



Curriculum Dynamism: Bridging the Knowledge Gap Created by Educational Latency in Developing Countries

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Abstract:

Education significantly contributes to economic development and enables individuals to lead fulfilling lives. Developed economies reap these benefits substantially, evident in their knowledge-based and creative economies. However, developing economies experience these benefits on a smaller scale, with limited impact on economic growth or quality of life. This paper argues that this disparity stems from educational latency, resulting in knowledge gaps. To address this, the concept of curriculum dynamism is proposed in this paper. This dynamic approach encompasses curriculum design and development, teacher training, and performance evaluation, creating a continuous cycle of improvement. The viability of this concept is supported by practical examples of successful curriculum reforms that have positively impacted economic development and living standards of developed economies. The paper concludes by emphasizing the shared responsibility of educational practitioners and policymakers in implementing dynamic curricula. Their commitment to enacting policies that sustain curriculum reforms is crucial for bridging educational knowledge gaps.

Keywords: Curriculum dynamism, Educational latency, Knowledge gap, Developing countries, educational reform, Pedagogical innovation

1. Introduction

Education, like other investments in human capital, fuels economic development, comparable to investments in physical capital such as transportation, communication, energy, or agriculture (Brighouse, 2006). Its primary purpose is to empower individuals to lead fulfilling lives (Veselá & Klimová, 2014). Moreover, education plays a vital role in social integration and has been recognized as a source of freedom (Harris & Sass, 2011). Simply defined, education is the process of receiving or giving systematic instruction, typically within a school or university setting. However, it extends beyond formal institutions and age groups, as practical experiences also contribute to our ongoing education (Psacharopoulos, 1988).

1.1 Education Curriculum

The Rhode Island Institute of Education defines the curriculum as a standards-based sequence of planned experiences where students practice and achieve proficiency in content and applied learning skills. It further emphasizes that the curriculum is a central guide for all educators, outlining essential elements for teaching and learning to ensure access to a rigorous academic experience for every student (Kapur & Crowley, 2008). In the era of globalization, the definition of a flourishing economy has evolved (Budiyanto, 2020). Therefore, the curriculum should integrate principles necessary for success in the globalized world, ensuring students are competitive (Fry, Ketteridge, & Marshall, 2008; MAINA, 2014).

1.2 State of Education in Developing and Developed Economies

The state of education in developed economies differs from that in developing economies (McKimm, 2007). Generally, education in developed economies is dynamic and geared towards achieving a knowledge economy and providing a fulfilling life for its citizens. This has been achieved through mass

industrialization, human capital development, and the dynamic nature of educational curricula (Gunderson & Oreopolous, 2020). However, in developing countries, education primarily focuses on individual emancipation from poverty, with less emphasis on collective development. This is reflected in the surge of academics emigrating from developing countries to developed economies, primarily to escape poverty rather than gain knowledge to benefit their home countries. One significant consequence is the lack of fresh perspectives injected into the educational curricula of developing countries, hindering their ability to achieve a true knowledge economy that supports a fulfilling life for a substantial portion of their citizens, as opposed to a small elite group. This, among other problems, has resulted in educational latency between developed and developing economies, ultimately culminating in a knowledge gap.

While the emergence of private schools and universities in developing countries like Nigeria and Ghana has arguably improved educational quality (Ehigiamusoe, 2012; Adu Boahen, 2022), aiming to bridge this knowledge gap, private education's profit-driven nature makes it expensive and difficult to sustain on a large scale, given the high Multidimensional Poverty Index scores in these developing economies. Furthermore, an in-depth analysis of private university curricula reveals a similar issue of stagnation due to limited funding for instructor training.

1.3 Research Aim

This paper aims to conceptualize educational latency and explain how it creates a knowledge gap between education in developed and developing economies. It links educational latency to the stagnation of educational curricula, which dictate the content and methods of teaching required for a flourishing economy, thereby introducing the concept of curriculum dynamism. Finally, it proposes several suggestions for achieving curriculum dynamism in developing economies and bridging the knowledge gap caused by educational latency.

2. The Concept of Educational Latency

Latency is defined as the state of being present but requiring specific conditions for activation. It can be understood as existing in potential (O'Neill, 2015; Francis & Gowda, 2020). In networking, network latency (or lag) refers to communication delays over a network, potentially creating bottlenecks (Villar, 2013). As established earlier, the primary aim of education is to enable individuals to lead fulfilling lives, achievable in this era of globalization through a knowledge economy (Adebayo, 2024). Therefore, delays in understanding and adapting to the evolving needs of a knowledge economy led to outdated educational curricula, hindering individuals' ability to achieve fulfilling lives. Educational latency can thus be conceptualized as the disparity in the level and quality of education required for a fulfilling life in the era of globalization between developed and developing economies, resulting from the implemented curriculum.

2.1. Impact of Educational Latency: Key Knowledge Gaps

Educational latency consistently leads to knowledge gaps in educational practices and curricula, resulting in an educational system unable to foster economic development. This negatively impacts economic development, often reflected in poor economic metrics such as the Human Development Index and Multidimensional Poverty Index (Budiyanto, 2020).

Beyond the inability to sustain a knowledge economy that supports a fulfilling life for educated citizens, individuals from developing economies facing educational latency often require additional qualifications and struggle to demonstrate their competency when seeking opportunities in developed economies (e.g., IELTS, doctoral degrees, etc.).

Another impact of educational latency is the heavy reliance on importing goods and services. This stems from curricula lacking the knowledge required to produce these essential goods and services

domestically. Consequently, local commodity prices are linked to global prices, increasing foreign exchange volatility and inflation risk. Furthermore, knowledge gaps in curriculum structure hinder these economies from transitioning effectively and cost-efficiently from resource-oriented economies to knowledge economies capable of value chain addition.

3. The Concept of Curriculum Dynamism

Dynamism implies a state of constant evolution, incorporating new and innovative ideas. In the context of education, curriculum dynamism describes an active curriculum that incorporates new and updated ideas and practices necessary for achieving and sustaining a knowledge economy.

Curriculum dynamism goes beyond simply explaining novel concepts that drive knowledge economies in developed countries to students in classrooms and laboratories. It is a continuous three-fold process encompassing curriculum development and design, teacher training, and performance evaluation.

3.1 Curriculum Design and Development

Dynamism in a curriculum is evident in its design. This process involves creating a curriculum that bridges knowledge gaps caused by educational latency and potentially provides solutions to resulting economic challenges.

A curriculum limited to updating topics and basic practices to align with what is taught in developed countries merely signals curriculum transfer and does not represent dynamism. A dynamic curriculum should include not only the fundamental knowledge needed for global educational literacy but also the specific knowledge required for the economic emancipation of the economy it serves.

Kola (2013) describes curriculum design as a high-level process that defines the learning objectives within a specific program of study, leading to specific units of credit, qualification, or certification. This definition also encompasses curriculum development, which details how a curriculum is planned, implemented, and evaluated (Sahlberg, 2007). As highlighted by Diamond (1998), curriculum design must be preceded by a needs analysis that considers the following:

- The needs of the society in which the educational program operates.
- The program's priority within the college/school.
- The availability of academic expertise within the college/university to support the program.
- Sufficient resources for program success.
- Feedback from current students and stakeholders on existing curricula.
- Information needed for a program proposal.

This needs analysis informs the development of an educational philosophy or policy from which sound curriculum models can be derived and adopted by the educational sector. To achieve this, policymakers, educational institutions, and industries must be involved in the curriculum design and development phase to ensure that educational policies and models accurately represent the needs of the economy. This process should be conducted at regular intervals but remain flexible enough to adapt to unforeseen technological advancements.

3.2 Teacher Training

Well-equipped and well-prepared teachers are essential for achieving curriculum dynamism (Agbowuro, Saidu, & Jimwan, 2017; Gálvez Suarez & Milla Toro, 2018; Bhardwaj, 2016). There is growing evidence that teacher education is crucial for preparing students for valuable societal participation (Kruss, McGrath, Petersen, & Gastrow, 2015; Mayston, 2003; Avalos & Assael, 2006). This is particularly relevant as teachers are the primary implementors of the curriculum and directly interact with students. Therefore, teachers must not only be highly qualified but also continuously updated and re-evaluated through a flexible and ongoing certification process.

A dynamic curriculum must provide avenues for extensive and comprehensive teacher training programs. These programs should be incentivized and not solely tied to promotions. Training should be conducted by experts with practical field knowledge in addition to theoretical knowledge, including experienced educators, high-achieving professionals from various industries, and knowledgeable policymakers. Teacher training should also incorporate workshops and practical examinations with fair grading systems, culminating in statutory promotional examinations.

In this teacher training process, the developed curriculum is presented to the teachers for their feedback and potential contributions. This phase is crucial to ensure that teachers understand the curriculum's objectives and can effectively implement its content and policies. A comprehensive teacher training program also facilitates teacher transfers and eases replacements when necessary.

3.3 Performance Evaluation

Student academic performance and socioeconomic development reflect the quality of teaching and the overall effectiveness of the educational system, respectively (Barnett & Coate, 2005; Bauer & Prenzel, 2012). Therefore, a dynamic curriculum must include measures to evaluate the quality of education and its impact on the economy. This involves evaluating student performance, teacher performance, and the effectiveness of enacted policies. This stage provides feedback for the curriculum design and development stage.

Student performance evaluation should include a reward system that recognizes not only information retention but also innovation and the ability to translate classroom knowledge into solutions for economic needs. The curriculum should provide opportunities for evaluating students' creativity and innovation alongside their understanding of theoretical concepts.

Teacher performance should primarily be evaluated based on the overall quality of student performance. While a failing class may indicate disengaged students, it could also point to inadequate teaching. Teachers, including head teachers, should also be evaluated on their adherence to the training they received. This can be achieved through classroom observations, reviewing recorded classroom activities, student feedback through curriculum-class compatibility questionnaires, and anonymous student-teacher evaluations.

Policy performance evaluation, though not directly measurable in classrooms, can be monitored by analyzing student and teacher performance and other relevant metrics.

A robust performance evaluation system provides valuable information about the effectiveness of the curriculum design, teacher training, and supporting policies. This feedback loop informs curriculum design and policy re-evaluation, ensuring that curriculum dynamism remains a continuous approach to educational reform. Consistent implementation of curriculum development allows for identifying the specific needs of the economy and facilitates a transition from a resource-based economy to a creative economy.

4. Educational Reforms in China

China has experienced significant economic growth and is considered a rapidly developing economy (Hughes & Tan, 2017). This growth is intertwined with China's economic reforms initiated after Mao's death in 1976, including the Reform and Opening Up policy in the education sector in 1978 (Swanwick, 2018; Whitty, 2014). A key trend in China's education reforms is the consistent review and amendment of educational policies and the enactment of supporting laws. This demonstrates that China's educational curriculum is not only tailored to meet direct economic needs but also incorporates teacher input and robust performance evaluation processes, leading to continuous improvement of educational policies and

the curriculum. These components align with the concept of curriculum dynamism and highlight its importance for educational and economic development.

4.1 Educational Reforms in Finland

Finland's transformation from a poor agrarian country to a modern welfare economy, ranked as one of the most competitive and least corrupt by the World Economic Forum and Transparency International, respectively, began in the 1970s. This success can be attributed to the stable and widely accepted values adopted by policymakers (Sahlberg, 2007). While resisting globalization's push for standardized education and accountability, Finland's education system demonstrates that alternative approaches and policies can create successful outcomes. Central to Finland's curriculum is encouraging teachers and students to experiment with new ideas and methods, fostering innovation and creativity while respecting pedagogical traditions and maintaining established school structures. Other key practices that contribute to Finland's success and exemplify curriculum dynamism include employing well-trained teachers (requiring a Master's degree for permanent teaching staff), utilizing intelligent and accountable performance evaluation metrics, promoting sustainable leadership, and fostering a culture of trust.

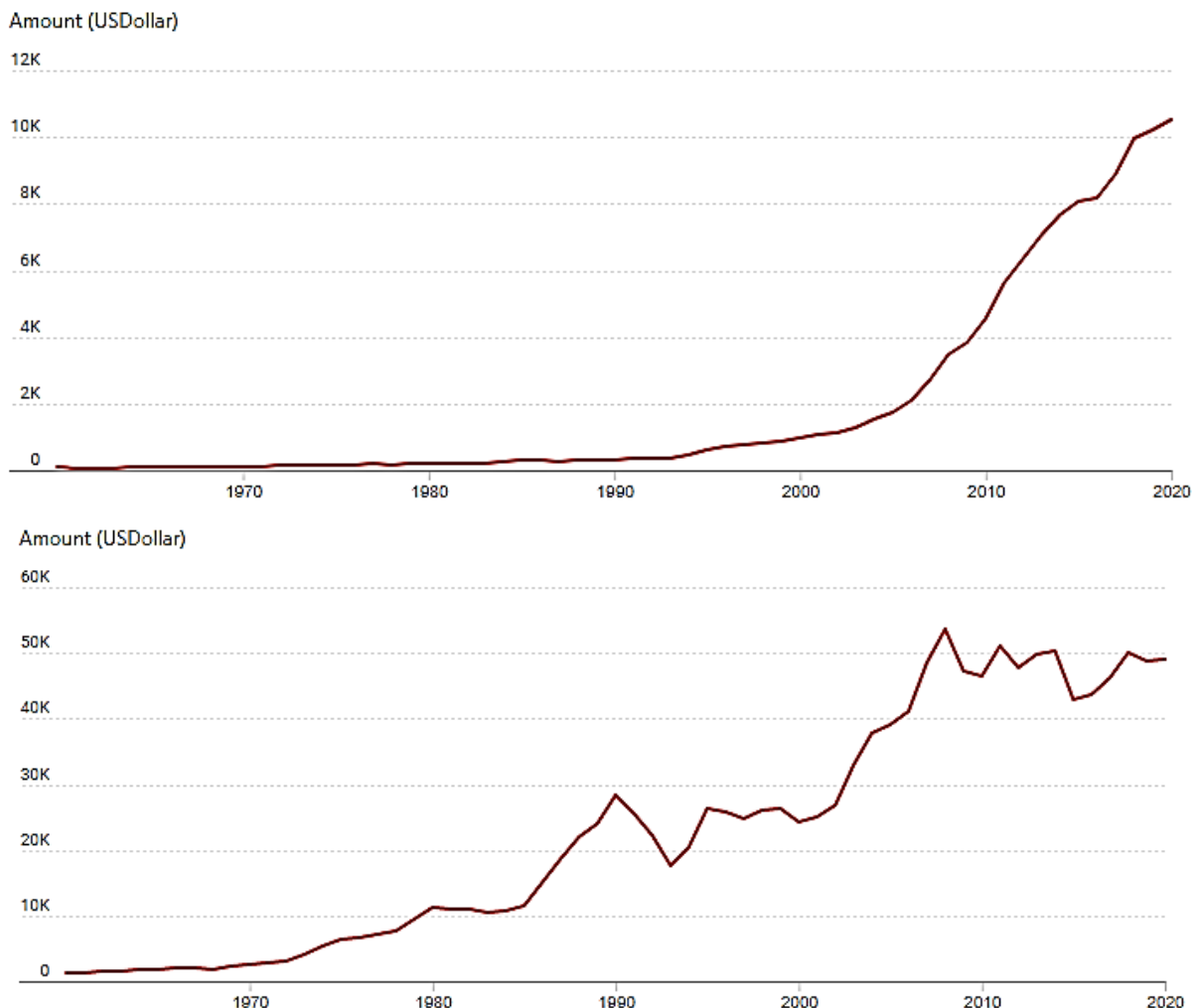


Figure 1: Gross Domestic Product of (top) China and (bottom) Finland between the years 1960 and 2020. Source: World Bank Open Data

Figure 1 illustrates the gross domestic product of China and Finland, showing exponential growth coinciding with the implementation of educational reforms. While not the sole contributor, education reform is undoubtedly a significant factor. Developing economies can achieve similar progress by embracing curriculum dynamism.

5. Conclusion

This paper identifies educational latency as the primary cause of knowledge gaps between developing and developed economies, highlighting its impact on the education sector and local economies. Curriculum dynamism is presented as a potential solution for bridging these gaps, with its viability supported by analyzing successful curriculum reforms.

Properly implemented curriculum dynamism can enhance the value of the education sector to developing economies, facilitating their transition from resource-based to creative economies, as demonstrated in the practical examples discussed.

Achieving a dynamic curriculum requires committed policymakers who prioritize dynamism in the education sector to foster a robust creative economy. Curriculum design and development can only thrive with supportive educational policies. Therefore, the success of curriculum dynamism hinges on collaboration between educational practitioners and policymakers.

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