

The influence of english medium of instruction on students' academic performance in technical institutions in Tanzania: a case of arusha technical college

Victor Ngaai*

Arusha Technical College, P. O. Box 296, Arusha- Tanzania

***Corresponding Author:** ngaaiivictor@gmail.com

Abstract

Keywords

Academic performance
Confidence
Continuous assessment
Medium of instruction

Article History

Received 2024-06-03
Accepted 2024-07-02

Copyright © 2024 by Author(s).
This is an open access article under the [CC BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license.

The main objective of this study was to explore the influence of English as a medium of instruction on students' academic Performance at Arusha Technical College in Tanzania. This came after observing how the two languages: Kiswahili and English act as medium of instruction from lower to the higher levels of education respectively. English, as a second language in Tanzania, and a medium of instruction in higher learning institutions has shown discrepancies in students' academic performance. Therefore, the study focused mainly on three specific objectives: to explore the use of English as a medium of instruction in terms of teachers'/students' competency and confidence of students at Arusha Technical College, to describe the student's academic performance in terms of proficiency in EMI, continuous assessment, and semester examination of students at Arusha Technical College, and to determine the relationship between the use of English as a Medium of instruction and the student's academic performance in Tanzania. The study employed a quantitative research method specifically using descriptive and correlational research design. The secondary data were collected through a literature review; while the primary data were obtained through a self-constructed questionnaire. Questionnaire data were analyzed through the use of the Statistical Package for Social Sciences version 24 (SPSS). The study used a sample size of 100 respondents from Arusha Technical College where the English language is used as a medium of instruction. The results of the study revealed that most students had sufficient English language mastery due to the background of their previous education level. This fact led to the understanding and success in speaking and writing good English. Further, the findings showed that the lecturers used code-switching and translation strategies to enable students to understand the lessons. The study recommends a need for further research to be conducted on other institutions of higher learning to make rational decisions about usefulness of the language of instruction.

INTRODUCTION

An important restriction of education is that teachers cannot simply transmit knowledge to students. The past decades have witnessed a growing global manifestation of the English medium of instruction (EMI) coupled with tremendous increased adoption of English as a Medium of Instruction among non-native-speaking countries. Conversely, several scholars have indicated that supporting quality English Medium of Instruction (EMI) has remained an overwhelming challenge among non-

native speakers. For example, in the Far East and Asian countries, Kirkgoz (2009) considered the perception of students and lecturers on the effectiveness of foreign language instruction in an English-medium university in Turkey. The study proved inadequate in preparing students effectively for curriculum objectives intended for academic purposes. Further, Yang et al. (2019) exposed that the Chinese faced challenges in using English as the medium of instruction. The challenge has resulted in unsatisfactory teaching due to inadequate interactions between instructors and learners. Further, Bolton (2017) found those higher education students in Singapore often code-switched between English and their first languages such as Colloquial Singapore English, Malay, Mandarin, and Indian languages. This tendency has implications for students' academic performance.

Further, Alkhresheh (2020) conducted a study in IAU to find the impact of Students' English level on academic performance in learning and research skills (LRSK), as well as communication skills courses. The findings showed a strong correlation between the student's level and their academic performance. It also revealed that students at the intermediate English level performed better than those at the beginning stage. On the views of the engineering professors in a study on English language education about English medium instruction, in his findings, Kim (2017) revealed that higher education students and instructors were sceptical about using a foreign language as the medium of instruction because it negatively affected their academic performance. Kim (2014) demonstrated that most professors believed that many students lacked sufficient English skills to successfully participate in EMI classes. Besides, the professors' backgrounds advocated they needed intensive English language training to provide adequate EMI.

Low levels of competence and proficiency in a medium of instruction have been seen to be hindering the effective use of the English language for teaching and learning. Kisaka (2015) associated cultural practices as a factor in the poor mastery of English when it comes to speaking the mother tongue or Kiswahili rather than English at home or use among the local community in Kilifi, Kenya. It is a common belief as a sign of pride and disrespect since it is a foreign language. Tanzania like in other non-native speaking countries; studies have been conducted as pertains to the medium of instruction. Ngussa (2017) sought to focus on the teacher trainees to determine the correlation between their interaction and the medium of instruction. Some of the factors established included language competence, while the medium of instruction (English or Kiswahili) did not affect the classroom or group integration. The study indicated that mastery or competence in a medium of instruction was a factor in improving the level of interaction.

A study conducted in Dodoma, Mtallo (2019) studied 10 Tertiary/ college levels in Dodoma in which the respondents were teachers and students. The findings revealed that the use of English as a Medium of instruction at the Tanzanian Tertiary/ college level had advantages and disadvantages. It was concluded that EMI has become taxing for the students to achieve their learning objectives. In Tanzania, technical education measures academic performance by following Competency-Based Education (CBET) issued by the National Council for Technical Education (NACTE). NACTE emphasizes CBET's use of multi-methods to evaluate students' academic performance. The methods should include take-home assignments, tests, practical projects, practical training, and internships. These methods are necessary to bridge the gap between educational delivery, labor market needs, society needs, and personal needs (NACTE, 2019).

Nevertheless, academic performance is closely associated with the medium of instruction. Successful academic performance at all levels of education depends on the medium of instruction that is familiar to both learners and instructors (UNESCO, 2016). Tian and Sun (2018) support the importance of the learning outcome of the school curriculum as a measure of quality education due to

the medium of instruction. It is measured by using both summative and formative evaluation. According to Byabato and Kisamo (2014), formative evaluation assessment tools include tests, portfolios, projects, and take-home assignments. Summative evaluation includes the final examination. Consideration of the choice of the medium of instruction is meant to ensure facilitation of effective communication, and consequently, for the users to realize expected outcomes. Helman (2020) recaps that in the context of education, a medium of instruction facilitates teachers to deliver knowledge; and it helps students to receive knowledge. Hence, a need for heightened competency and confidence in EMI on the key players in the teaching and learning processes.

Statement of the Problem

Kiswahili is the lingua franca of Tanzania, and it is the medium of instruction in education at the primary school level; yet, in the tertiary/ college level and Higher Education Institutions, English is engaged as the medium of instruction. In Tanzania like in other countries, empirical studies have proved the consequences for students in communities where English is not spoken outside of school, the English medium of instruction has acted as an obstacle to engagement with the curriculum. Moreover, research studies conducted globally, regionally, and locally on the topic of EMI have shown that teachers and students experience difficulties in comprehension and competence during lesson delivery(Ngussa, 2017; Mtallo, 2019; & Helman ,2020). Therefore, a cause for an obstacle in teaching and learning processes. The study sought to explore the influence of English as the Medium of Instruction in teaching and learning activities in Technical Institutions in Tanzania, particularly, at Arusha Technical College.

The objective was achieved by answering three research questions.

- 1) How is the use of English as a medium of instruction in terms of teachers'/students' competency and confidence of students at Arusha Technical College?
- 2) How is the student's academic performance in terms of proficiency in EMI, continuous assessment, and semester examination of students at Arusha Technical College?
- 3) Is there a significant relationship between the use of English as a medium of instruction and academic performance among students at Arusha Technical College?

METHODS

Research design

Cresswell (2018) highlights that the research design plays a crucial role as a structured framework that guides researchers in systematically collecting, analyzing, and interpreting data to address research questions or hypotheses. In this study, a descriptive research design was employed. Descriptive survey research aims to gather information about current phenomena by surveying individuals about their beliefs, attitudes, behaviors, or values (Mugenda, 2018). This design enables a clear and objective understanding of the study, providing an accurate depiction of the current situation without attempting to influence or change it. Additionally, descriptive research allows for the examination of multiple variables and their connections.

Population and Sample Size

The study targeted population include students of second year Diploma (NTA 6) and third year Bachelor's degree (NTA 8) students drawn from the population of diverse academic programs offered at Arusha Technical College. The sample of the study included students from diverse programs in the Diploma NTA 6; and diverse programs of the third year students in the Bachelor's degree during the Academic Year 2022/2023 from the Arusha Technical College, Arusha Municipality, Tanzania. The

sampling methods that was used include stratification methods. Arusha Technical College is located in Arusha Municipal. It offers various academic programs in which English is the medium of instruction used for all the classes. The sample was distributed as indicated in Table 1.

Table 1. Sample and Sample Size for Target Diploma NTA 6 Students

Programs Category	Population By Program	Sample Size	Sampling Method
1 Auto-Electric & Electronic Engineering	26	8	Random Sampling
2 Civil and Irrigation Engineering	24	8	Random Sampling
3 Computer Science	26	8	Random Sampling
4 Electrical Engineering	103	35	Random Sampling
5 Electronics & Telecomm. Engineering	40	15	Random Sampling
6 Laboratory Science and Technology	63	18	Random Sampling
7 Pipe Works, Oil and Gas Engineering.	24	8	Random Sampling
TOTAL	306	100	

Source: Field Data (2021)

The sampling process was as follows: A convenient sampling method was employed to select Arusha Technical College (ATC) out of the variety of Universities that operate in Arusha Municipal. The researcher opted for Stratified sampling to select the sample.

Data Collection

The researcher employed one method of data collection: the use of a set of questionnaires. Moreover, the researcher personally administered the data-gathering process at the Technical College in Arusha. Further, the researcher personally reviewed the academic records, including continuous assessment records and the Semester final examination results of the students. Closed-item questions were constructed by using a five-item Likert scale whereby respondents were instructed to provide their opinions among the choices including strongly disagree (1), disagree (2); not sure (3), agree (4), and strongly agree (5).

Data Analysis

Descriptive statistics was used to analyze the demographic information of the respondents to determine frequency counts and percentages. Data which were obtained through the quantitative method were analyzed using the SPSS software by the use of descriptive statistics to determine the mean scores and standard deviations in questions one and two. In question three, the researcher used the Pearson Product Moment Correlation coefficient (rho) to determine the relationship between variables. The Mean scores were interpreted by using the scale presented in Table 2.

Table 2. Mean Score Interpretation

Response	Option	Mean Score
Strongly Disagree	1	1.00 - 1.49
Disagree	2	1.50 - 2.49
Neutral	3	2.50 - 3.49
Agree	4	3.50 - 4.49
Strongly Agree	5	4.50 - 5.00

Source: Field Data (2024)

Validity and Reliability

To achieve reliability, a pilot study was conducted for selected students through purposive selection from among the typical population of students at the Arusha Technical College in Arusha. The participants were drawn from the various programs which were not targeted in the main study. Accordingly, the Cronbach Alpha reliability coefficient was used to determine the instrument's internal consistency. The Cronbach's alpha coefficient of above 0.6 was considered acceptable (Creswell, 2008). The coefficient alpha 0.70 or higher was considered reliable. As pertains to the Questionnaire, since the researcher self-developed the questionnaire through conceptualization and operationalization in concurrence with a comprehensive literature review, it was necessary to present it to the research experts for inspection and evaluation for further guidance. To enhance the instrument's content validity, the experts' comments were integrated to ensure the simplicity and clarity of all the questionnaire items.

RESULTS AND DISCUSSION

Demographic Characteristics of Respondents

The analysis of data started with the presentation of the demographic characteristics of respondents as indicated in Table 3. The demographics included the gender of respondents and the program of study.

Table 3. Demographic Characteristics of Respondents

Variable	Frequency	Percent
Gender Of Respondents		
Male	58	58
Female	42	42
Total	100	100
Program of Study		
Diploma	22	22
Bachelor	70	78
Total	100	100

Source: Field Data (2024)

As shown in Table 3, one of the ways used to describe participants was gender. As reflected in Table 3, both genders were involved in the study through the filling of the questionnaire. The male respondents, however, were 58 (58%) as compared to their female counterparts who constituted 42 (42%). Therefore, the result has revealed a simple majority of males as compared to their female counter part of sampled respondents who filled the questionnaire.

As far as the programs of study were concerned, 22 (22%) respondents were taking a diploma while 70 (70%) were taking a Bachelor's Degree. Therefore, bachelor's degree respondents constituted the greater majority as compared to those who belonged to diploma courses. The great majority figure is a manifestation that more and more young Tanzanians are currently determined to attain at least a Bachelor's degree as compared to those who are pursuing a diploma level.

Data Analysis for Research Questions

Research Question 1:

What is the medium of instruction competence level in terms of (a) mastery and (b) confidence by students at the Arusha Technical College?

The findings are presented in Tables 4 and 5

Table 4. Students' Mastery

SN	Mastery	Mean	SD	Interpretation
1	More often I speak English correctly	3.4600	.71661	Agree
2	I pronounce technical words of my profession with difficulties	3.3939	.75347	Agree
3	I have enough vocabulary to use in speech	3.3131	.73743	Agree
4	I understand my teachers as they speak English in class.	3.2200	.71887	Agree
5	I understand well the lecturers' English during class time	3.0900	.77973	Agree

Source: Field Data (2024)

As indicated in Table 4, the rating shows scores of the mean and the standard deviation of the self-perception of students at the Arusha Technical College on their English as a Medium of instruction competence and motivation in terms of mastery and (b) confidence in learning. The variables scored a mean between $M = 3.0900$ and $M = 3.4600$. The variable with the highest mean ($M = 3.4600$; $SD = .71661$) is the respondents who agreed that they speak correct English more often. The variable with the lowest mean ($M = 3.0900$; $SD = .77973$) the respondents agreed that they understand their teachers when presenting their lessons in English. In the next variable with the mean of ($M = 3.3939$; $SD = .75347$), the respondents agreed to indicate that they pronounce technical words of their profession with difficulties. The third variable with a mean score ($M = 3.3131$; $SD = .73743$) the respondents agreed that they have enough vocabulary to use in speech.

Table 5. Students' Confidence

SN	Confidence	Means	SD	Interpretation
1	Instructors assign English usage tasks for group discussions as	3.5306	.62925	Strongly agree
2	I am confident in delivering presentations using English	3.5051	.71961	Strongly agree
3	I speak English outside the classroom because it is beneficial to me	3.4200	.68431	Agree
4	I like speaking English.	3.3300	.66750	Agree
5	In class, students volunteer to ask questions in English for clarification	3.3030	.72075	Agree

Source: Field Data (2024)

Table 5 describes the students' confidence. The table indicates the mean score of between 3.50 to 4.00 for the first two items which means the respondents strongly agreed that instructors assign English usage tasks for group discussions and that they are confident in delivering presentations using the English language. The Respondents seem not to engage very much in asking questions in English as the mean score falls way below the average mean ($M = 3.3030$; $SD = .72075$). However, it appears teachers take their time to insist students through different tasks to make sure that students improve their English usage ($M = 3.5306$; $SD = .62925$). Statistically speaking, students do not speak a lot of English out of class ($M = 3.4200$; $SD = .68431$) and also do not feel like speaking

English ($M = 3.3300$; $SD = .66750$). All of these variables fall way below the average mean of (3.50 to 4.00).

Research Question 2:

What is the level of academic performance of students at the Arusha Technical College?

Data for this question were analyzed by using mean scores on the SPSS. The findings are displayed in Table 6.

Table 6. Students' Academic Performance

SN	Competence	Mean	SD	Interpretation
1	I am able to apply classroom knowledge in solving practical issues.	3.5052	.57958	Strongly Agree
2	My progress is at my own pace and not at the pace of the teacher	3.4600	.61002	Agree
3	Knowledge acquired is helpful in solving problems in my area.	3.4343	.64145	Agree
4	I am able to perform various tasks during practical sessions	3.3367	.70263	Agree

Source: Field Data (2024)

Table 6 gives a summary of the respondents' responses on how they perceived their competence in academic performance. Their responses ranged between $M=3.33$ (agree) and $M=3.50$ (strongly agree). Three items scored a mean ranging between 3.33 to 3.46. These can be verbally interpreted as agreeing that "I can perform various tasks during practical sessions ($M = 3.3367$; $SD = .70263$); Knowledge acquired is helpful in solving problems in my area ($M = 3.4343$; $SD = .64145$) and that "My progress is at my own pace and not at the pace of the teacher ($M = 3.4600$; $SD = .61002$).

The findings further imply that students agreed that their progress is at their own pace and not at the pace of the teachers, that knowledge acquired helps solve problems in their areas, and that they can perform various tasks during practical sessions. Therefore, students can use the acquired knowledge to perform actual tasks that are related to their areas of specialization.

Research Question 3:

Is there a significant relationship between competence in the medium of instruction and students' academic performance at the Arusha Technical College?

This research question sought to determine whether the independent variables namely competence in the medium of instruction and how they affect students' academic performance. The question called for testing of a null hypothesis which states: that there is no significant relationship between competence in the medium of instruction and students' academic performance at the Arusha Technical College. The findings are indicated in Table 7.

The null hypothesis was tested through the Pearson Product Moment Correlation Coefficient (ρ). The table shows a positive correlation between students' academic performance and students' medium of instruction competence ($r = .253$, $p = .011$), between academic performance and students' confidence ($r = .367$, $p = .000$). Therefore, the null hypothesis is rejected while maintaining that there is a significant relationship between competence in the medium of instruction and students' academic performance at the Arusha Technical College. Thus, the performance of students is influenced by both

students' medium of instruction competence and students' confidence in learning. The table further indicates a positive and moderate correlation between students' medium of instruction competence and students' confidence in learning ($r=.640$, $p=.011$). Therefore, students' competence in the language of instruction can be influenced by confidence in learning.

Table 7. Model Summary

		Competence	Confidence	Performance
Competence	Pearson Correlation	1	.648 ^{**}	.253 [*]
	Sig. (2-tailed)		.000	.011
	N	100	100	100
Pearson Correlation		.648 ^{**}	1	.367 ^{**}
		.000		.000
	N	100	100	100
Performance	Pearson Correlation	.253 [*]	.367 ^{**}	1
	Sig. (2-tailed)	.011	.000	
	N	100	100	100

Source: Field Data (2024) **. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Discussion

About the first research question, based on the findings of this study, there was a difference in academic performance. Therefore, it seemed that students who had used English as the medium of instruction at tertiary school levels had an important tool (English language) that enabled them to perform significantly better in academic performance. As Helman (2020) notes in the context of education, a medium of instruction facilitates teachers to deliver knowledge; and it helps students to receive knowledge. Hence, the a need for heightened competency and confidence in EMI on the key players in teaching and learning processes. The findings of the study revealed that the language of instruction used by students at the tertiary school level influenced significantly students' academic performance at this level.

Findings for the second research question further imply that students agreed that their progress is at their pace and not at the pace of the teacher, that knowledge acquired helps solve problems in their areas, and that they can perform various tasks during practical sessions. Therefore, students can use the acquired knowledge to perform actual tasks that are related to their area of specialization. Nzowa and Ngussa (2019) concluded that Language competencies are positively encouraged by the teachers' support, and students 'support for the learning to take place, consequently, the more the learners are motivated to support one another.

Findings in the third research question show that recommendations on how to improve the language used as a Medium of Instruction are as follows: Create English Clubs and conducting regular English debate in schools, English language to be used by both teachers and students inside and outside the classroom, English teachers should be well prepared in teachers college, Government to create conducive Environment to facilitate the use of English language at all levels of Education, workshop for English teachers, Motivation should be provided for good performers in English subject. (for teachers and students), English supporting clubs to be established and conducted in secondary schools and ultimately English to be used as the medium of instruction from the primary level. All these results match with the ones obtained from the quantitative study and hence justify the relevance of the study.

CONCLUSION

First, the students' medium of instruction competence level at the Arusha Technical College is good enough to sustain their learning process. They are likely to show active and confident engagement in learning if they understand the medium of instruction.

Students under investigation portrayed the ability to apply classroom knowledge in solving practical issues. The essence of this finding is that students under investigation took their studies in the areas of technical education which prepares them for hands-on activities. Therefore, students possess the ability to use the acquired knowledge to perform actual tasks that are related to their area of specialization.

The null hypothesis was rejected. Therefore, there is a significant relationship between competence in the medium of instruction and students' academic performance at the Arusha Technical College. Thus, the performance of students was influenced by both students' medium of instruction competence and students' confidence in learning. The study further established a positive and moderate correlation between students' medium of instruction competence and students' confidence in learning. Therefore, students' competence in the language of instruction can be influenced by confidence in learning.

Recommendations

Since students' competence in the medium of instruction was found to be an important factor in sustaining the learning process, classroom teachers in schools under investigation have to join hands to influence the use of the English language in all school programs so that students' ability to use the language can be enhanced.

The identified students' ability to apply classroom knowledge in solving practical issues needs to be appraised for them to even do much more with regard to application of theoretical concepts in real life situations, due to the nature of their study.

Since there is a significant relationship between competences in the medium of instruction and students' academic performance at the Arusha Technical College, teachers of languages need to play their best role to increase the competence of students in the medium of instruction so that better learning results can be realized.

REFERENCES

Byabato, S., & Kisamo, K. (2014). Implementation of School Based Continuous Assessment (CA) in Tanzania Ordinary Tertiary/ college level and its Implications on the Quality of Education. *Developing Country Studies*, 4(6), 55-62.

Bolton, K. (2017). English as a Medium of Instruction in Singapore Higher Education. In B. Fenton-Smith, P. Humphreys, & I. Walkinshaw, *English Medium Instruction in Higher Education in Asia-Pacific. Multilingual Education* (pp. 133-152). London: Springer.

Creswell, J. W. (2008). *Educational research: Planning, conducting and evaluating quantitative and qualitative research*. (3rd Ed.). New Jersey: Pearson Prentice Hall.

Helman, L. (2020). *Learning in a New Language. A Schoolwide Approach Support K-8 Emergent Bilinguals*. Virginia: ASCD.

Kim, E. G. (2017). *English Medium Instruction in Korean Higher Education: Challenges and Future Directions*. In B. Fenton-Smith, P. Humphreys, & I. Walkinshaw, *English Medium Instruction in Higher Education in Asia-Pacific* (pp. 53-69). London: Springer.

Kırkgöz, B. (2007). *'Language, democracy, and education in Asia'*. Discussion Paper No.14 Upsala: The Nordic Asia Institute.

Kisaka, A. (2015). *The Challenges of Implementation of Continuous Assessment in Physical Education Classes in Some Selected Addis Ababa High Schools (Unpublished Master Dissertation)*. Addis Ababa: Addis Ababa University.

Mtallo, G. R. (2015). Teaching and Learning English in Tanzania: Blessing or Curse? A Practical Review of Phan le Ha's Teaching English as an International Language. *Journal of Education and Practice*, 6(17), 118-123.

NACTE. (2019). *Information on Competence Based Curriculum Development*. Dar es Salaam: NACTE.

Ngusa, M. (2018). *Revisiting the Language of Instruction Policy in Tanzania: A Comparative Study of Geography Classes taught in Kiswahili and English*. LOITASA: Reflecting on phase I and entering phase II. 102-122. Dar es Salaam: E&D Vision Publishing Limited

Nzowa, G. & Baraka M. N. (2019). Correlation between classroom atmosphere and language competency as academic achievement among Tertiary/ college level in Arusha District, Tanzania

Tian, H., & Sun, Z. (2018). *Academic Achievement Assessment. Principles and Methodology*. New York: Springer.

UNESCO. (2016). *If you don't understand, how can you learn? Policy Paper 24*. Paris: UNESCO.

Yang, M., O'Sullivan, P. S., Irby, D. M., Chen, Z., Lin, C., & Lin, C. (2019). Challenges and adaptations in implementing an English-medium medical program:a case study in China. *BMC Medical Education*, 19, <https://doi.org/10.1186/s12909-018-1452-3>.