

# Determination in Education Development Towards the Improvement of Human Capital Productivity: Systematic Literature Review

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## Abstract

A systematic literature review on education development towards improvement the of human capital is presented in this paper. It analyses the themes emerging from 20 articles identified through Scopus and the Web of Science database. The review was conducted using the Preferred Reporting Items for Systematic Reviews (PRISMA) approach which provides a comprehensive guideline for systematic review and data collection. The review included research studies published between 2018–2022. Development of education, quality of education, and productivity improvement were the three categories for the themes. This paper discusses these topics in depth and is presented in the literature review. Rather than reiterating the literature review and acknowledging the problem, an approach with a focus on innovative solutions to bridge a gap in education and human capital productivity was also presented. This study found that the labor force with low education levels should take the initiative to continue their studies. From an economic perspective, suggests that human capital investment affects economic development. Given its importance to the economy, any fluctuations in human capital production could hinder economic growth. Moreover, graduate employability is grounded on a strong sense of innovation, collaboration efforts, and government intervention for sustainable economic growth.

**Keywords:** Education Development, Human Capital, Productivity, Systematic Literature Review

## Introduction

In this globalization era, more knowledgeable human capital is needed to gain better economic growth. The ability of a country's human resources in providing skillful labour in various scopes ensures the success of the implementation of the economic policies. Education and human capital have two essential keys that have a relation to contributing to economic growth. Human capital is a set of resources that combines knowledge, training, and skills that are correlated to education (Zhang et al., 2021). The attention to higher education increases from time to time as people realize the importance of providing better education for their children's future and the economy as a whole. Some Asian developing countries' economies

face specific challenges in education development because these countries do not prioritize these sectors in order to achieve high growth rates and sustain their status as high-income countries. Malaysia, Indonesia, Thailand, and the Philippines, for example, witnessed rapid growth rates in the 1980s and early 1990s, but not enough to reach the high-income benchmark. Malaysia and Thailand are upper-middle-income countries, while Indonesia and the Philippines are middle-income countries (World Bank, 2019). According to the World Economic Forum's Human Capital Index (HCI), East Asia and Pacific countries' scores are in the middle of the pack, with an overall average ranking of 69.75. 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 more efficient if they benefit from education and training (Georgescu, 2019). The attention in higher education is growing in many nations across the globe. Government efforts in strengthening human capital via education are increasing. In most of the studies on human capital, the subject indicates that education, wage, health, experience, and social development link perfectly with human capital development (Lee et al., 2018). Education attainment shows that more skilled and productive workers in promoting the growth and development of an economy efficient and effective way.

The data were collected from a journal that discusses the development of education towards the improvement of human capital from 2018 to 2022. These data are identified using the Systematic Literature Review (SLR) method. By using the Systematic Literature Review method, journals can be systematically reviewed and identified, each of which follows a predetermined step or protocol. Also, the Systematic Literature Review method can avoid subjective recognition, and it is hoped that the results of this introduction can be added to the literature on the use of the Systematic Literature Review method in the introduction of journals. The systematic literature review reported in this paper is grounded on the determination of education development toward the improvement of human capital. The review will examine how aspects like the development of education, quality of education, and productivity improvement. This review will fill the gap in research on education and human capital. Furthermore, current systematic review studies on the topic do not elaborate on the review approaches including keyword identification, article screening, and article eligibility.

As a result, prospective researchers are unable to replicate the review, verify the interpretation, or determine the range of data covered by these reviews. This research is also significant because it helps researchers understand the peer literature reviews which could help them understand the challenges to improving the quality and productivity of human capital. The current systematic analysis corresponds to the main research question, "What is the contribution of education that makes our human capital more productive?" Meanwhile, the proceeding section details the approaches employed to answer the research question addressed by the current report. The last section suggests actions and changes in improving higher education programs to create a balance between education development and human capital productivity. Suggestions and recommendations for future research are also presented.

### **Material and Methods**

There is an abundance of systematic reviews conducted worldwide. In contrast, there is a lack of systematic reviews on the development of education toward the improvement of the

human capital context. Thus, this study adopted the PRISMA method to conduct the systematic literature review.

### Identification

The first step in the systematic review is to identify suitable publications for the review. First, the researchers determined the keywords and related or similar terms using dictionaries, encyclopedias, thesaurus, and previous works. After identifying the important terms, the researcher created search strings as shown in Table 1 for searching the articles in the Scopus and WOS databases. The researcher successfully retrieved materials from both databases.

Table 1  
*The Search Strings*

Scopus	<i>TITLE (education OR higher education AND human capital OR labour OR labor) AND productivity AND (LIMIT TO (PUBSTAGE, "final")) TO AND (LIMIT TO (OA, "all")) AND (LIMIT-TO (PUBYEAR, 2022) ORLIMIT-TO (DOCTYPE, "ar")) - (LIMIT TO (LANGUAGE, "English")) AND (LIMIT TO (SRCTYPE, "j"))</i>
Web of Science	education OR higher education [Title] AND human capital [Title] OR labour[Title] OR labor [Title AND productivity [Title]

### Screening

The screening phase started by identifying and excluding duplicate articles. 40 articles were excluded during the first round of screening. Then, the remaining articles were evaluated to determine whether they fit the inclusion criteria, which is the articles should report the findings of research studies as they are the primary source of practical information. Consequently, articles that present findings of meta-analyses, systematic reviews, article reviews, meta-synthesis, book series, book volumes, book chapters, or conference proceedings were excluded. Moreover, the articles should be written in English and published between 2018 and 2022. Based on the researchers' inclusion and exclusion criteria, further 47 articles were excluded from the review.

### Eligibility

The third step was conducted to determine the eligibility of articles derived for the review. The remaining 20 articles underwent a review of their titles and key contents. This step was conducted to ensure that the articles were retained to meet the inclusion requirements and fulfill the research objectives.

Table 2  
*The Inclusion and Exclusion criteria*

<i>Criterion</i>	<i>Inclusion</i>	<i>Exclusion</i>
Language	English	Non-English
Timeline	2018	< 2022
Literature type	Journal (Only research articles)	Journal (book chapter, conference proceeding)
Subject Area	SS, B, E, AH	Besides SS, B, E, AH

### Data Abstraction and Analysis

An inductive thematic analysis (Braun & Clarke, 2006) was used to identify relevant themes. The analysis yielded three primary themes spanning three broad thematic areas: graduate expectations, graduate knowledge, experience, and skills development, and job market and economy. There were six steps in this process: data familiarisation, data coding, identifying themes, reviewing themes, defining, and labelling themes, and reporting the findings.

### Result and Finding

Based on the search technique, 20 articles were extracted and analyzed All articles were categorized based on three main themes, which are the development of education (7 articles), quality of education, (7 articles), and productivity improvement (6 articles). (Refer to Table 3)

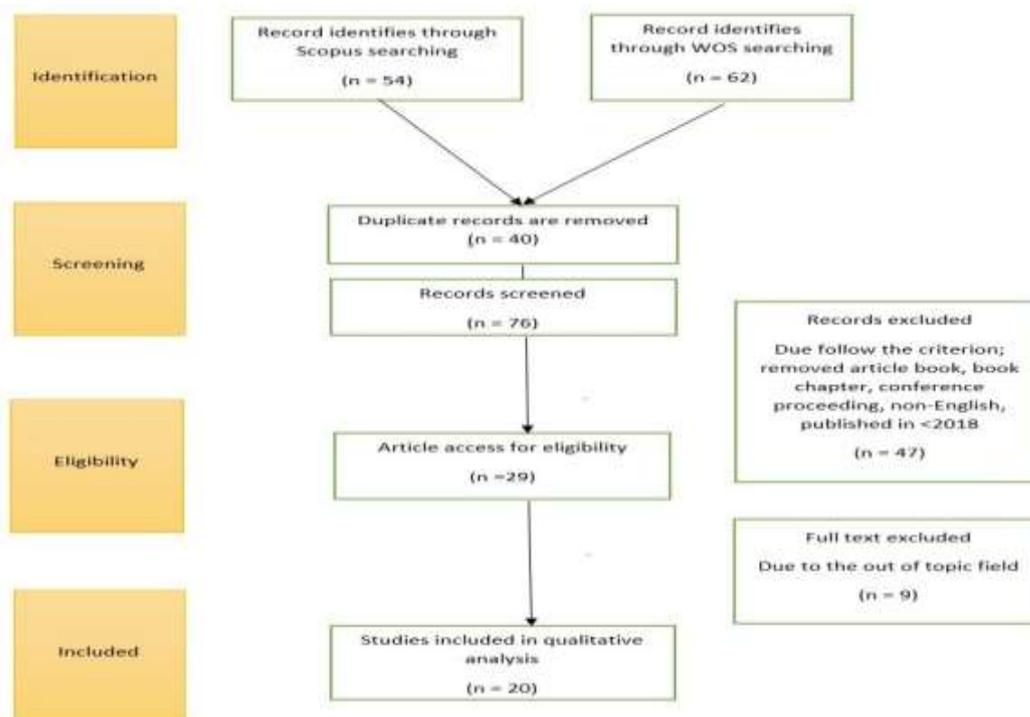


Figure 1 – Flow Diagram of the proposed search study (Moher et. al., 2009)

Table 3

*Finding based on the Search Criteria*

No	Author	Year	Journal	Title	Scopus	WOS	Remarks
1.	Thinagar et al	2021	International Journal of Academic Research in Business and Social Sciences, 11(18), 12–24.	Human Capital Investment and Economic Growth: A Study on ASEAN Countries		/	Productivity Improvement
2.	Chen & Chen	2021	International Journal of Financial Studies 9 (3), 1-12	The Impact of Higher Education Expansion on the Educational Wage Premium in Taiwan: 1985 to 2015.		/	Development of Education
3.	Chaikin	2021	Journal of Business and Technology 2(48): 17-25	Sustainable development of education as inclusive economic growth	/		Quality of Education
4.	Maneejuk & Yamaka,	2021	Sustainability (Switzerland) 13(2), 1-28.	The impact of higher education on economic growth in ASEAN-5 countries.	/		Productivity Improvement
5.	Yoon et al	2020	Sustainability (Switzerland) 12(8), 1-10	Assessing the effects of higher-education factors on the job satisfaction of engineering graduates in Korea.	/		Development of Education
6.	Zheng et al	2021	China Economic Review 66, 1-14.	Overeducation, major mismatch, and return to higher education tiers: Evidence from novel data source of a major online recruitment platform in China.		/	Development of Education
7.	Aman	2021	Sustainability (Switzerland) 13(1), 1-11.	Sustainability of impact sourcing initiatives in higher education for graduates' employability.	/		Quality of Education
8.	Trisnaningsih et al	2020	Journal of Asian Finance Economics and Business	Contingency Model to Increase the Uptake of Higher Education Graduates in the Job Market		/	Quality of Education

- 7(4), 197-203.
9. Zhang & Wang 2020 SAGE Open 10 (2), 1-15. Factors Influencing Employment Rate and Mobility of Science and Engineering and Economics and Management Graduates in Northeast China: An Examination / Development of Education
  10. Choi & Bae 2020 Annals of The American Academy of Political and Social Science 688 (1), 115-136. Changes in Early Labor Market Outcomes among Young College Graduates in South Korea / Productivity Improvement
  11. Wang et al 2020 Sustainability (Switzerland) 12(2), 1-14. Returns to education in different job locations for off-farm wage employment: Evidence from China / Development of Education
  12. Peng et al 2019 Social Indicators Research 143 (1), 133-156. Intergenerational Earnings Mobility and Returns to Education in Hong Kong: A Developed Society with High Economic Inequality / Productivity Improvement
  13. Chen & Gan 2021 Sustainability (Switzerland) 13(23), 1-14 Sustainable development of employability of university students based on participation in the internship promotion programme of Zhejiang Province / Quality of Education
  14. Mubarak et al 2020 Career Development International 25(6), 671-690 The impact of high-performance human resource practices on the research performance and career success of academics in Saudi Arabia / Productivity Improvement
  15. Bai et al 2020 Sustainability (Switzerland) 12 (5), 1-20 Influencing factors for the promotion of international vocational qualification and certification: Evidence / Quality of Education

16.	Huang et al	2020	Sustainability (Switzerland) 12(5), 1-16	from international project manager professionals in China. Interdisciplinary research on students' employability in technology education to advance higher education enrollment sustainability	/	Development of Education
17.	Hsieh & Usak	2020	Revista de Cercetare si Interventie Sociala 68, 95-112	High education radical transformation era: How teachers' competency can enhance the students' employability?	/	Quality of Education
18.	Baek et al	2019	Inzinerine Ekonomika - Engineering Economics 30 (1), 59-68.	Convergence in Education and Employment of Engineering Students: Korean Evidence	/	Quality of Education
19.	Baek & Cho	2018	Sustainability (Switzerland) 12 (5), 1-20.	Identifying the virtuous circle of humanity education and post-graduate employment: Evidence from a Confucian country	/	Quality of Education
20.	Memon, and Liu	2019	Sustainability (Switzerland) 11 (9), 1-14.	Assessment of Sustainable Development of the Performance of Higher Education Credentials in the Transitive Labor Market	/	Productivity Improvement

## Findings and Discussion

### Development of Education

The development of education cultivates and accumulates human capital in many countries. Education is deemed the main driver of economic growth, which has led to the influx of higher education providers. It could be argued that the growth in higher education may not necessarily increase human capital in the short time period, but rather, depreciate the value of the academic qualification. Contemporary scholars have a similar mindset (Thinagar et. al (2021), reporting the importance of educational investment. Similarly, investing in years of

education, like investing in the accumulation of productive skills, improves people's abilities as demanded by the labor market. Economists consider that resources should be expended on physical capital, as an investment that yields a future return, rather than on consumption; expenditure on human capital must be considered analogous to physical capital (Huang & Hseih, 2020). Educational institutions are positively correlated with labour markets, and a well-trained workforce that possesses supplementary education is generally understood as a significant precondition for economic development. However, all workers with higher education do not inevitably induce high economic growth.

Chen and Chen (2021) reported that government-enforced highly regulated higher education policies that strictly control universities and students to avoid overinvestment and dilution of resources which have a negative impact on educational quality, it has shifted to a more open policy in the mid-1990s. This shift has caused an increase in the number of Taiwanese universities, from 50 in 1995 to 150 in 2005. While the high number of graduates led to the increase in skilled labor supply, recent university graduates receive 12% to 21% lower salaries than their older counterparts. In the meantime, Wang et. al (2020), posited that in education is deemed a way to eradicate poverty and promote social mobility. However, despite a large number of universities, there is still a wide gap in access to educational resources, resulting in a large disparity between rural/urban academic ability and opportunity. Therefore, multiple counselling mechanisms such as career counselling arranged by universities, will improve their academic achievement and also enhance their employability opportunities. Student expectations and student choice have a direct impact on choosing a higher education institution. The rate of completion of tertiary education among young people in Korea was 69.8% in 2019, ranking second among the Organization for Economic Co-operation (OECD) countries. Unfortunately, graduates experience difficulties in finding a job. The Youth unemployment rate in Korea increased by 0.9% from 2009 to 2019, (Korea Economic Research Institute,2020). These situations lead the universities to make an effort to solve the problem of youth unemployment by developing various employment support programs to improve student career development and employment capabilities. The research was conducted by Yoon et. al (2020) to analyze employment support programs that should be prioritized for hospitality undergraduate students in Korea. Results showed that employment support programs to be given top priority varied depending on the school year of the students. University employment support programs must continue to identify and support students' needs. This research will assist university employment support programs more effectively while also improving students' job placement performance in the labor market. The quantitative analysis shows that a low percentage of women with tertiary education stay at home because of the availability of opportunities for employment at their expected wage levels. Zhang & Wang (2020) suggest that; to encourage women to participate in the labor force, diversification of vocational training focusing on current and future demands in the job market, an expansion of vocational training intakes, development of soft skills training facilities and development of career guidance are key areas requiring and urgent interventions.

### **Quality of Education**

The link between an individual's income and the level of education they complete is well documented. Human capital training is a standardized practice that facilitates this connection, linking "labor market experience with specialized controls" as they argue that higher income increases worker productivity by increasing each subsequent grade (Chaikin, 2021). However,

people with higher education are relatively correlated with job titles in the labor market. Similarly, ecumenical education is considered to play an imperative role in the prospect of employment, where more educated candidates are not exclusively more disposed to procure employment than less educated candidates, but they are more likely to acquire employment of a superior quality (Aman, 2021). According to Trinangsih (2020), the sheepskin effect is an applied economic theory related to people's academic degree, which is offered by institutions after completing a schooling period. Previous studies also show that returns from education are associated with certificates of qualification and sheepskin effects, which are less clear. Likewise, most of the analyses related to the earnings function have been affected by the nonexistence of the diploma or sheepskin effect. In the literature, gender-based inequality in employment remains the focus area. The labor market seeks committed productivity and the distribution of individuals' incomes into specific grade levels, neither of which vary according to gender-based returns (Chen & Gan, 2021). Although it is very difficult to judge an employee's ability, the sheepskin "certificate or acquisition of a receipt after the completion of schooling" is a helpful tool for screening, based on a projection of the future production of the employee. Although the productive value of education is not only dependent on the level of education, but also on the quality of the pedagogy and the knowledge and skills imparted to students (Hsieh & Usak, 2020).

According to Bai et. al (2020), higher education has been reported to have nonlinear effects on economic growth in ASEAN. Various education indicators have been used to analyse the effects of education on economic growth. Studies have verified the nonlinear impacts of government spending per tertiary student on economic development. It was found that the influence does not necessarily in accordance with the rule of diminishing returns. Second, the data show that a rise in graduate unemployment can either positively or negatively influence on economic growth. Finally, higher enrolment in secondary and higher education can help ASEAN-5 prosper economically. As a result, posited that while secondary enrolment rates have a positive impact on economic growth, higher education is critical for future sustainability and growth.

In Indonesia, Trisnangsih et. al (2020) examined graduate attributes that might boost the uptake of higher education graduates into the Indonesian labor market. It was found that graduates' abilities significantly impacted their ability to obtain work after graduation. Furthermore, the researchers believe that networking and professional certifications will increase higher education graduates' uptake in Indonesia, as sought by stakeholders, as well as their capacity to compete in a global or international work climate. Baek et. al (2019), a study was conducted in Hong Kong, which faces one of the world's most critical economic inequality despite the high increase in higher education over the previous two decades. The findings demonstrate that non-degree tertiary education produces the same return across varying earning distributions. This finding implies that low-earners no longer gain more from such education than higher earners and that the education's equalizing impact on earnings has vanished.

### **Productivity Improvement**

Human capital is an important factor used in converting all resources to mankind's use and benefit. Economists observed that the development and utilization of human capital are important in a nation's economic growth. By investing in human capital, the productivity of labor improves, and such improvement also enhances the productivity of capital to a degree

where labor and capital are complementary. Lu et al (2021), had conducted research emphasizing the role of human capital to stress the importance of the accumulation of human capital, and present an augmented version of the Solow model where human capital enters the growth equation as the third factor of production. In consulting economic theory, workers are compensated according to their marginal productivity. This is called anticipatory wage—the mechanism associated with people’s education and skill-based productivity (Choi & Bae, 2020). However, workers’ authentic productivity is laborious to observe, and employer soften rely on surrogates when making decisions about wages.

Human capital or the stock of productive skills and technical knowledge embodied in labor can be acquired through schooling or on-the-job training. It is widely acknowledged that workers with more schooling are better at exploiting and adjusting to new technologies (Peng et. al., 2019). In fact, formal schooling is the most important factor in determining human capital. For instance, from the perspective of screening, one of the most visible indicators of productivity is the curriculum vitae and human capital, and studies indicate that individuals accumulate skills and knowledge while at school, where their productivity improves. Empirical studies have shown positive and significant returns from education. On-the-job training, on the other hand, is important for what a worker has been trained rather than whether he or she has been trained. Since detailed information on training is frequently inaccessible, different indicators of educational attainment are commonly used to measure skills in human capital models (Al Shaik et. al., 2020).

Being globally focused on personal investment into education and its outputs, many researchers also focused on the variation in outcomes associated with different education levels and related to the duality theory, the input of the supplied education, and the demand in the market. The trend of the supply/demand factor in the transitive labor market has seldom been studied. For instance, the sustainable development of any country relies on the Gross Enrolment Index (GEI), or Gross Enrolment Ratio (GER), of educational enrolments in school at different levels, along with a qualification from those particular grade levels. The GER can exceed 100% equal to the entire population of a whole country and would indicate the eradication of poverty.

Nowadays, human capital is considered a key element that can be utilized to achieve organizational objectives. Firms always try to effectively manage their workforce through human capital development in order to achieve not only business objectives but also business survival and sustainability. Human capital has a strong positive association with labor productivity through upper secondary and tertiary education, while primary education exhibits a negative relationship and lower secondary education does not exhibit any association with productivity. Tertiary education spillovers along with a number of education quality indicators present a significant positive relationship with productivity (Memon, 2019). Overall, findings suggest that policymakers should account for education quality as well as spillovers and direct their efforts toward a more efficient and enhanced education system with an emphasis on high education levels to improve labor productivity overall and reduce spatial productivity disparities.

## **Conclusion**

This systematic literature review’s general objective is to study development education toward human capital productivity in contributing the economy growth. The specific objective is to identify the importance of education development and creating value for economic

growth, determine the relationship between education and human capital and identify whether education can lead to economic growth through the investment of human capital. The government needs to pay attention to the growth in public expenditure on the education sector and the burgeoning well-organized budget in relation to the source of productivity to upgrade the pedagogical curriculum for the maintenance of a quality assurance framework of higher, with the collaboration of global market development. Government should attempt to become a learning centre for educational excellence and address the deteriorating rates of return to the workforce from low education to higher education upgrade policies, provide merit-based scholarships, and update learning tools related to markets. This situation shows that to increase graduate employability, the primary players (graduates, academics/universities, employers, and the government) must collaborate. Without engagement with companies, universities cannot guarantee employment for their graduates. In the meantime, students must try to learn and gain the necessary information and abilities in a supportive atmosphere and the government should increase efforts to enforce policy framework and economic conditions that could support job seekers.

The literature review that the researcher has done reinforces the proof that education plays a vital role in enhancing the productivity of human capital. Undeniably, determination in educational development is a valuable investment to increase human capital productivity. Education helps improve skills and knowledge, increasing productivity because employees can perform their jobs effectively. Education fosters innovation and creativity by exposing people to new ideas, concepts, and technologies. By developing critical thinking and problem-solving skills, education can help individuals develop new ways of solving problems and finding more effective ways of doing things. Additionally, education helps improve communication and teamwork. Effective communication and teamwork are important components of productivity. Education can help individuals develop these skills by encouraging collaboration and providing opportunities for teamwork. In addition to this, education can also increase job satisfaction. Employees who feel empowered and confident in their abilities are more likely to be satisfied with their jobs, leading to increased productivity. Finally, by investing in education, individuals can increase their earning potential, thereby improving their quality of life and productivity. Overall, education is a powerful tool for improving human capital productivity by enhancing skills and knowledge, fostering innovation and creativity, enhancing communication and teamwork, improving job satisfaction, and increasing earning potential. Education can help individuals become more productive and valuable members of the workforce.

In conclusion, education, and human capital show a significant positive outcome in economic growth. There is a strong relationship between education and human capital that involves better knowledge, training, and support for economic growth. Higher education shows more skilled and productive workers. In order to improve education quality, the effectiveness of education input has to be increased. The rapid development of higher education must also be in line with the increase in economic growth. A favourable economic environment can create more employment opportunities. This could make people feel that investing in higher education is something that is profitable and not detrimental to a better life. Further study is required to evaluate the effects of the innovative potential objective clusters of entrants with higher education and to enrich the discussion about the methods and mechanisms of governance education and economic policy.

### Conflicts of Interest

The authors declare that they have no conflicts of interest to report regarding the present study.

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