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RESOURCE ALLOCATION MODELS: EXAMINING THEIR INFLUENCE ON STUDENT ACHIEVEMENT AND EDUCATIONAL EQUITY

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I.ABSTRACT

This research examines the vital interconnection between student learning achievement and the models adapted by the school management in distributing resource allocation across diverse systems of education from varied continents around the world. The study reveals a solid connection between efficient and equitable distribution of resources and improved achievement of student learning. While the identified approaches, strategies and models to managing resources vary across the regions (e.g., data-driven models in Europe, collaborative models in the US, culturally sensitive models in Africa), the steady finding highlights the vital role of resource allocation in strategic way and effective utilization in cultivating high educational quality and guaranteeing impartial access to quality education. Moreover, study is suggested to classify and improve best practices for allocating resources in diverse contexts.

KEYWORDS: *Resource Allocation Models, School Leadership, Impartial Distribution, Student Learning Outcomes, Data Mining Technique*

II. INTRODUCTION

Resource allocation in education is not simply an activity or process but also an essential practical and ethical challenge that outlines the landscape of educational management equity (Willis et al., 2019) and deeply affects opportunities to learn among learners from varied backgrounds (Jacob, 2023). The impartial dispersal of resources—encircling the so-called financial resources, teachers with high qualifications, recent infrastructure, innovative technology, and sufficient relevant instructional materials —is crucial to construct a system of education that fosters learners' achievement and achieves their maximum potential (Maffea, 2020; Qureshi et al., 2021; Sakusita, 2021). Nevertheless, in a concrete landscape, the impartial distribution of resources is sometimes evident that resulting in scarcity of resources that hinders the goal of meeting the needs of school learners with diverse backgrounds (William et al., 2025; NU, 2025; US-OESE, 2025; QLD-Department of Education, 2025) This research explores a wide-ranging perspective from the management to discover every angle of the crucial interconnection between resource allocation and its effect on student learning outcomes in the landscape of educational equity. Instead of just concentrating on the impression of impartial distribution of resources, actual procedures and results will be scrutinized, which presents how resources are allotted in schools (Embodo et al., 2024; Hongjun et al., 2024) Diverse ways of allocating resources in the organization were carefully assessed to identify their abilities and weaknesses, and in attaining both equality and efficiency. Analyzing how varied funding procedures and allocation of resource practices impact equity, such as addressing the gaps and safeguarding equity to attain high-quality education for learners (Gupta, 2024; Willis, 2019; Boadi-Sarpong et al., 2023).

This in-depth analysis is rooted in an inclusive review of existing related literature on allotting resources in education, incorporating both recognized theoretical outlines and experiential research findings that have discovered the multifaceted relationship between the distribution of resources and student academic outcomes, as evidenced by educational results (Brew et al., 2021; Abragan et al., 2022). This further delves into how resource allocation, inspecting their primary expectations, their practical inferences, and their ability to address challenges handled by diverse contexts in the field of education, leading to better and more effective systems. In addition, resource utilization tracking and optimization are correspondingly investigated to measure educational outcomes (Syafaruddin, 2024; Joshi et al., 2025; Liao et al., 2024; Tlili et al., 2023). The findings will support makers of the policy and educators in making better conclusions about allotting resources to ensure impartial access and better outcomes of learning for all learners. The research recognizes areas necessitating further investigation to address the challenges of impartial distribution of resources and frame an unbiased and effective system of education. This incorporates exploring advanced resource allocation models, improved ways to evaluate needs, and growing accountability and transparency.

OBJECTIVES

This research aims to

- Assess the impact of resource allocation models and approaches on the school organization setup

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- Evaluate the learning outcomes of students who belong to the school organization where the resource allocation is injected
- Analyze the connection between models of allocating resources and the expansion of impartial practices of school management

III. METHODOLOGY

This research uses data mining as a proven technique in gathering data in research and studies (Fang, 2023; Staneviciene et al., 2024; Twin et al., 2024) to analyze the impact of positive management of resource allocation affects the learning outcomes of the students. This further discovers the diverse models used in school management in varied regions across the continent around the world. Related literature that tackled the management perspective and the scenario resulted from how a school institution adopts and implements the allocated budget, and how this manner affects the achievement of the students. Additionally, the best models will be identified that foster valuable information for school and educational policymakers.

From the data mining technique utilized in this study, a springboard of discovered data regarding school management related to allocation of resources and the best practices, approaches, and models adapted by the school leaders in impartially distributing allocated budget and how the latter affects the learning achievements of the students will be formulated allowing future researchers to endeavor further in investigating the other corner of the resource allocation issue in an educational system to attain the main goal- to give equitable access to high quality education to all learners from diverse background (UN- DESASD, 2017; Jardinez et al., 2024; Mudiwa, 2024; Dari, 2023)

IV.RESULTS

PRESENTATION OF DATA, INTERPRETATION, AND ANALYSIS

This section reflects the results of exploring the effectiveness of positive resource allocation approaches and models in the landscape of a successful school organization, and the learning outcomes of the students to achieve the main purpose of attaining high-quality education. This further discovers effective models in resource allocation management through data mining techniques, delving into and discovering recent related literature across the continents worldwide.

Variable 1. 1. Resource allocation for educational equity

This variable defines the approaches used to allocate resources in the landscape of school management. It covers the process of decision-making, standards utilized to decide priorities (e.g., strategic importance, urgency, priority), and the centralization or decentralization level in the process of allocating resources. Moreover, this study examines how a positive resource allocation model affects the environment of a school organization and the learning outcomes of the students.

CONTINENT	REASON	SOURCE
United States of America	An assembly of the teams of state education team came together to progress an improved way to evaluate how school institutions and districts utilize their allocated resources. The teams comprised state and local officials of education. From the six phases of the course, they acquired a learning about review of resources and how these resources relate to the achievement of students, and how to essentially put these reviews into action.	US-OESE, Resource Allocation Review (2025)
Europe (Netherlands)	A data-driven system is presented for augmenting the allocation of resources in research, recognizing strategic behavior that is potentially evident among researchers. Employed in school institutions, the model promotes the identification of the teacher, assessment of performance, and distribution of resources for improved learning of students. The study further examines the outlays of averting resource allocation approaches, which are self-serving among educators to guarantee distribution equity and expand school efficiency.	Grigoriev et al., Managing academic performance by optimal resource allocation. (2022)
Australia	School managers display growing skill in crafting a learning environment that is positive as their understanding grows. This comprises understanding the needs of the student, utilizing practices that an evidence-based for teaching and management of behavior, and impartial implementation of policies. Experienced school leaders offer support to educators, establish elevated expectations, and employ data to assess and boost the school learning environment. Further, employ the research for assumptions	QLD-Department of Education Standard 6: Managing effectively, 6d: Resource allocation) (2025)

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	to challenge and stability in addressing specific issues, studying the policies in school-wide settings.	
Asia (China)	There was emphasis on the necessity of improving allotted resources to achieve high-quality education. It was found that a positive management model of resource allocation delivers proposals to policies to raise the proficiency and logical distribution of resources in educational settings, as well as the assembly of stakeholders in the secondary education setup of the educational system in China.	Rongzhen, Z., A Study on the Efficiency of Resource Allocation and Influencing Factors in Secondary School Education in China (2024)
Latin America	The utilization of a mathematical decision-support model enables resource allocation in universities to advance to an innovation landscape. Due to its flexible framework, it enables customization that anchors to explicit missions and regional settings. This is not the only key element to address the challenges that the university is encountering, yet it serves as a part of a wider strategy. The resource allocation model supports and fosters existing models, approaches, and concepts supporting an all-inclusive approach to performance assessment of learners, allowing university institutions to gain curricular progress, classify in upgrading areas, and effectively direct the effort for enhancement.	Ferrero et al., Planning and resource allocation models in research-intensive universities: budget allocation and the search for excellence (2025)
Africa	Drawing from the existing related literature that reveals the issue of active learning in an African educational setup, the study discovers that the Culturo-Techno-Contextual approach, wherein context is regarded as the resource allocation in the landscape of school management aspect, is an effective model or approach that impacts teaching learners from African origins having diverse backgrounds. Demonstrating the utilization of the tripod of culture, technology, and context is the key element to fostering active learning for African-origin students.	Awaah et al., Perspective Chapter: New Active Learning Models in Africa (2022)

INTERPRETATION AND ANALYSIS

The analysis gathered from cross-continental data reveals a variation of an array of models and approaches to allocating resources in educational settings, each molded by unique and exclusive district contexts, importance, and developmental levels. Although methods vary, a shared thread ties them: the identification of an efficient allocation of resources is dominant for improving student learning outcomes and attaining wider educational objectives. The United States utilizes a collaborative, multi-level model that focuses on augmenting the assessment of the utilization of resources and its direct effect on students' learning achievement. This strategy stressed practical implementation and accountability, directing partnership between state and local agencies in education to guarantee effective management of resources and constant improvement. On the other hand, Europe selects a data-driven, performance-based model, utilizing quantitative data to heighten allocation of resources and address the potential partiality in the existing organizational system. This method highlights efficacy and equity, pointing to ensure more impartial distribution of allotted resources based on teachers' objective measured performance, and the learning outcomes of the students. The emphasis on data-informed decision-making proposes a cultured and theoretically more objective method, even though it might demand substantial investment in the collection of data and logical capabilities. This further underlines the significance of decision-making, which is evidence-based in the landscape of resource allocation.

Australia's approach is based on refining a constructive learning environment through effective management and leadership in the school landscape. This model selects an evidence-based teaching approach, strong management of behavior strategies, and solid leadership support for teachers. The importance of nurturing a supportive environment of learning highlights a holistic approach that gives importance to the human resources and constant upgrading through data-driven evaluation and iterative revision of strategies. This method may be mainly impactful in contexts where educators' moral and professional advancement are key factors in students' successful learning outcomes. In Asia, particularly in China, the model stresses policy-driven developments in allocating resources, aiming for effective and equitable dispersal of resources with top-down policy changes and functioning stakeholder engagement. This model underlines the significance of aligning strategies in allocating resources with the wider goals of education and fostering transparency and accountability in the utilization of resources. The emphasis on policy submits an approach

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systemically, aiming at achieving extensive development in the quality of education.

Latin America employs a tailored mathematical decision-support model for allocation of resources in universities, permitting customization grounded on exact institutional missions and regional contexts. The flexibility of the model permits institutions to contextualize their allocated resources' strategies to their unique settings while influencing decision-making from data-driven settings. While recognizing its role as one factor of a wider strategic backbone, this model reveals a commitment to enhancing the utilization of resources with quantitative investigation and informed decision-making.

Lastly, the African model, illustrated by the Culturo-Techno-Contextual model, underlines the crucial importance of reflecting cultural and technological backgrounds when allocating resources in the school landscape. This approach acknowledges the unique opportunities and challenges presented by varied cultural and technological setups and stresses the essential for culture-sensitive and context-appropriate allocation of resource strategies. This points to the significance of tailoring strategies for resource allocation to the explicit needs and features of diverse learners in the learning environments. In all, this cross-regional investigation tells a rich landscape of approaches and models to the allocation of resources in education, each displaying the unique economic, political, and socio-cultural contexts of its district. While these models present different challenges and strengths, the main theme is the essential need for planned, data-informed, and contextually sensitive allocation of resources to expand outcomes in the educational setting and attain equity in access to high-quality education. Moreover, was comparison of the effectiveness and continuing impacts of diverse models is necessary to update the progress of best practices for allocating resources in the educational system around the world to attain high-quality education.

Variable 2. Resource allocation for students' learning outcomes

This segment reveals student achievements as one of the variables in the research, after being impacted by the different models and approaches of resource allocation in the school setting. This, henceforth, demonstrates how impartial resource allocation by the school management enhances school resources, which augments the learning outcomes and promotes positive school leadership management within and across the continents of the world.

CONTINENT	REASON	SOURCE
Africa (Limpopo Province)	The manner school institutions utilize their allotted resources strongly affects the learning achievements of students. Institutions with better facilities, advanced materials, and competent teachers have learners who perform better. Schools with insufficient resources manage to have learners who perform less.	Mmbengeni et al., Assessing the Correlation Between School Resource Utilization and Learners' Success in South African Public Education: A Case of Limpopo Province (2024)
(Sierra Leone)	The growing involvement of the government fosters better-quality learning outcomes of students in Sierra Leone's development of human capital. Having the government involved in supporting curricular relevance to the demand of the global market employment, and fiscal resource allocation, particularly to physical improvement of the school, has proven impactful in augmenting learning outcomes of the students of Sierra Leone.	Kamarai et al., Government Intervention, Curriculum Relevance And Financial Resource Allocation: Impacts on Student Learning Outcomes in Human Capital Development in Sierra Leone (2024)
Latin America (Caribbean Countries)	Augmented resource allocation in the educational system of the countries of Latin America upgraded the completion rates of the school institution and lessened the gap in education with well-developed countries. School guidelines and policies regarding allocating resources are significantly emphasized and suggested for enhancing and attaining high-quality education.	Bertoni et al., School Finance in Latin America: A Conceptual Framework and a Review of Policies (2018)
United States of America	The connection between school budgeting and the achievement of student a has been argued for decades, affecting the funding decision in the school setting. Early research found a small relationship between budgeting and the academic success of learners, frequently due to flawed approaches. In recent studies, enhanced studies remain displaying the fact that resource allocation is crucial, not simply the amount expended. Nevertheless, research hasn't acknowledged the exact and best practice that claims to be effective in allocating resources in school funding to augment the achievement of the school setting. Moreover, exploration	Handel et al., Chapter 3 - US school finance: Resources and outcomes (2023)

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	on the aspects of policies like improvements of physical facilities in schools, smaller numbers of students in classes, or teacher monetary incentives hasn't revealed strong aids in the US education system.	
Asia (Sri Lanka)	The factors from the school level, which include the proportional distribution of resource allocation, enable Math and Language teachers to support grade five scholar learners to pass the O-Level exam. The landscape displays an impactful result from the impartial allocation of budgeted resources in the school setting to the learning outcomes of the students.	Abayasekara et al., School-level resource allocation and education outcomes. International Journal of Educational Development (2017)
(Philippines)	The essential role of well-sustained substructure and diverse, manageable resources of learning in improving the abilities of reading and writing, with differences discovered between urban and rural school institutions, is evident. Additionally, the necessity to invest in both educational and physical resources was found to close the gap in the development of literacy development and boost the total educational outcomes in the scenario of public schools.	William et al., The Impact of Learning Resources and School Infrastructure on Literacy Skills in Philippine Public Elementary Schools. (2025).
Australia	Enhancing technology from the resource allocation in school institutions through monitoring the infrastructure is necessary for supervising IT spending more proficiently. By implementing a proactive method to monitoring, academic institutions can increase their effectiveness, reduce expenses, progress security, and sustain learning experiences excellently.	Berndt, F., Opinion: Optimising resource allocation in schools (2024)
Europe	The positive implementation of Europe's learning outcomes-based education is carefully tied to the allocation of resources. Adequate resources are essential for revisions of curriculum, programs for teacher professional development, and collaboration with school managers. The uneven advancement across countries and school institutions stresses the significance of equitable allocation of resources. The lack of sufficient support deficits in the approaches in attaining learning outcomes among students. Lastly, efficient management of resource allocation is crucial for cultivating the learning outcomes of students across all the sectors of the educational system.	Cedefop, Application of learning outcomes approaches across Europe: a comparative study. (2016)

INTERPRETATION AND ANALYSIS

The data provided stresses the crucial role of allocating resources in molding the learning outcomes of students crossways several regions, including Latin America, the United States, Africa, Australia, Europe, and Asia. In South Africa and Limpopo Province, it is manifested that the efficient utilization of resources allotted directly influences students' achievements. School institutions equipped with improved facilities, recent materials, and experienced teachers tend to create better students. On the contrary, schools with inadequate resources display students with fewer learning outcomes. The data fosters a scenario of ensuring efficient resource management to amplify their educational success. In Sierra Leone, the increasing involvement of the government in the picture of education has nurtured learning outcomes with better-quality education and aid to the growth of human capital. The support of the government for the relevance of the curriculum aligned with the demand of the global job market, alongside with allocation of resources pointed at refining and enhancing infrastructures in schools, positively impacted the performance of the students. This signifies that governmental involvement is essential for augmenting the quality of education, specifically in improving regions where the resources are scarce. The findings reveal that government intervention in a strategic manner can generate an environment encouraging enhanced students' learning outcomes.

Latin America displays significant developments in educational results due to increased allocation of resources. Amplified resource allocation inside Caribbean countries has led to advanced rates in the aspect of school completion and reduced educational gaps in more developed countries. The weight on the effectiveness of the policies in school concerning resource allocation underlines the significance of well-planned and

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strategic planning in the setting of education. Through prioritizing impartial and adequate allocation of resources, the enumerated countries can continue to improve the quality of education and guarantee that all learners have equal access to the provisions they need to attain success. In the United States, the interconnection between budgeting in school and the achievement of students has been an argued issue. While earlier studies specified a frail connection between the levels of funding and successful academic achievement, recent research stresses that how resources are allocated is critical. Despite this perception, a gap remains in the picture in identifying the most effective way to allocate resources. Moreover, inquiries into various policies and initiatives like enhancing physical facilities in schools or reducing class sizes have not consistently confirmed strong, beneficial impacts for the educational system. This implies a necessity for additional focused research and studies on efficient strategies for resource management that are directly correlated with the achievement of the student.

In Asia, specifically in the Philippines and Sri Lanka, the resource allocation significantly impacts educational learning outcomes. In Sri Lanka, equitably allocated resource distribution has empowered math and language educators to excellently support Grade Five learners in passing the O-Level exam. Likewise, in the Philippines, the significance of well-maintained infrastructure and diversely crafted resources of learning is evident in augmenting literacy skills crossways to urban and rural school institutions. The findings discover that set educational and physical resources investments are significant for closing the gaps in academic achievement and improving overall educational learning outcomes in public schools. Australia's model underlines the necessity of supervising resource allocation, more particularly in technology, to improve the effectiveness of the school and lessen costs. By implementing a proactive technique for managing IT spending, school institutions can increase their experiences in learning while guaranteeing efficient utilization of resources. This highlights the requirement of effective management in allocating resources to foster an impactful educational setup. Overall, the data signifies that the effective resource allocation and positive management of budgeted resources across all the sectors of education are critical factors for augmenting the learners' learning outcomes.

V.DISCUSSION

Findings

Findings reveal that there was a solid interconnection between effective allocation of resources and enhanced learning outcomes of the students. Across varied systems of education, from the collective, multi-level technique in the United States to the data-driven model in continental Europe and the culture-sensitive model in Africa, the effective and equitable distribution of allocated resources constantly emerges as a key element in student achievements. Whereas the specific approaches differ, it grounded on regional priorities and context (e.g., targeted investments in the Philippines, government engagement in Sierra Leone, technology structure monitoring in Australia), the full conclusion stays consistent: the strategic allocation of resources, joined with efficient management and utilization, is dominant for augmenting high quality in education and attaining equitable access to quality education. Further studies are needed to improve best practices for the allocation of resources in the landscape of diverse educational settings.

Conclusion

This study concludes that efficient and equitable allocation of resources is paramount for augmenting the learning outcomes of students across diversely crafted educational systems. While identified approaches and models to managing resources vary diversely to regional priorities and context, the constant finding shows that managing resource allocation strategic way, tied with effective utilization, is critical for increasing educational quality and guaranteeing equitable access to high-quality education. Additional research is suggested to identify and improve the best model for allocating resources in diverse educational settings.

VI. REFERENCES

1. *US-OESE (2025), Resource Allocation Review, US Department of Education Office of Elementary and Secondary Education (OESE), January 14, 2025 https://www.ed.gov/teaching-and-administration/lead-and-manage-my-school/state-support-network/cop/resource-allocation-review*
2. *Grigoriev, A., Mondrus, O. (2022) Managing academic performance by optimal resource allocation, Scientometrics, Springer; Akadémiai Kiadó, vol. 127(5), pages 2433-2453, May 2022 Handle: RePEc:spr:scient:v:127:y:2022:i:5:d:10.1007_s11192-022-04342-5 DOI: 10.1007/s11192-022-04342-5*
3. *Mmbengeni, V.N., Azwindini, M.M. (2024). Assessing the Correlation Between School Resource Utilization and Learners' Success in South African Public Education: A Case of Limpopo Province International Journal of Social Science Research and Review Volume 7, Issue 1 January, 2024 Pages: 77-90 http://dx.doi.org/10.47814/ijssrr.v7i1*
4. *Rongzhen, Z. (2024) A Study on the Efficiency of Resource Allocation and Influencing Factors in Secondary School Education in China HS Web of Conferences 200 SESS 2024, 02021 https://doi.org/10.1051/shsconf/202420002021*
5. *Bertoni, E., Elacqua, G., Marotta, L., Martínez, M., Soares, S., Santos, H., & Vegas, E. (2018). School Finance in Latin America: A Conceptual Framework and a Review of Policies. https://doi.org/10.18235/0001306*
6. *QLD-Department of Education (2025) Standard 6: Managing effectively, 6d: Resource allocation*
7. *https://alt-qed.qed.qld.gov.au/our-publications/standards/middle-leaders/Pages/managing-effectively.aspx*
8. *Ferrero, L.G., Salles-Filho, S.L., (2025), Planning and resource allocation models in research-intensive universities: budget allocation and the search for excellence, Humanities and Social Sciences Communications, April 2025 License: CC BY-NC-ND 4.0 DOI:10.1057/s41599-025-04778-z=*
9. *Awaah, F., Kombat, C., Ekwam, E. (2022). Perspective Chapter: New Active Learning Models in Africa. InTech Open. Open Access Peer-Reviewed Chapter Submitted: 05 May 2022 Reviewed: 09 May 2022 Published: 28 May 2022 DOI: 10.5772/intechopen.105217*
10. *Abayasekara, A., Arunatilake, N. (2017). School-level resource allocation and education outcomes. International*

ISSN (Online): 2455-3662
EPRA International Journal of Multidisciplinary Research (IJMR) - Peer Reviewed Journal
Volume: 11| Issue: 6| June 2025|| Journal DOI: 10.36713/epra2013 || SJIF Impact Factor 2025: 8.691 || ISI Value: 1.188

Journal of Educational Development Volume 61, July 2018, Pages 127-141 https://doi.org/10.1016/j.ijedudev.2017.12.010

11. *Handel, D., Hanushek, E. (2023) Chapter 3 - US school finance: Resources and outcomes Elsevier Handbook of the Economics of Education Volume 7, 2023, Pages 143-226 https://doi.org/10.1016/bs.hesedu.2023.03.003*
12. *Kamarai, S., M'Briwa, F., Sesay, A. (2024). Government intervention, curriculum relevance, and financial resource allocation: impacts on student learning outcomes in human capital Development in Sierra Leone Volume 7 | Issue 2 | 2024 DOI: 10.46827/ejpss.v7i2.1752*
13. *Cedefop (2016). Application of learning outcomes approaches across Europe: a comparative study. Luxembourg: Publications Office. Cedefop reference series; No 105. http://dx.doi.org/10.2801/735711*
14. *William, Bruce & Zafar, Muhammed & Levin, Samuel. (2025). The Impact of Learning Resources and School Infrastructure on Literacy Skills in Philippine Public Elementary Schools. researchgate.net/publication/388030878_The_Impact_of_Learning_Resources_and_School_Infrastructure_on_Literacy_Skills_in_Philippine_Public_Elementary_Schools*
15. *Berndt, F. (2024). Opinion: Optimising resource allocation in schools 28 Jun 2024 The Educator Australia, K/12 Higher Education https://www.theeducatoronline.com/k12/news/opinion-optimising-resource-allocation-in-schools/285024*
16. *UN- DESASD (2017) Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all (2017)https://unstats.un.org/sdgs/report/2017/goal-04/*
17. *Jardinez, M. J., & Natividad, L. R. (2024). The Advantages and Challenges of Inclusive Education: Striving for Equity in the Classroom. Shanlax International Journal of Education, 12(2), 57–65. DOI: https://doi.org/10.34293/education.v12i2.7182*
18. *Mudiwa, T. (2025). Equitable access to education: a key to inclusive economic growth Thrive January 24, 2025 https://thrivabilitymatters.org/equitable-access-to-education/*
19. *Dari, L. (2023). Diversity and Equity in Education: Fostering Inclusive Learning Environments Europass Teacher Academy, 31 OCTOBER 2023 https://www.teacheracademy.eu/blog/inclusive-learning/*
20. *Fang, F. (2023). A Study on the Application of Data Mining Techniques in the Management of Sustainable Education for Employment. Data Science Journal. 22. 10.5334/dsj-2023-023.*
21. *Stanevičienė, E., Gudonienė, D., Punys, V., Kukstys, A. (2024) A Case Study on the Data Mining-Based Prediction of Students' Performance for Effective and Sustainable E-Learning. Open Access Article 2024, 16(23), 10442; 23 October 2024 / Revised: 21 November 2024 / Accepted: 26 November 2024 / Published: 28 November 202*
22. *Twin, A., Yashina, N. (2024). What Is Data Mining? How It Works, Benefits, Techniques, and Examples Investopedia Updated February 23, 2024 https://www.investopedia.com/terms/d/datamining.asp*
23. *Willis, J., Krausen, K., Caparas, R., Taylor, T. (2019). Resource allocation strategies to support the four domains for rapid school improvement. The Center on School Turnaround ED602981, PDF (files.eric.ed.gov)*
24. *Jacob, A. (2023). Teachers' Effective Use of Educational Resources and Their Effect on Students' Learning. ÜNİVERSİTEPARK Bülten. 12. 83-98. 10.22521/unibulletin.2023.122.4.*
25. *https://www.researchgate.net/publication/377002162_Teachers'_Effective_Use_of_Educational_Resources_and_Their_Effect_on_Students'_Learning/citation/download*
26. *Maffea, J. (2020). Lack of Resources in Classrooms, English Department: Research for Change - Wicked Problems in Our World. 38. https://research.library.kutztown.edu/wickedproblems/38*
27. *Qureshi, Muhammad Asif & Khaskheli, Asadullah & Qureshi, Jawaid & Raza, Syed Ali & Qamar, Sara. (2021). Factors affecting students' learning performance through collaborative learning and engagement. Interactive Learning Environments. 31. 1-21. 10.1080/10494820.2021.1884886.*
28. *Sakusita, Macline. (2021). An investigation on the effects of inadequate educational resources for Social Studies at a selected primary school in Katima Circuit.. 10.13140/RG.2.2.32116.83840.*
29. *NU, (2025). Equity in Education: Understanding Equity in the Classroom. National University Blog (2025)https://www.nu.edu/blog/equity-in-education/#challenges*
30. *Embodo, C., Alonzo, R. (2024). Sufficiency of instructional resources and performance outcomes of technology and livelihood education students Vol. 11 Issue. 5 (May-2024) EPRA International Journal of Environmental Economics, Commerce and Educational Management DOI: https://doi.org/10.36713/epra16745*
31. *Hongjun,S., Jie, W., Hu, B.,Han, Y. (2024). The Influence of Students' Academic Performance on Their Employability in the Field of Education. British Journal of Teacher Education and Pedagogy. 3. 113-139. 10.32996/bjtep.2024.3.2.10.*
32. *Gupta, O. (2024). What is Resource Allocation, and Why is it Important?, Saviom, December 18, 2024 https://www.saviom.com/blog/what-is-resource-allocation-and-why-is-it-important/*
33. *Boadi-Sarpong, A. B., Agyei, P., Mensah, E, Peter A., (2023) Boateng Valley View Resource Allocation, Strategies for Maintaining*
34. *\Competitiveness and Achieving Innovation Success International Journal of Research and Scientific Innovation (IJRSI) ISSN No. 231-2705 | DOI: 10.51244/IJRSI | Volume X Issue VII July 2023 Received: 05 July 2023; Accepted: 18 July 2023; Published: 19 August 2023 https://doi.org/10.51244/IJRSI.2023.10724*
35. *Brew, E., Nketiah, B., Koranteng, R. (2021) A Literature Review of Academic Performance, an Insight into Factors and their Influences on Academic Outcomes of Students at Senior High Schools Open Access Library Journal, Vol 8 No.6, 2021*
36. *Abragan, F., Abarcas, V., Aquino, I.M., Bagongon, R. (2022) Research Review on K-12 Curriculum Implementation in The Philippines: A Generic Perspective, May 21, 2022, European Journal of Educational & Social Sciences, Volume 7, Issue 1, May 2022 ISSN: 2564-6621*
37. *Syafaruddin, Amiruddin, Ibbar, A., (2024) resource utilization tracking and optimization are correspondingly investigated to measure educational outcomes, IJELLACUSH. Vol. 2, No. 2 May 2024 e-ISSN: 2962-8725, Hal 116-125*

DOIhttps://doi.org/10.59024/ijellacush.v2i2.803

38. *Joshi, D., Khanal, J., Chapai, K.P., Adhikari, K. (2025) The Impact of digital resource on utilization of student learning outcomes and self-efficacy across different economic contexts: A comparative analysis of PISA 2022 International Journal of Educational Research Open, Volume 8, 2025 doi: 10.1016/j.ijedro.2025.100443/ January 26, 2025*
39. *Liao, H., Rizwana, G.H., Wasi, Y., Hassan Shah, U., (2024) Evaluation of educational resource utilization efficiency, regional technological heterogeneity, and total factor productivity change in 35 European countries. Published: January 19, 2024*
40. *https://doi.org/10.1371/journal.pone.0295979*
41. *Tlili, A., Garzón, J., Salha, S. et al. (2023). Are open educational resources (OER) and practices (OEP) effective in improving learning achievement? A meta-analysis and research synthesis. Int J Educ Technol High Educ 20, 54 (2023). https://doi.org/10.1186/s41239-023-00424-3*