monitoring Report documents that the majority of primary graduates in many African countries do not achieve minimum reading and mathematics proficiency, the cognitive skills that Hanushek and Woessmann (2015) demonstrate are the primary mechanism through which educational investment generates economic growth. African Union/OECD (2024) corroborates this, noting that the USD 194 billion annual financing gap cannot be closed through access-focused international transfers alone and requires structural domestic quality reform. From a Sustainable Development Theory perspective, UNICEF and GPE partnerships operating on three-to-five-year project cycles are structurally incapable of producing the institutional change that Brundtland's (1987) framework identifies as requiring decade-long investment.

6.2.3 TVET–Private Sector Partnerships

TVET partnerships with private sector employers represent the model with the strongest theoretical alignment with Human Capital Theory and the most

robust documented associations between educational activities and economic outcomes in the reviewed evidence. ILO (2024) World Employment and Social Outlook identifies TVET aligned with employer needs as the modality most consistently associated with formal employment generation in low- and middle-income countries globally, and attributes this to the defining design feature: employer participation in defining training content, not merely funding it.

AfDB (2024) in the African Economic Outlook highlights Morocco's success story in developing its automotive industry through an example of a successful collaboration between employers and the government to build the requisite technical skills in students. The education process in such a case is straightforward since the co-designed learning modules ensure that trainees develop the competencies that are required by employers, thus avoiding skills mismatch and consequently failure to gain human capital returns. In another example provided by ADEA (2024), the ICT sector in Senegal has adopted a similar approach in developing digital skills among its workers. AVU (2023) provides a continental-level example of ICT-assisted TVET.

Limitation across all partnerships between TVET institutions and private organizations is based on the latter's bias towards the formal sector. As per the data provided by ILO (2024), 15 to 20 percent of the total workforce of Africa engages in the formal sector; thus, even the best conceived partnerships will always serve only a fraction of the labor market population. More specifically, the 80 to 85 percent population engaged in the informal economy becomes structurally excluded from such partnerships regardless of the benefits they may confer. Such exclusion is not marginal in nature since these people represent the majority of Africa's working poor and, therefore, have the maximum benefit-cost ratio for skill acquisition.

6.2.4 South–South Cooperation

South–South educational cooperation addresses several design limitations of North–South models by treating African educational knowledge as co-produced rather than received. UNILAB (2023), the University for International Integration of the Afro-Brazilian Lusophony, documents a model of reciprocal curriculum development and student exchange across Lusophone African countries and Brazil, publicly documented at unilab.edu.br. The East African Community (EAC, 2021) Higher Education

Harmonisation Strategy documents the development of qualification recognition frameworks enabling graduate credential recognition across member states, directly addressing the fragmentation of African educational labour markets across national boundaries and expanding the effective market for skills investment.

From a Human Capital Theory perspective, regional qualification recognition expands the economic returns to skills investment by enabling graduates to access employment opportunities beyond their home country's labour market. From a Sustainable Development Theory perspective, UNILAB's reciprocity model, in which neither party is positioned as the knowledge donor, builds the local institutional agency and co-ownership that Brundtland's (1987) sustainability conditions require. However, African Union/OECD (2024) identifies South–South cooperation as significantly under-resourced relative to North–South partnership flows, and systematic impact evidence linking these models to measurable economic outcomes remains limited.

6.2.5 Digital and Remote Learning Partnerships

Digital learning partnerships are the most rapidly expanding category in Africa. AVU (2023) documents the African Virtual University's delivery of STEM-focused learning programs across 33 African countries, with institutional details verifiable at avu.org. ITU (2023) provides the most reliable infrastructure baseline: Sub-Saharan African internet penetration reached approximately 43 percent in 2023, with urban areas reaching 60 to 70 percent but rural areas below 15 percent. Electricity access remains below 50 percent across Sub-Saharan Africa (African Union/OECD, 2024).

The findings from ITU (2023) regarding IT infrastructure indicate that there is a problem concerning how the distribution of resources occurs because it is apparent that digital educational partnerships are more advantageous to the population living in urban areas with electricity and connectivity; this is because these populations have better access to other forms of education and do not need investments in this sector compared to rural communities. The situation is a violation of sustainability theory (Brundtland, 1987) and human capital theory (Becker, 1964).

6.3 Four Cross-Cutting Structural Gaps

In summary, all types of partnerships face common issues arising out of structural problems which help explain why partnerships in general have been less impactful on economic development than theory suggests.

Firstly, the most basic problem is one of misalignment of learning and skills with labour market needs. UNESCO (2023) shows that the main problem of educational systems in Africa is quality rather than access. Hanushek & Woessmann (2015) argue that growth is determined by the quality of cognitive skills, not by enrolment rates. Educational programs that focus on enrolment or building infrastructure without paying attention to what students are taught create educational activities but do not create human capital. The solution to this problem which can be observed in all literature is the involvement of the employers in designing curricula.

The second issue is lack of monitoring and evaluation. The Alliance for Developing Education in Africa (2024) found that weaknesses in monitoring and evaluation are widespread, which means that it is impossible to identify best practice in partnerships, learn from past experience, or invest in effective models. Without tracking graduates' employment, wages and productivity, there is no feedback loop which would allow improving the quality of education.

Third, the structural unsustainability due to donor dependency. The African Union/OECD (2024) reveals that most partnerships in low-income African countries are predominantly financed by external sources. According to the theory of Brundtland (1987), programs without domestic co-financing and domestic institutional ownership during their financed phase will fail once the external funding stops. It can be proven again by ADEA (2024). The difference between the successful cases of Morocco's automobile industry and Senegal's ICTs partnership programs which are characterized by the significant contribution from domestic government and private sectors.

Fourth, geographic and demographic exclusion. ILO (2024) points out that 80 to 85 percent of Africa's workforce operates in the informal economy. The partnership schemes that target formal business owners, irrespective of how well they are designed, only help a small number of people. The remaining people who have very high marginal return on educational investment in the rural areas and women working in agriculture and informal sector continue to be left out of the reach.

6.4 Theoretical Implications

Table 4 maps the evidence against each theoretical framework, assessing where findings support, challenge, and extend the theories.

Table 4: Theoretical Implications of Findings

Theory	Core Proposition Applied to This Study	How Findings Support the Theory	Where Findings Challenge or Extend the Theory
Human Capital Theory (Becker, 1964; Hanushek & Woessmann, 2015)	Investment in education raises individual and societal productivity; partnerships aligning educational content with labour market needs generate measurable returns in employment, income, and GDP growth	TVET-private sector compacts where employers co-design training content (Morocco automotive, Senegal ICT, documented by AfDB, 2024 and ADEA, 2024) demonstrate the productivity-growth associations the theory predicts. IMF (2025) explicitly identifies skills mismatch as a binding growth constraint in South Africa, confirming the theory's mechanism.	Theory underspecifies institutional conditions required for investment to generate returns. Evidence shows that volume of investment without employer co-design, quality standards, and labour market linkage yields limited returns, suggesting an institutional alignment condition is a necessary extension not in the theory's original formulation.
Sustainable Development Theory (Brundtland, 1987; UN SDGs 4 & 8)	Development meets present needs without compromising future generations; educational partnerships must build local institutional capacity, ensure equity of access, and operate over time horizons	ILO (2024) evidence that 57% of SSA workers remain in vulnerable employment despite sustained partnership investment confirms insufficient equity reach. UNESCO (2023) learning quality deficits despite enrolment growth confirm that access-focused partnerships do	Theory provides normative clarity but insufficient operational specificity. It does not specify minimum thresholds for domestic co-financing, local governance authority, or monitoring accountability that would translate sustainability aspirations into

	commensurate with institutional change	not meet present educational needs, consistent with Brundtland's integrated development requirement.	actionable partnership design criteria, an operational extension this study proposes.
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Human Capital Theory is confirmed where partnerships achieve explicit labour market alignment, Morocco and Senegal cases documented by AfDB (2024) and ADEA (2024) demonstrate the associations between employer-calibrated skills investment and sectoral productivity and employment that Becker (1964) and Hanushek and Woessmann (2015) predict. However, the theory requires a productive extension: it underspecifies the institutional transmission conditions necessary for investment to generate returns. The evidence demonstrates that investment without employer co-design of educational content, quality measurement, and labour market linkage yields limited returns regardless of volume, a condition not explicit in the theory's original formulation.

The Sustainable Development Theory is proven structurally in its forecast: partnership based on dependency from donors and short cycle is not able to cause sustainable changes exactly in the way Brundtland (1987) predicts. Sustainable Development Theory lacks a concrete extension: the normative approach to the necessity of long planning periods leaves much room for program designing. This paper suggests that minimum requirements for institutional sustainability, financing by countries implementing programs, control over decisions being made locally, and control mechanisms ensuring public responsibility, should be established.

VII. CONCLUSIONS

The current study has reviewed the state of educational partnerships in Africa, how effective they have been on verified indices of economic development, and structural barriers hampering their efficiency. Five clear conclusions have emerged from the above analyses.

The first one is that Africa's GDP has grown positively but inadequately. Africa's GDP growth has not been sufficient to accommodate labor force growth, cut down the absolute number of people living below the poverty line, or create job opportunities for graduates (World Bank, 2024a; ILO, 2024; AfDB, 2024). This

'growth without transformation,' which the World Bank (2024a), ILO (2024), and AfDB (2024) have reported, arises in part because of an education system whose output skills are incompatible with the needs of productive sectors (UNESCO, 2023) and confirmed by the IMF (2025) in South Africa.

Secondly, there are partnership types associated with educational and economic variables. These include TVET-private sector agreements where employers collaborate in designing the content of education (AfDB, 2024; ADEA, 2024) and university-industry partnerships in research universities (TIA, 2024; AfDB, 2024). Commonality in both types of partnerships is the educational variable – the design of curriculum content that generates employable skills (Becker, 1964; Hanushek & Woessmann, 2015).

Third, there are four structural gaps explaining the sub-optimal performance of most educational partnerships: mismatch between education and labour market needs (UNESCO, 2023; Hanushek & Woessmann, 2015); absence of monitoring and evaluation processes (ADEA, 2024); donor dependence and short project cycle (African Union/OECD, 2024); and the exclusion of 80 to 85 percent of the African workforce from the informal sector (ILO, 2024). These are governance and educational design problems addressed through policy interventions.

Fourth, this paper enriches both theoretical models in that Human Capital Theory demands clear institutional preconditions, employer engagement in design, measurement of quality, linkages to labour markets, failing which investments will yield no returns. The Sustainable Development Theory mandates operationalizing into institutional sustainability criteria, co-finance thresholds, local governance capacity, monitoring and evaluation, failing which sustainability remains rhetoric not design.

Fifth, above all: The contribution of this study to educational studies is that it transforms the question from the significance of educational partnership to how educational design, curriculum co-governance, educational standards and labour market linkages

determine whether partnerships produce human capital that is absorptive by the economy. This is fundamental for educational research and development policy in Africa.

VIII. RECOMMENDATIONS

The following recommendations are derived directly from the study's findings and grounded in the theoretical frameworks. Each is traceable to a specific finding in Section 6.

8.1 For Governments and Ministries of Education

- 1) Institutionally mandated participation by the employers in the development of the competencies framework and content as a mandatory prerequisite for being partners in public endorsements of TVET and higher education partnerships, which is beyond funding only (addresses the curriculum misalignment gap identified in Section 6.3; implementation of the Human Capital Theory mechanism proved in case studies in Sections 6.2.3)
- 2) Introduction of publicly monitored, annually reported system of performance indicators for the partnerships, such as the employment rate and income level of the partnership graduate students along with employer satisfaction levels at 6 and 24 months post-completion, which would be made publicly available through national education management information systems (addresses the monitoring gap in Section 6.3; introduces the required accountability mechanism)
- 3) Implementation of domestic co-financing framework mandating a minimum of 40 percent financing share by the governments or private sector organizations of any kind of international financing support received in the educational partnerships, along with annual increase until full domestic sustainability achievement (addresses the donor dependency gap in Section 6.3; implementation of the Sustainable Development Theory sustainability requirement of Brundtland, 1987)

8.2 For Educational Institutions

- 1) Conduct systematic curriculum audits mapping graduate competency profiles against regional employer skill requirements, using employer

surveys, graduate tracking, and sector workforce assessments, and establish annual joint curriculum review committees with employer and community partners, using this mapping to guide curriculum reform (implementing the skills alignment mechanism identified as the common feature of effective partnerships in Section 6.2.3).

- 2) Develop and institutionalize non-formal and community-based educational programs reaching rural populations, women in subsistence agriculture, and informal economy workers, using modalities appropriate to context, mobile vocational training, cooperative learning, workplace literacy, to address the demographic exclusion gap identified in Section 6.3 and implement Sustainable Development Theory's equity condition.
- 3) Establish alumni tracking systems monitoring graduate employment, income, and career trajectories for a minimum of five years post-graduation, providing the longitudinal outcome data needed to demonstrate human capital returns and justify continued partnership investment (addressing the evaluation gap in Section 6.3).

8.3 For International Agencies and Development Partners

- 1) Restructure educational partnership funding cycles to a minimum of seven to ten years, aligned with institutional development time horizons, conditioning continued disbursement on demonstrated growth in domestic co-financing and evidence of increasing local institutional ownership (directly implementing the Sustainable Development Theory condition that Brundtland, 1987 identifies and that the evidence in Section 6.2.2 confirms is violated by current short-cycle programs).
- 2) Prioritize partnership investment in educational modalities that serve informal economy populations, community-based TVET, mobile vocational training, cooperative education, context-adapted digital learning with community facilitation, ensuring that the 80 to 85 percent of Africa's workforce in the informal economy (ILO, 2024) is explicitly included in educational partnership reach (addressing the demographic exclusion gap in Section 6.3).

- 3) Invest in African-led educational research and evaluation capacity, funding longitudinal impact studies of partnership programs over minimum five-year post-program periods, generating the causal evidence that systematic review cannot provide and that is essential for identifying what works, for whom, and under what conditions.

8.4 Directions for Future Research

- 1) Longitudinal primary research tracking educational and economic outcomes for graduates of different partnership types over five to ten years, providing causal evidence that this and all secondary reviews cannot generate.
- 2) Participatory studies engaging students, teachers, employers, and community members in assessing partnership relevance and effectiveness, integrating the perspectives of those most directly affected into the evidence base guiding partnership design.
- 3) Comparative analysis of partnership governance structures identifying institutional design features, co-financing models, curriculum governance, monitoring systems, most strongly associated with sustained educational quality improvement and economic impact.

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