Are Educational Standards Declining? A Comparison Study Before and After COVID-19 in Europe

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ABSTRACT
In recent years, the educational sector has been a subject of review by experts and stakeholders within the analysis of each country's future economy. Such advocacies have revolved around the appreciation of education by policymakers including educators, parents, and students, as well as the development of skills needed to navigate the work in the 21st century. This research was interested in understanding the facts and trends relating to whether there is a decline in the educational level in Europe. The research stems from the underlying facts centred on the decline in educational attainment in the world. Hence, it became relevant to examine the pattern of education within Europe by comparing the educational level in Europe before and after the COVID-19 pandemic. With specific consideration of the social and human capital theories, the research selected various metrics within the field of education to achieve its goals and objectives. In addition, the data were sourced and retrieved from ourworldindata.org and World Bank databases on educational metrics like literacy rate and socio-economic indicators such as unemployment rate from 2018 to 2022. Data were analysed using SPSS and findings revealed that there was no significant correlation between the socio-economic factors and literacy rate changes. Moreover, their literacy rate has improved when comparing the figures before and after the pandemic. Future studies can explore the underlying policies that have prompted equity and resilience in the European educational system.

1. Introduction

Lately, the field of education has been closely examined by professionals and key contributors in the industry. Several researches have focused on enhancing the value of educational standards through the collective efforts of students, parents, teachers and decision-makers, alongside fostering the essential skills required to thrive in the modern workforce. For example, Kennedy & Sundberg's (2020) examination of the relevance of equipping students with 21st-century skills reveals the lack of skills among students which may be evident in the current curriculum of schools around the world. Similarly, Gonzalez-Perez et al. (2022) demonstrated the need to develop school systems that are aimed at addressing sustainability issues that could be managed through education. As a result, the importance of understanding the present conditions of the educational system relates to the determination of the direction of the sector.

Current statistics concerning the state of education in the world show that over 1.6 billion children are affected by the crisis in the educational sector including the inability of certain countries to provide the right educational resources for students (Unicef, 2021). The educational sector in Europe has always been rated as one of the best in the world based on the availability of relevant infrastructure, the quality of educators, and the ability to help children develop relevant transferable skills (Gabriel et al., 2022). For these reasons, individuals from different countries around the world look to educational institutions in Europe to develop their educational systems. However, the increasing decline in education around the world has called for changes in the European educational system. Yet, this may not be required if there are no issues with the educational system in Europe. As a result, it becomes increasingly pivotal to examine the educational standards in Europe and determine the direction of the system.

This research aims to determine if, and to what extent the quality of education in Europe has declined in recent years. This will be done by examining the differences in several education-related metrics including the gender gap in the access to education, the learning-adjusted years, and the number of

children that are out of school. Other specific objectives include:

1) To identify and quantify the extent of decline in education across European countries.
2) To determine the countries that are experiencing the most significant declines in the educational sector.
3) To identify the underlying cause of the decline in education by examining the prediction of the decline using socio-economic factors such as income inequality and the unemployment rate.

2. Literature Review

A. Theoretical Framework

The social capital theory was developed by James Coleman on social patterns and argued that social patterns and processes contribute to the differences in the educational outcomes of students (Marsden, 2021). For example, if the performance of students is significant in specific communities, it might be a result of the investments and support provided by the members of such communities. In addition, this may be due to the involvement of the government bodies. Hence, parental support and the effort of the government to provide a background that supports the right educational system may be responsible for the development of educational development.

However, the social capital theory in the context of this study relates to the institutional level where the school community and leaders contribute the successful educational attainment. Examples of countries that have adopted the tenets of this theory include countries in East Asian areas such as Korea, Singapore, and Hong Kong (Zhu, 2021). By adopting this tenet, the learning atmosphere has improved with the inclusion of education structures that support the increasing quality of education and reduction of inequality within these learning groups.

The human capital theory provides another perspective concerning the quality of education within different countries in the world (Deming, 2022). This theory was developed by economists such as Gary Becker and Theodore Schultz who posited that individuals invest in their education to improve the level of productivity in society (Teixiera, 2023). Hence, parents are willing to spend on quality education to ensure that their children are skilled enough to transfer these skills within practicable settings. The funds provided by private people in society can help to finance the course of educational improvement in any country (Shaturev, 2021). As such some countries may depend on the provision of funds by private individuals to develop their education system. This has worked in countries like the UK where the country has attracted immigrants from around the world to fund the educational system and improve the infrastructure of the educational system (Caarls et al., 2021). However, this theory is limited in that it does not justify the difference in the socio-economic backgrounds of individuals as it relates to their ability to afford quality education.

B. Empirical Review

Smit et al. (2020) examined the future of work in Europe and noted the changes in the educational levels in the continent to meet the demands of work in the coming years. In this regard, the researcher noted the need for educational levels to improve to integrate learning outcomes that meet future demands for relevant skills. Before the COVID-19 pandemic, the educational sector was based on traditional arrangements including the utilization of non-digital materials and resources to provide education for young people and those engaging in tertiary education. However, the digitalization of educational resources improved with the occurrence of the COVID-19 pandemic. For example, Dobrila (2020) noted that a “Digital Education Action Plan” was adopted by European countries where efforts were made to digitalize the educational sector in Europe. Similarly, Zancajo et al. (2022) highlighted the continued use of digital innovations that improved due to the coronavirus outbreak of 2020 even after the pandemic. Hence, it is important to note that improvements in the overall structure of the educational system might have stemmed from the adoption of digitalization policies.

On the contrary, digitalization does not connote significant improvement in other facets of education that have long been discussed in several studies. For example, Blasko et al. (2022) demonstrated that the pandemic exposed the issue of educational inequalities in Europe where the access to educational materials varied based on socio-economic differences. In this regard, the affordability of educational resources including laptops and the internet limited students in Europe to access education during the pandemic. In yet another research study, Ayllon et al. (2023) addressed the impact of having digitally deprived children in Europe who risk losing out on the outcomes of education. However, in recent years, education in Europe has followed guidelines aimed at promoting the quality delivery of learning materials for students across various levels of education (Grief et al., 2021). As a result, it becomes difficult to assert that the changes that have affected the educational sector around the world have negatively impacted the European setting. This is because of the increasing implementation of programs and policies aimed at managing the problems of education including inequality and access to educational resources.

Relating to the explanation of the educational metrics using socio-economic indicators, Bilan et al. (2020) find the income distribution to be a relevant metric in analysing the use of social and economic well-being among individuals living in Europe. In addition, Agaisti & Bertoletti (2022) established that there is an association between the education quality provided across several schools in Europe and economic growth which illustrates the significance of finding the relationship between these variables. However, it was the research conducted by Rippin et al. (2020) that reveals the nature and strength of the relationship between income distribution and the education levels of individuals living in Europe. In this regard, it was discovered that lower income countries had lower educational groups compared to countries where income distribution was greater. In a similar study, Blasko et al. (2022) noted that the inequalities in Europe reflected imbalances in the educational attainment of Europeans with individuals who earn poorly likely to be affected by learning losses. In addition, such metrics like unemployment have been found to be related to the inequalities experienced in the educational settings with families of students that are mostly unemployed lacking the ability to sponsor the education of their children.

3. Methodology

The research adopts a quantitative research approach in analysing the decline in the quality of education and its delivery in Europe. A quantitative methodology is dominant in any field involving the collection of numerical data that helps in conducting simple and extremely complex data (Mohajan, 2020). By examining the existing data on relevant educational metrics, the researcher can develop insights into the trends of quality of education delivery in Europe. Hence, the adoption of the quantitative research approach allows the researcher to compare the findings before and after the COVID-19 pandemic.

While numerical data can be collected directly through observation or survey, secondary sources provide access to big data that explains the recent trends and the patterns of education in the world. As a result, the researcher retrieved relevant data from such databases as ourworldindata.org and the World Bank database. These two databases were searched using the query as education statistics in Europe while the data were filtered to get the right data towards analysis. The following datasets in the table below were retrieved from the databases towards analysis.

YL = Youth Literacy

GLR = Gender Literacy Ratio

OLR = Overall Literacy Rate

ENF = Gross National Enrolment Female

ENM = Gross National Enrolment Male

UNEM = Unemployment

EDI = Equivalized disposable income

Furthermore, the datasets included only data for countries in the European continent while the period was between (5-year frame) 2018 to 2022. The reason behind the choice of the year frame was that 2018 and 2019 served as periods before the COVID-19 pandemic while the years 2021 and 2022 served as periods after the COVID-19 pandemic. The data analysis was conducted using Statistical Package for Social Sciences (SPSS) version 27 while the researcher ensured that relevant descriptives and inferential statistics were analysed to achieve the research objectives.

4. Results

A. Demographic Analysis

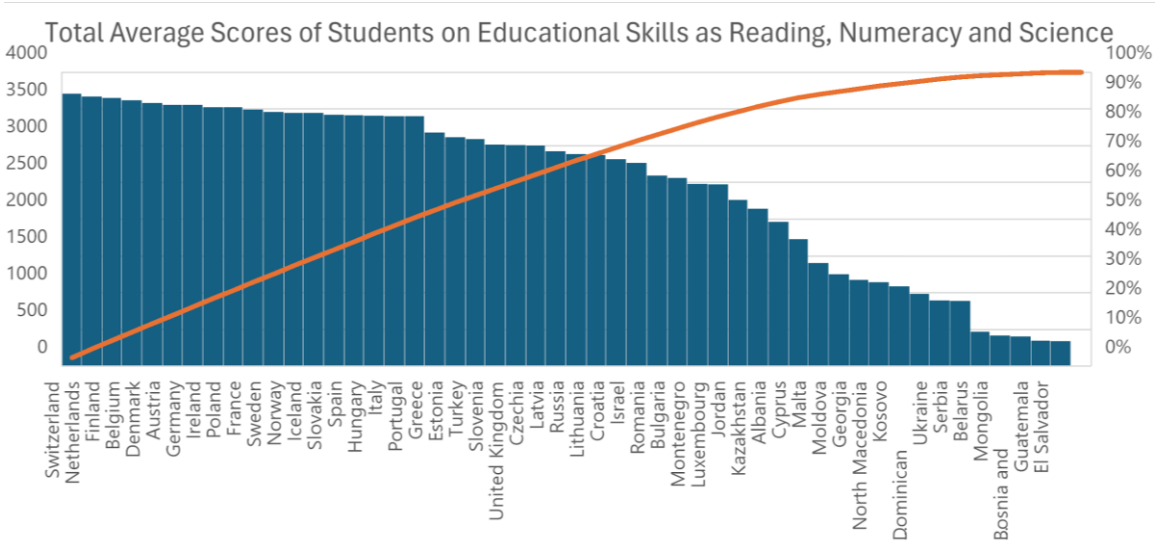

Fig. 1: The average score of students in Europe

Source: Ourworldindata.org

The graph in Fig.1 illustrates the average scores of students on educational skills in Europe. The chart was developed to examine countries with affected educational systems in Europe by comparing the total average scores of these countries. The findings reveal that students in Switzerland, Netherlands, Finland, Belgium, and Denmark score highly on relevant skills tests while those in Serbia, Belarus, Bosnia and Herzegovina scored low compared to their counterparts in other countries.

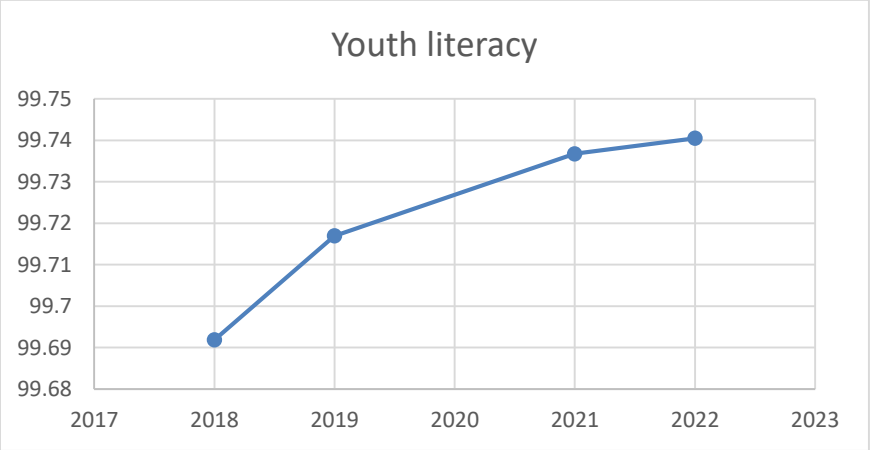

Fig. 2: The Rate of Youth Literacy in Europe from 2018 to 2022

Source: Ourworldindata.org

The line chart in Fig. 2 illustrates the increasing levels of youth literacy in Europe. Comparing the pre-COVID period of 2018 and 2019 as well as the post-COVID period of 2021 and 2022 shows that the youth literacy has continued to rise in Europe which dispels suggestions that there is a decline in the educational delivery in Europe.

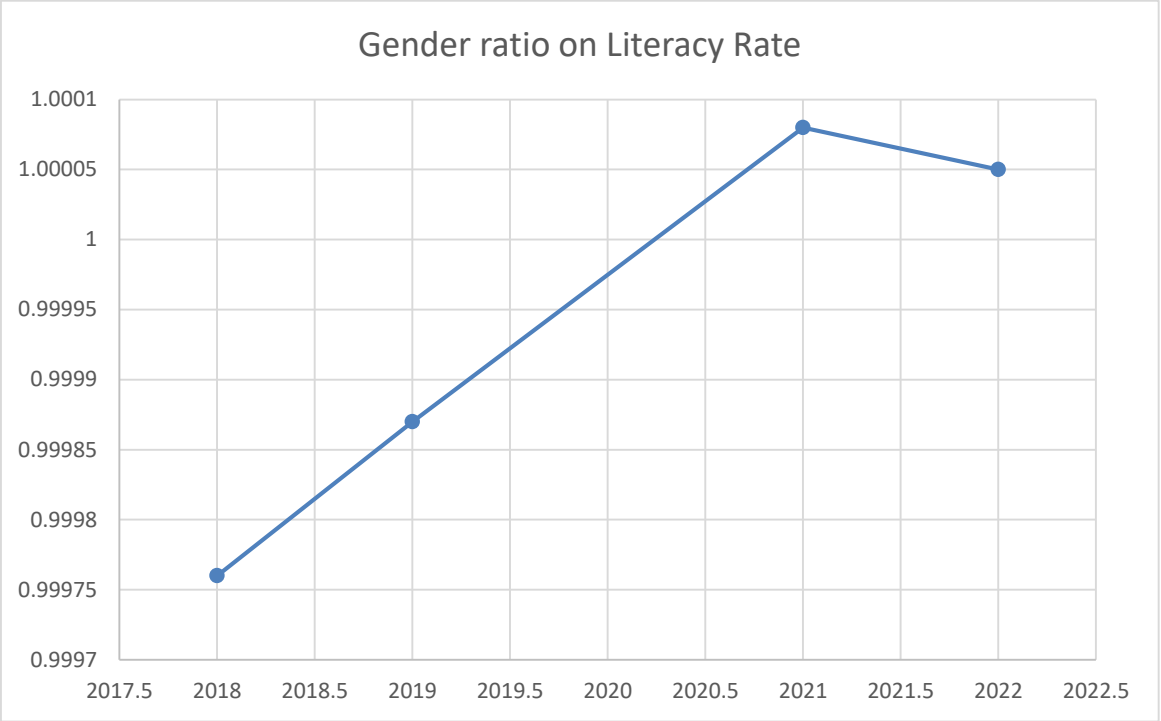

Fig. 3: The Gender ratio on Literacy Rate in Europe from 2018 to 2022

Source: Ourworldindata.org

The chart in Fig. 3 suggests that the gender gap in the literacy rate in Europe is on the increase when comparing the pre-COVID-19 years (2018 and 2019) as well as the post-COVID years (2021 and 2022). Although there was a decline in 2022, the gender ratio was still significant in that it was an approximate 1.1 male-to-female literacy rate among Europeans which is a significant aspect of explaining issues relating gender gap in the access of individuals to quality education. Hence, the suggestion that there is a decline in the quality of education in Europe might be argued against.

B. Inferential Analysis

Table I. Descriptive Statistics showing the distribution of data

		Range	Minimum	Maximum	Mean	Std. Deviation	Variance
1	YL	.08411	99.65637	99.74048	99.711638	.03220504	.001
2	GLR	.00034	.99976	1.00010	.9999467	.00014747	.000
3	OLR	.26169	98.27937	98.54106	98.4464533	.09892506	.010
4	ENF	7.59420	79.33953	86.93373	83.2476417	3.13998136	9.859
5	ENM	4.19934	64.47104	68.67038	66.5994500	1.68273180	2.832
6	UNEM	1.61038	5.821095	7.431477	6.76638128	.5411389054	.293
7	EDI	.7	29.9	30.6	30.317	.2714	.074

Source: SPSS Output Version 27

Table II: Pearson correlation between the variables in the study

		1	2	3	4	5	6	7
1	YL	1						
2	GLR	.802	1					
3	OLR	.989**	.830*	1				
4	ENF	.907*	.832*	.920**	1			
5	ENM	.913*	.816*	.921**	.998**	1		
6	UNEM	-.679	-.309	-.661	-.662	-.700	1	
7	EDI	-.402	-.388	-.379	-.332	-.370	.661	1

Source: SPSS Output Version 27

Table II shows that youth literacy (YL) is positively associated with the Overall literacy rate (OLR) which indicates that an increase in youth literacy is associated with an increase in the overall literacy rate. Other notable correlations include the correlation between the national enrolment among females and that of males which is an indication of gender equality in the access of the two genders to quality education.

Table III. The Contribution of Unemployment and Income inequality on the Literacy Rate in Europe

Variable	Unstandardized (B)	Coefficients SE	Standardized Beta (β)	t	p
Unemployment	-.133	.105	-.729	-1.267	.294
Income inequality	.034=7	.210	.103	.179	.869

Note. Constant = 98.211, F (2, 3) = 1.190, p >01, R^2 = .442

Table III shows that unemployment and income inequality did not predict changes in literacy rates in Europe (F (2,3) = 1.190, p >.01). This indicates that among several factors that could have contributed to the increase in the literacy rate in Europe, neither income nor unemployment explained these changes.

Table IV. The Contribution of Unemployment and Income inequality on the Gender Literacy Rate Ratio in Europe

Variable	Unstandardized (B)	Coefficients SE	Standardized Beta (β)	t	p
Unemployment	-.133	.455	-.092	-.131	.904
Income inequality	.000	.000	-.327	-.462	.675

Note. Constant =1.006, F (2.3) = .276, p >.01, R^2 = .394

Table IV shows that unemployment and income inequality did not predict changes in the gender literacy rate ratio in Europe F (2.3) = .276, p >.01, R^2 = .394.

5. Conclusion

The study was conducted to assess the decline in education levels in Europe by comparing relevant educational metrics before and after the COVID-19 pandemic. Through a quantitative approach, the research sought to achieve these objectives by examining education quality through the available empirical data. The statistical analysis using the data from 2018 to 2022 explored the trends and correlations in the educational system in Europe with different findings developed. Empirical evidence

reviewed in the research showed a mixed impact of the COVID-19 pandemic in Europe. Firstly, there was an increase in the literacy rate of individuals after the pandemic and the gender ratio in the literacy rate also improved. A potential explanation for this finding could be the influx of digitalization within the European educational system that has seen the adoption of policies aimed at tackling age-long issues in the continent (Zancajo et al., 2022). Moreover, the adherence to relevant guidelines in Europe concerning the delivery of educational resources might have accounted for the improvement in the existing data relation to literacy rate (Grief et al., 2021). Hence, the research argues that contrary to the popular assumption, there has not been a uniform decline in the quality of education in Europe. This is because certain countries are affected concerning the average scores recorded for core educational skills. Nonetheless, this did not explain a uniform decline in the levels of education in Europe. Further research findings related to the positive correlation between youth literacy and overall literacy underscores the importance of developing a continuous education process that takes into consideration both youth and adult education. In addition, there was a correlation between the male and female enrolment rates which justifies the argument that the gender gap in access to education may be significant in the world but not a main problem within Europe. Hitherto, the research findings reveal that unemployment and the extent of income inequalities did not account for the changes that has affected the literacy rate in Europe. This is against the regular notion concerning the association between such indicators and education. For example, Rippin et al. (2020) discovered that lower income countries had lower educational groups compared to countries where income distribution was greater. Blasko et al. (2022) noted that the inequalities in Europe reflected imbalances in the educational attainment of Europeans with individuals who earn poorly likely to be affected by learning losses. Acevado et al. (2020) found unemployment to be related to the inequalities in Europe. Although Bilan et al. (2020) found the income distribution to be a relevant metric in analysing the use of social and economic well-being among individuals living in Europe, it may not explain the issue of educational decline or development since the European system supports the assertions in the social capital theory. In this regard, the government is mostly responsible for the education of children and such parents' financial situation may have little influence on the educational attainment of their children. Moreover Agaisti & Bertoletti (2022) had established that there is an association between the education quality provided across several schools in Europe and economic growth which suggests that such a sector is taken with seriousness.

In conclusion, the research findings challenge the notion of a widespread decline in the education levels in Europe. While certain countries still face significant challenges, the overall trend of the educational system in Europe remains positive which is indicative of educational metrics like youth literacy rate, the ratio of enrolment, the average scores on educational skills, and overall literacy rate. The findings could be attributed to the resilience of the educational system in Europe during the COVID-19 pandemic and the adoption of relevant strategies to fully digitalize the education system in Europe. However, policymakers must continue to address issues relating to inequalities as they could disrupt the delivery of education. In addition, future studies could explore the outcomes of the policies developed by the governments of European countries to have a grasp of the current situation in Europe.

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