

Criteria used to determine the equitable distribution of learning resources in public secondary schools in Misungwi District, Mwanza, Tanzania

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Received: 14 Sep 2023; Received in revised form: 25 Oct 2023; Accepted: 07 Nov 2023

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Abstract

Learning resources are important because they are utilized as the primary source of information for teachers and students during lessons. The study objective was, to explore the criteria determining equitable distribution of learning resources in public secondary schools. The study used a sequential explanatory mixed research design and was conducted in Misungwi district. The study used Purposive, stratified and simple random sampling to sample 78 respondents out of 718, in public secondary school teachers, Heads of Schools, Ward Education Officers, Ward Executive Officers and District Secondary Education Officer. Qualitative data obtained were analyzed thematically and described using words while quantitative data were analyzed using SPSS version 20. The study findings highlight that while there is a prevailing belief in the importance of the number of the students as a major criterion for learning resource distribution, the practical allocation process does not consistently align with this criterion. Challenges of resource inadequacy and delays reveal a mismatch between intended and actual distribution of leaning resources practices. Additionally, the study emphasizes the significance of factors such as school needs, community engagement, and transparency in influencing distribution decisions.

Keywords— Decentralization, Education, Local authority, Student, Teacher

I. INTRODUCTION

Decentralization in the context of education will be used to describe the reciprocal transfer of administrative powers or decision-making to local governments or to reduce bureaucracy. Regions, districts, towns, and school committees are examples of such entities (Baganda 2008 & Chen, *et al.*, 2022). For effective distribution of learning resources, decentralization process may use different criteria that revealed around the world. In Brazil the study conducted by Omeova *et al* (2021) demonstrated that the number of students and the degree of the school's demands are taken into account when distribution learning resources. This perspective concurs with Socias *et al.*, (2007) in California who asserted that the kind of school (conventional public or charter) and population density in the locations where schools are situated as the basis for distribution of learning resources. Additionally, in Nigeria, Obadara *et al.*, (2010) demonstrated that the distribution of educational resources was determined by the ratio of students to instructors and staff, which did not change

from year to year, by the variations in the demands of the students, and finally by openness and accountability. On top of that Ndiku (2014) conducted research in Kenya, in which presented the professional judgment model, the successful school district model, the cost function analysis model, and the evidence model. These models, which also represented the features of each particular school and its students, were utilized to demonstrate how the requirements of the student and the school are the primary factors for resource allocation in education (Cochran-Smith & Keefe, 2022 & Augustine & Karim, 2022).

One of the main goals of the Tanzanian government and foreign organizations is to promote the equitable distribution of learning resources through decentralization (Love-Koh *et al.*, 2020). Despite efforts to decentralize public services, such as education, experts have documented detrimental effects of educational decentralization in Tanzania, particularly on the process of distribution learning resources. Additionally, they demonstrate the lack of teaching and learning resources,

including libraries, labs, and textbooks, in some secondary schools. This may be the outcome of education stakeholders participating less in decision-making about school development and the identification of school needs. On top of that Delving et al (2012) revealed that there is inadequacy of learning resources to be used in school. This implies that learning resources are perhaps distributed without considering the school needs. Also the Insufficient learning and teaching resources (URT, 2008) as a result, many schools encounter low student performance, high absence rates, and dropout rates. If the issue continues, resources would be wasted, and the government's attempts to give every Tanzanian a high-quality, equal education will be ineffective. In this regard the study aimed to explore the criteria determining equitable distribution of learning resources in public secondary schools in Misungwi District.

The availability of learning materials, such as textbooks, libraries, laboratories, classrooms, laboratory apparatus and chemicals, has improved in connection to Misungwi District decentralization (Pamela, 2022). However, some of the public secondary schools in Misungwi District lack learning resources, while others have enough but do not utilize them, administrative difficulties are the cause of this (Ulanga, 2017). Thus, the distribution of learning materials disregards the requirements of the school. Due to this circumstance, the researcher was compelled to carry out this investigation to assess the contribution of decentralization process on promoting equitable distribution of learning resources for public secondary schools in Misungwi District.

II. LITERATURE REVIEW

One of the key elements for student achievement in secondary schools is the equitable allocation of learning materials. Socias *et al.*, (2007) distribution of learning resources is based according to the ratio of low-income children, English language learners, Hispanic students, and African Americans in the student body, learning resources are allocated throughout the school and divided into quartiles. This indicates that, as the research suggested, the allocation of educational resources fulfills the needs of the school. The study did not, however, specify the distribution channels for the learning materials and the research methodology used. While the current study focused on the equitable distribution of learning resources in public secondary schools, the previous study was more focused on the allocation of teaching and learning resources in middle and high schools. The number of students was the most important factor in determining how equitable the distribution of educational resources was.

According to Omeova, Cunha and Moussa's, (2021) the allocation of educational resources among high-needs and low-needs schools may be understood in two ways. This indicates that the degree of the school's demand is taken into account when distributing learning resources. As a result, the current study addresses the issue of the equitable distribution of learning resources by employing a mixed research approach with a sequential explanatory design. However, the study did not provide techniques that were utilized to evaluate the data. Helda and Syahrani (2022) implementation of national education standards established as benchmarks to guide education providers in delivering quality education across the nation. Although their study contributed significantly to enhancing the quality of education, it did not specifically delve into the criteria for determining the equitable distribution of learning resources in educational settings. This omission highlights a gap in their research, as it did not directly explore the ways in which resource allocation can be optimized for fairness. In contrast, the present study in Misungwi District was dedicated to understanding how the decentralization process contributes to the equitable allocation of learning resources. By employing a sequential explanatory mixed research design involving school heads, teachers, ward education officers, and ward executive officers, the current study sought to uncover the criteria and mechanisms that drive equitable resource distribution. This localized approach was expected to provide contextually relevant insights into promoting fairness in the distribution of learning resources within the Misungwi District.

Cochran-Smith and Keefe (2022) engaged in a conceptual exploration of equity within the context of teacher education. They differentiated between "thin equity" and "strong equity," shedding light on the varying interpretations and applications of the concept. Their work significantly contributed to clarifying the discourse on equity but did not delve into the specific criteria used to determine the equitable distribution of learning resources. This omission highlights the gap in addressing how the principles of equity can be operationalized in the context of resource allocation. The current study in Misungwi District addresses this gap by focusing on the decentralization process's role in promoting the equitable distribution of learning resources. By employing a mixed research design that integrates questionnaires and interviews with stakeholders such as school heads, secondary school teachers, ward education officers, and ward executive officers, the study aimed to identify and understand the criteria that contribute to equitable distribution. This comprehensive approach enabled the investigation of how the decentralization process can serve

as a mechanism for achieving fairness in resource distribution.

Schoenfeld, (2021) provided insightful perspectives on mathematical education, emphasizing the creation of mathematically rich and equitable learning environments. Their work underscored the challenges in nurturing mathematical thinking and addressing structural inequalities in educational settings. However, the study did not explicitly investigate the criteria for the equitable distribution of learning resources, leaving a gap in understanding how these principles can be practically implemented. The present study in Misungwi District bridges this gap by examining how the decentralization process contributes to the equitable distribution of learning resources in public secondary schools. The study employed a sequential explanatory mixed research design involving various stakeholders through questionnaires and interviews. This localized approach enables the identification of criteria and mechanisms that foster equitable distribution, providing insights specific to the Misungwi District context.

According to the Richards (2014) the student population, staff climate survey results, and school points were utilized as the criteria for distribution educational resources by employing quantitative data gathering techniques. The results of this investigation showed that the distribution of competent professors throughout the institution did not take equality into account. Because of this, there are not enough good teachers in the United States. The research did not explicitly identify how learning resources were dispersed; it generally explored the distribution of educational resources. As a result, the present study evaluated how fairly learning resources are distributed in public secondary schools. Ntukidem et al. (2011) showed that there was no discernible difference in how learning resources were distributed in public and private schools. This is because private schools had access to greater educational resources than did public schools. The results of this study demonstrated that there are no precise standards for distributing educational resources fairly in Nigerian public secondary schools. As a result, the present study evaluated how fairly learning resources are distributed in public secondary schools.

Additionally, in Nigeria, Obadara et al (2010) the distribution of educational resources was determined by the ratio of students to instructors and staff, which did not change from year to year, by the variations in the demands of the students, and finally by openness and accountability. According to these studies, all of these models were used in various countries. The report, however, did not make it apparent how educational resources were allocated. As a

result, the present study evaluated how fairly learning resources are distributed in secondary schools. In addition, although the present study employed a mixed method with a sequential explanatory design, the previous study employed a descriptive survey design with a sample of 1000 public secondary schools in Nigeria (6700 public schools and 4300 private schools).

Ndiku (2014) presented the professional judgment model, the successful school district model, the cost function analysis model, and the evidence model. These models, which also represented the features of each particular school and its students, were utilized in this study to demonstrate how the requirements of the student and the school are the primary factors for resource allocation in education. The aforementioned models demonstrated that the distribution of educational resources took into account the demands of the school and the student. However, the study found that these models were mostly applied in Western countries and did not apply to all developing countries. The impact of decentralization on the equitable distribution of learning resources in public secondary schools was thus assessed in the current study.

III. RESEARCH METHODOLOGY

The study applied mixed research approach and sequential explanatory design. The mixed research approach was chosen for this study since it allows the opportunity to rely on multiple research methodologies and data collection analysis procedures, which improves comprehension of the problem and makes it possible for the researcher to come up with better answers. The study used Purposive, stratified and simple random sampling to sample 78 respondents out of 718, including public secondary school teachers, Heads of Schools, Ward Education Officers, Ward Executive Officers and District Secondary Education Officer.

Instruments used in this study were questionnaire and interview, Questionnaire was used to gather data from the secondary school teachers. The questionnaire was potential in this study because enabled the researcher to collect data from large population of respondents within a short time. Also the researcher used a semi structured interview approach to interview secondary school heads, ward education officers, ward executive officer and district secondary education officer. Qualitative data obtained were analyzed thematically and described using words while quantitative data were analyzed using frequencies and percentages and presented in tables with the help of SPSS version 20.

Findings of the Study

Criteria used to determine the distribution of learning resources in public secondary schools

Teachers were requested to mention the significance criteria used by local authorities in the distribution of learning resources in public secondary schools.

Table 1: Mentioned Criteria

Criteria	Frequency	Percent
Number of students	30	48.3
School location	10	16.1
School economic status	5	8.0
Security	2	3.2
Degree of the school demand	15	24.1

Source: Field Data (2023)

Criteria used by local authorities in distributing learning resources in public secondary schools in Misungwi district (Table 1) are as follows: 48.3 percent of teachers indicated that the number of students is the major criterion used in

Table 2: Agreement/Disagreement with each statement (n=62)

Statements (School receives learning resources according to)	SD		D		N		A		SA	
	F	%	F	%	F	%	F	%	F	%
Does not receive variation in students' demand	23	37.1	9	14.5	5	8.1	16	25.8	9	14.5
No openness and accountability degree of school demand	25	40.3	14	22.6	10	16.1	9	14.5	4	6.5
School location	12	19.4	20	32.3	10	16.1	14	22.6	6	9.7
Economic status.	23	37.1	20	32.3	6	9.7	8	12.9	5	8.1

Source: Field data (2023)

The school does not receive learning resources according to the student's ratio

Concerning the statement "The school does not receive learning resources according to the students' ratio", data in table 4.5 show that 37.1% of respondents strongly disagreed with this statement, indicating a belief that learning resources are distributed based on student ratios. This suggests that the majority of participants perceive student population as a significant influence on learning resource distribution. This finding aligns with the study by Omeova, et al (2021), which emphasizes the importance of student population in determining equitable resource distribution. This implies that local authorities might be

the distribution of learning resources, while 3.2 percent of teachers indicated that security is the minor criterion used in distributing learning resources. Additionally, 24.1 percent of teachers indicated that the degree of school demand was used as a criterion in the distribution of learning resources, although 16.1 percent of the teachers indicated that school location was the criterion used in distributing learning resources. Last, 8.0 percent of the teachers indicated that school economic status is the criterion used in distributing learning resources. Generally, the data imply that teachers perceive the number of students as the major criterion used to distribute learning resources compared to other criteria, as it receives a high percentage, followed by the degree of school demand.

Agreement or disagreement with each statement concerning the stipulated criteria used by the local authorities in distributing learning resources

considering student ratios when distribution resources, which can lead to fairer distribution. Therefore, it is likely that student ratios play a key role in resource distribution decisions, contributing to a more equitable distribution of resources. Since the introduction of fee free education, the government has been sending capitation grants to the schools whereby the number of students in each school is taken as the main criterion for the allocation of learning resources.

The school receives learning resources according to variation in student's demands

Out of the respondents interviewed about the subject matter, 30.6% agreed with the statement, while 21.0%

disagreed with this statement. This division of opinions reflects uncertainty about whether learning resources are allocated based on students' demands. This implies that though, students' population is considered to be a major criterion for distribution of learning resources, the actual allocation of such resources does not cater for the students' demands. These findings are in line to Ntukidem et al. (2011) who also revealed disparities in resource allocation between public and private schools, suggesting that demand-based allocation might not consistently be applied. This suggests that though the local government authorities may participate in providing details about the needs of their respective schools, the government does too little in addressing the needs. This leads into unfair distribution of learning resources in the schools especially the ones allocated in rural areas like Misungwi district.

There is no openness and accountability in learning resource distribution

Regarding the statement "There is no openness and accountability in learning resource distribution", a significant 40.3% of respondents strongly disagreed and 22.6% of them disagreed with this statement, indicating a widespread belief in openness and accountability in resource distribution. The respondents believed that there is a considerable level of openness in the allocation of resources in the schools. These findings are in agreement to Obadara *et al.* (2010) who highlighted the importance of transparent allocation decisions. The results suggest that local authorities are taking steps to ensure open and accountable practices in learning resource distribution, consistent with the finding from previous studies. This implies that the efforts made to maintain transparency in allocation decisions are likely yielding positive outcomes, fostering a sense of trust and fairness in resource distribution processes (Kyeremeh and Kor, 2022). Distribution process is considered to be open since the criteria are known; however, there are still concerns about some resources to be distributed without regarding the needs of the students.

The school receives learning resources according to the degree of the school demands

On the statement "The school receives learning resources according to the degree of school demands", 35.5% of participants disagreed, while 19.4% agreed with this statement. This means that a large percentage of respondents disagreed with the statement indicating their dissatisfaction on the allocation of resources according to the needs of the schools. The implication is that the allocation of resources in the schools is perceived not to be addressing the needs of the respective schools. It is important for the school managers to consider the needs of

the school for proper and equitable allocation of resources. This aligns with Socias et al. (2007) who emphasized the influence of student demographics and school type on resource allocation. The implication is that while some participants perceive a connection between resource allocation and school demands, a significant portion does not. Hence, the findings suggest a potential disconnect between resource allocation decisions and the degree of school demands, highlighting the necessity for a more nuanced approach to allocation.

The school receives learning resources according to the school location

Coming to the statement "The school receives learning resources according to the school location (Rural or Urban)", Opinions on this statement were mixed, with 22.6% agreeing and 19.4% strongly disagreeing. This variation suggests differing perceptions about the influence of school location on resource allocation. Therefore, the results highlight the intricate balance between school location and other determining factors in the resource allocation process. This implies that sometimes the allocation of resources does not take into account the school location. According to Ndiku (2014), it is important for the authorities to consider school-specific features when distributing the resources. Failure to consider the school location may negatively affect the equitable distribution of resources as some schools in the rural areas have needs that are different from the schools allocated in urban areas. Failure of recognizing the school location also suggests that decentralization has not effectively contributed to equitable distribution of resources in the schools.

The school receiving learning resources according to its economic status

According to the subject matter 32.3% of the respondents disagreed and 20.0% strongly disagreed with this statement, indicating a lack of belief in economic status-based resource allocation. This implies that the distribution of learning resources in schools in Misungwi district is perceived not to be addressing the economic status of the schools. According to Richards (2014), effective distribution of resources should be determined by a number of factors including the economic status. However, the findings of the current study suggest that economic status might not be a dominant factor in resource allocation decisions. Therefore, the sentiment against economic status-based allocation, coupled with alignment to previous research, emphasizes that other criteria, such as student population and staff climate, are likely influencing the distribution of learning resources.

The findings offer insights into the perceptions and factors influencing the equitable distribution of learning resources in public secondary schools in the Misungwi District. The findings from this study align with and expand upon the insights from previous research, highlighting the importance of student ratios, community involvement, financial empowerment, and transparent allocation practices. However, there are areas of concern, such as the alignment between perceived demands and actual resource allocation, addressing the unique needs of schools, and the consideration of school location. To ensure a more equitable distribution of learning resources, authorities must navigate a complex interplay of criteria while fostering transparency, community engagement, and alignment with local needs. These findings emphasize the intricate nature of resource allocation decisions within a decentralized framework, emphasizing the need for ongoing research and continuous improvement to achieve equitable distribution of learning resources in public secondary schools. During interviews with the key informants, it was also revealed out that, the number of students per school was the major criterion followed with the degree of school demands, the school location and school economic status as criteria used by local authorities for the distribution of the learning resources in public secondary in Misungwi district.

The number of the students per school

Another criterion used to determine the distribution of learning resources is amount of students populated in a particular school. The respondents reported that during the process of allocating learning resources in public secondary schools, the number of the students is taken as the major criterion used by local authorities. During interview session, one Head of school had this to say:

“Here at the school, we allocate resources as they come in, considering the number of students and the needs of each grade and the number of teachers in each department. Priority is also given to classes or departments with more deficiencies together with classes which expect to do the national examinations.” (HOS, July 2023)

The findings above imply that learning resources allocation and distribution rely much on conditions set by administrators rather than the actual school and learning environment. Inadequate distribution of instructional resources stands on reality that some huge or limited number of students may be caused by adequacy or inadequacy of resources which make the learning environment to be conducive or un-conducive. The

findings correlate with previous results from Richards (2014) who suggested that, the student population was utilized as the criteria for allocating educational resources in secondary schools. In the same line Omeova et al (2021) asserted that the number of students is the most important factor in distributing learning resources per each school departments. However, during interview with some key informants, the responses suggest that while there is a belief among respondents that a number of the students play a significant role in resource allocation decisions, the practical distribution of learning resources doesn't consistently align with this criterion. The challenges such as resource inadequacy, delays, and mismatch between student population and available infrastructure imply a mismatch between the intended criterion of number of students and the actual execution of learning resource distribution. It highlights the need for improved implementation strategies and closer scrutiny of the allocation process to ensure that the allocation genuinely reflects the student population, thus promoting more equitable and effective distribution of learning resources in schools.

The degree of school demands

The degree of school demands is another theme acknowledged during interviews. In this theme most of respondents demonstrated that the degree of school demands conveyed as criterion used in distributing learning resources. This information was provided during interview with Ward education officer who was quoted saying that;

“As education administrator when I distribute learning resources to my schools, I also use the degree of school needs as criterion because there some schools have more needs than others. For example, you may find that a school has been established for that time and it happens that the government provides learning resources on the same time. For that matter, I will choose to distribute those learning resources to the newly established school because it has more needs than the old ones.” (WEO, July 2023)

From the findings above, it was revealed that the distribution of learning resources sometimes looks much on the lower versus higher degree needs of the school departments. Schools with higher needs are more likely to receive new resources than those with lower degree needs. In relation to this, the data from the interviews reveal the same criterion in resources allocation by considering

schools with higher demands such as new established than longstanding ones. This correlate with Omoeva, (2021), who revealed that, the degree of the school's demands should be taken into account when distributing learning resources, where by high-needs schools are to be resourced more than low-needs schools. Its implication is that when there is scarcity of learning resources, the local authorities give priorities to the schools with severe needs in allocation of resources.

School location

Apart from school demands and the degree of school needs, some of respondents acknowledged the school location as the criteria used to determine the allocation of learning and teaching resources to secondary schools in Misungwi district. This was evidenced during interview with DEO who argued that;

“Another criterion I use to distribute learning resources is looking on the school location. There are some schools are located in very rural areas where there is no way they can access online materials for example books. For that reason, there are times when we are distributing learning resources, priorities are given to schools located at very rural area at least they get hard copy books and those others who are in the environment of getting books in alternative ways like online books we always ask them to wait for another allocation.” (DEO, July 2023)

The above quotation reveals that when allocating learning resources, educational administrator's takes into account the school location. However, there were variability of opinion among other respondents, highlighting the intricate balance between school location and other determining factors in the resource allocation process. Schools in urban areas were found to have favorable access to learning resources when compared to those in rural areas. This is supported by Ntukidem et al. (2011) who assert that, it is important for the authorities to consider school-specific features like school location when distributing the resources. Failure to consider the school location may negatively affect the equitable distribution of resources as some schools in the rural areas have needs that are different from the schools allocated in urban areas.

School economic status

Some of interviewee reported that, school economic status is the criterion that local authorities used when they are allocating leaning resources. For example, schools with income generating activities are in position to even buy

some learning resources using their own sources instead of depending from local government sources. Although, this criterion is not used much compared to the other criteria mentioned above. Yet, it corresponds to the results by Richards (2014), who argued that, effective distribution of resources should be determined by a number of factors including the economic status. This implies that the allocation of learning resources in public secondary school may sometimes consider the financial status of the school. This is due to the fact that some schools are good economically and they can run school programs by using internal revenue. So, for that case local authorities sometimes count on that as the criterion when allocating or distributing learning resources in order to accommodate other schools with poor economic status.

IV. CONCLUSION

The criteria for equitable distribution of learning resources in public secondary schools in Misungwi District are influenced by factors such as number of the students, school needs, community engagement and transparency. Despite a prevailing belief in the importance of the number of the students, practical resource allocation doesn't always align with this criterion. Challenges of resource inadequacy and delays on allocation of resources indicate a mismatch between intended and actual distribution of learning resources. The study highlighted the need to enhance distribution practices to better align with intended criteria, ensuring that student needs and community involvement are adequately considered.

RECOMMENDATIONS

Based on the research findings, the government should enhance the alignment between learning resource distribution and intended criteria to be pursued to ensure equitable distribution of learning resources in public secondary schools within Misungwi District. This can be achieved by implementing mechanisms that prioritize student needs, taking into account practical challenges related to resource inadequacy and delays. Furthermore, continuous monitoring and evaluation of the allocation process should be undertaken to bridge the gap between perceived criteria and actual resource distribution.

ACKNOWLEDGEMENTS

This work was supported by the family members. I am grateful to my parents Mr. and Mrs. Ngata husband Herman Mashimba and my children for their support. Also, I would like to thank the Vice Chancellor for Research and Technology of St. Augustine University of Tanzania for supporting this study, as well as all

respondents who participated in this study during data collection.

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