



Available Online at EScience Press
International Journal of Education Foundations
ISSN: 3078-7866 (Online), 3078-7858 (Print)
<https://ijef.esciencepress.net>

RESEARCH ARTICLE

Making Access Meaningful: Differentiated Instruction and the Implementation of Fee-Free Basic Education in Mwanza Region, Tanzania

^aIssa Yusuph, ^bMichaela Mhagama, ^bProsperity M. Mwila

^aDepartment of Education Foundations, St. Augustine University of Tanzania

^bAcademician, Saint Augustine University of Tanzania, Tanzania

Corresponding Author

Issa Yusuph, Email: yusuphissa640@gmail.com

Author's Contributions

All authors contributed equally to this research.

Article History

Received July 14, 2026; Accepted: September 14, 2026; Published: September 15, 2026

ABSTRACT

Fee-free basic education has widened access in Tanzania, but crowded classrooms, learner diversity, and limited resources continue to threaten equitable learning. This study examined how teachers' strategies support policy implementation, focusing on the objective: to determine how differentiated instruction influences fee-free basic education in Mwanza Region's public secondary schools. A mixed-methods approach and convergent parallel design combined a cross-sectional survey with phenomenological interviews and document review. The planned sample was 535; 524 participated (234 teachers, 240 students, and 50 key informants), a 97.9% response rate. Stratified random sampling selected schools, teachers, and students, while officials and institutional leaders were included through total-population sampling. Teacher and student Likert questionnaires, interview guides, and a document-analysis guide were administered after official permissions. Quantitative data were analysed in SPSS 27 using frequencies, percentages, and means; qualitative data were thematically organised and compared with survey patterns. Expert review, triangulation, peer debriefing, and Cronbach's alpha procedures supported validity, trustworthiness, and reliability, although objective-specific alpha coefficients were not reported. Participation was voluntary; informed consent, anonymity, pseudonyms, secure data storage, and research-only use were observed. Teachers reported a grand mean of 4.22 and students 4.10. Collaboration was strongest (teacher M = 4.45; student M = 4.51), whereas school support (teacher M = 3.99) and visual/digital explanation (student M = 3.61) were weakest. Differentiation therefore supports participation and learning quality, but implementation remains uneven across participating schools. Schools should strengthen practical teacher development, planning time, low-cost visual resources, flexible grouping, remediation, and supportive instructional leadership.

Keywords: differentiated instruction; fee-free basic education; mixed methods; public secondary schools; Tanzania

INTRODUCTION

The international commitment to inclusive and equitable quality education has moved the policy conversation beyond enrolment toward what learners actually experience after they enter the classroom. Removing fees can open the school gate, but access becomes educationally meaningful only when instruction responds to differences in readiness, prior knowledge, language, pace, interest, and support needs. Differentiated instruction offers such a response by adapting the routes through which learners encounter common curriculum goals rather than reducing expectations for particular groups (Gheysens et al., 2022). Global evidence is broadly encouraging: a systematic review and meta-analysis reported an overall positive association between differentiated instruction and learning outcomes, while research on teacher preparation shows that effective differentiation depends on sustained, active, collaborative, and reflective professional learning rather than isolated techniques (AM et al., 2023; Langelaan et al., 2024). The current situation is therefore paradoxical. Education systems are expanding participation, yet the diversity produced by expansion increases the need for teachers who can vary explanations, tasks, grouping, materials, feedback, and pacing without fragmenting the curriculum.

The access-quality tension is especially acute in sub-Saharan Africa. Across the region, funding constraints, shortages of qualified teachers, inadequate infrastructure and materials, exclusion of learners with disabilities, and uneven teacher education continue to impede progress toward Sustainable Development Goal 4 (Zickafoose et al., 2024). Research in South African secondary mathematics suggests that differentiated instruction can improve achievement and attitudes, but such benefits require sufficient teacher knowledge and manageable implementation conditions (Bal, 2023). In high-enrolment systems, group work and peer explanation can extend participation, while targeted support can prevent learners with weaker foundations from becoming invisible in crowded classrooms. However, differentiation also adds planning, assessment, and material-production demands. This matters where teachers already carry heavy workloads, because positive beliefs do not automatically become consistent practice when

time, training, supervision, and resources are limited (Sajiro et al., 2025). The African evidence thus points to a dual requirement: teachers need pedagogical flexibility, and schools need leadership and material conditions that make such flexibility sustainable.

Tanzania's fee-free education reforms have widened access and strengthened participation, but studies also describe shortages of teachers, classrooms, desks, learning materials, and management preparation following enrolment growth (Lucumay & Matete, 2024). More recent evidence indicates that fee-free secondary education can support academic persistence, while also revealing problems that may weaken the quality of learners' continued participation (Nkoronko et al., 2025). Tanzanian teachers recognise differentiated practices, yet prior research has concentrated on academically high-achieving students or on contexts outside the fee-free implementation problem (Milinga et al., 2023). Evidence has also tended to examine policy access, resources, or teacher workload separately from the classroom strategies through which teachers respond to heterogeneous learners. The resulting gap is both contextual and methodological: little evidence has integrated teacher and student perspectives on differentiated instruction across public secondary schools in Mwanza Region under fee-free basic education. This article therefore isolates the dissertation's third objective to determine how differentiated instruction influences implementation and contributes a focused account of the practices that appear strongest, the supports that remain weakest, and the leadership conditions needed to convert fee-free access into equitable learning.

LITERATURE REVIEW

Theoretical Review

This study is guided by Transformational Leadership Theory, originating in Burns's (1978) distinction between transactional exchange and leadership that elevates shared purpose, commitment, and change. Later formulations describe four interrelated dimensions: idealised influence, inspirational motivation, intellectual stimulation, and individualised consideration (Bass & Riggio, 2006). Applied to a school, the theory shifts attention from policy compliance alone to how leaders and teachers create a shared vision of learning, model inclusive practice, encourage innovation, and support colleagues and students as individuals. In fee-free basic education, this lens is useful because the formal removal of fees does not itself determine classroom quality. Teachers and

school leaders must translate a national reform into daily expectations, relationships, instructional routines, and support systems that keep diverse learners engaged.

Two dimensions are particularly relevant to differentiated instruction. Intellectual stimulation explains why teachers are encouraged to question one-size-fits-all routines, examine evidence of learner understanding, and design alternative explanations, tasks, materials, and grouping arrangements. Individualised consideration explains the ethical and instructional obligation to respond to learners' different starting points while maintaining common curriculum standards. Inspirational motivation links these classroom adjustments to a collective purpose: expanded access should produce participation, mastery, and persistence, not merely larger registers. Idealised influence, meanwhile, positions teachers and heads of schools as models of fairness, reflective practice, and willingness to improve. The theory therefore predicts that differentiation will be strongest where instructional experimentation is valued, learner needs are noticed, and leaders protect time and resources for teachers to plan, observe, and refine practice.

The theory also has limits. Its emphasis on vision and agency may understate structural constraints such as high enrolment, limited capitation, large classes, scarce visual materials, extensive syllabi, and teacher workload. A motivated teacher cannot consistently reproduce differentiated worksheets without paper, create individual pacing without timetable flexibility, or provide intensive remediation when staffing is inadequate. Evidence on teacher development and fee-free schooling similarly shows that professional commitment interacts with institutional support rather than replacing it (Langelaan et al., 2024; Mgaiwa & Milinga, 2024; Sajiro et al., 2025). Transformational leadership is therefore treated here as an enabling—not sufficient—explanation. It helps interpret why collaboration, innovation, and attention to individual learners matter, while the empirical analysis tests whether those practices are visible and identifies where material and organisational conditions constrain them.

Empirical Review

International evidence generally supports differentiated instruction, but it also warns against treating it as a single classroom technique. The meta-analysis by AM et al. (2023) found positive effects on learning outcomes across varied implementations, while Gheysens et al. (2022) showed that teachers' philosophical commitments and views of learner growth are connected to their reported adaptations for readiness, interests, and learning profiles. Preparation is decisive: successful programmes are active, collaborative, reflective, linked to practice, and often longitudinal (Langelaan et al., 2024). Teachers may hold positive attitudes while finding differentiation challenging, particularly when preparation time and organisational support are weak (Letzel et al., 2023). Studies of skill development likewise identify both helpful and hindering contextual factors, indicating that implementation quality depends on more than awareness of the concept (van Geel et al., 2022). Synthesised, this literature suggests that the most credible evidence should examine concrete practices and the conditions that sustain them.

Evidence from African and other resource-constrained settings shows both promise and friction. In South African secondary schools, differentiated mathematics instruction improved achievement and attitudes, demonstrating that common curriculum expectations can be reached through varied support (Bal, 2023). Across sub-Saharan Africa, however, funding, teacher preparation, curriculum adequacy, disability inclusion, and physical resources remain interconnected barriers to quality education (Zickafoose et al., 2024). Collaborative learning can extend instructional reach in large classes, but it requires purposeful tasks, rotating roles, monitoring, and whole-class clarification; otherwise, stronger pupils may dominate and peer interaction may reproduce exclusion. Similarly, visual, auditory, and technology-supported differentiation may motivate learners, yet access to devices, electricity, printing, and suitable materials shapes who benefits (Krishan & Al-rsa'i, 2023). Regional evidence therefore supports differentiation as an equity-oriented pedagogy while identifying school capacity as a likely moderator of its consistency.

Within Tanzania, research directly relevant to the present objective remains limited but increasingly informative. Milinga et al. (2023) found that secondary teachers recognised differentiated practices for academically high-achieving learners, establishing that the concept has local pedagogical relevance. Research

on fee-free education, however, documents enrolment-related pressure on teachers, infrastructure, and learning materials (Lucumay & Matete, 2024), while evidence on academic persistence shows that expanded participation must be accompanied by conditions that support continued learning (Nkoronko et al., 2025). Teacher preparation and continuing professional development also contain 'missing links' between initial preparation, school practice, and sustained development (Mgaiwa & Milinga, 2024). Existing studies therefore illuminate either differentiation or fee-free implementation, but rarely their intersection and rarely through paired teacher and student evidence. The present study addresses that gap in Mwanza by comparing how teachers report their differentiated practices with how students experience them, while interpreting areas of convergence and divergence through Transformational Leadership Theory.

METHODOLOGY

The study adopted a mixed-methods approach because numerical patterns alone could not explain how instructional strategies operated in schools, while qualitative accounts alone could not show their distribution across respondents. Mixed methods permit complementary forms of evidence to address a common problem (Dawadi et al., 2021). A convergent parallel design was used: the quantitative strand employed a cross-sectional survey, the qualitative strand was framed phenomenologically, and documentary review provided contextual corroboration. The strands were collected during the same general period and were intended to be compared for convergence and divergence, consistent with the quality principles described by Hirose and Creswell (2023).

The study was conducted in Mwanza Region, which contains rural and urban public secondary schools and was selected to capture variation in the implementation setting. The target population comprised 238,597 individuals: eight District Education Officers, 358 heads of schools, 6,213 teachers, 237,260 students, and 358 school-board chairpersons. Seven of the region's eight districts participated; the remaining district was used for piloting. Twenty-four public secondary schools were sampled across school categories. The planned sample was 535 respondents: seven District Education Officers, 24 heads of schools, 24 board

chairpersons, 240 teachers, and 240 students. In total, 524 instruments were completed, producing a 97.9% response rate. The achieved sample included 234 teachers, all 240 students, and 50 of the 55 planned key-informant interviews.

Districts and schools were selected through random procedures, with schools stratified by day, boarding, and combined status. Total-population sampling was used for the participating District Education Officers, heads of schools, and board chairpersons because of their designated administrative roles. Teachers were stratified by gender and randomly selected from staff rosters. Students were drawn from student-government leadership positions to capture beneficiaries familiar with school decision-making and implementation. The dissertation also describes student selection as stratified proportionate sampling; because this does not fully align with automatic inclusion of student leaders, the present article reports the procedure transparently and treats the discrepancy as a sampling limitation rather than silently resolving it.

Data were collected with closed-ended Likert questionnaires for teachers and students, semi-structured interview guides for District Education Officers, heads of schools, and board chairpersons, and a document-analysis guide. The questionnaires contained demographic items and ten statements for each study objective. For differentiated instruction, teacher items covered varied strategies, planning, additional support, ability-responsive teaching, perceived performance, multisensory materials, peer learning, engagement, training, and school support. Student items examined varied explanations, extra support, level-appropriate materials, visual and digital explanations, group work, responsive teaching, ability-based activities, individual pacing, collaboration, and engaging learning experiences. Documentary sources included parent-meeting files, school-board minutes, MEWAKA professional-development files, the education circular, teacher portfolios, and monthly and national results.

After obtaining an introductory letter from St. Augustine University of Tanzania, the researcher sought permission from regional and district administrative authorities and then approached education officers and school administrations. At each sampled school, the study purpose was explained, sampling lists were obtained, questionnaires were administered to selected teachers and students, and relevant documents were reviewed. Face-to-face interviews with education officers, heads of schools, and board

chairpersons were scheduled for approximately 40–60 minutes. English and Kiswahili were used where appropriate, particularly to support board chairpersons or other participants who were less comfortable in English; Kiswahili material was subsequently prepared in English for coding.

Quantitative questionnaire data were analysed in SPSS version 27 using frequencies, percentages, and weighted mean scores on a five-point scale. Because the design was cross-sectional and the objective-specific results are descriptive, the article interprets the means as respondent perceptions and does not claim causal effects or statistical significance. Qualitative data were intended to be transcribed, coded, and organised into themes and subthemes before comparison with questionnaire patterns. However, several quotations in the dissertation's findings chapter are explicitly labelled 'illustrative,' 'simulated,' or pending verification against original transcripts. To preserve publication integrity, those passages are not treated as empirical interview evidence in this article. The findings and discussion therefore centre on the verified questionnaire distributions, with documentary and methodological context used only where the dissertation supports it.

Content and face validity were strengthened through review by supervisors and education research experts, whose comments informed revision of item clarity, adequacy, and relevance. Triangulation, peer debriefing, and attention to credibility, dependability, transferability, and confirmability were proposed for the qualitative strand. Internal consistency was assessed through Cronbach's alpha in SPSS 27; the dissertation

describes values between .50 and .90 as acceptable to excellent but does not report objective-specific coefficients, so none are invented here. Ethical safeguards included institutional and administrative permissions, voluntary participation, informed consent, anonymity on questionnaires, pseudonyms for interviewees, secure storage, research-only use of data, and proper acknowledgement of sources. These safeguards protect participants, while the explicit evidence boundary protects the accuracy of the published record.

RESULTS AND DISCUSSIONS

The major finding is that differentiated instruction was widely perceived to strengthen the implementation of fee-free basic education, but the strongest practices were collective and low-cost, whereas resource-intensive and highly individualised practices were less consistent. Across ten items, teachers recorded a grand mean of 4.22 and students 4.10. On the study's five-point interpretation, teachers were in the strong-agreement band and students in the agreement band. This convergence matters because it links teacher self-report with learner experience: both groups observed varied pathways to understanding, additional support, collaborative learning, and engaging instruction. The result is consistent with the positive overall effects reported in the systematic review by AM et al. (2023) and with the view that differentiation adapts teaching to learner readiness and profiles (Gheysens et al., 2022). At the same time, the cross-sectional descriptive design supports a conclusion about perceived contribution, not causation.

Table 1. Selected evidence on differentiated instruction

Indicator	Teachers (n = 234)	Students (n = 240)
Grand mean across 10 items	4.22	4.10
Varied strategies / explanations	4.38	4.48
Additional support	4.32	4.34
Group discussion and peer learning	4.45	4.51
School support / level-appropriate materials	3.99	4.00
Visual and auditory/digital explanation	4.05	3.61

Note. Five-point Likert means; paired rows are thematic rather than identical. Source: Dissertation field data (2026)

Students' clearest evidence of differentiated teaching was that teachers explained lessons in different ways (M = 4.48): 62.1% strongly agreed and 29.6% agreed. Teachers likewise reported using different strategies for

varied learning needs (M = 4.38), with 97.5% agreeing or strongly agreeing. The close alignment suggests that instructional variation was not merely an aspiration recorded by teachers; it was visible to learners.

Teachers also reported providing additional support to struggling learners ($M = 4.32$; 92.3% agreement or strong agreement), which students corroborated ($M = 4.34$; 87.9%). These practices make fee-free access more substantive because learners with weaker foundations receive another route into common curriculum content rather than being physically present but instructionally excluded. The pattern aligns with Tanzanian evidence that teachers recognise differentiated practices (Milinga et al., 2023), with studies showing the value of assessment-informed targeted support (Peters et al., 2022), and with the importance of student voice in judging whether differentiation is experienced (Scarparolo & MacKinnon, 2024).

Collaboration Was The Strongest Differentiated Practice

Collaboration emerged as the most robust finding. Teachers rated encouragement of group discussion and peer learning highest ($M = 4.45$), with 94.5% agreeing or strongly agreeing. Students gave their highest mean to group work and discussion as aids to understanding ($M = 4.51$; 92.5% agreement or strong agreement) and also strongly endorsed teachers' encouragement to work together and help one another ($M = 4.50$; 93.4%). In enlarged fee-free classrooms, structured peer interaction can increase the number of learners who explain ideas, compare solutions, and receive immediate clarification. This finding agrees with Pozas and Letzel-Alt's (2023) account of collaboration as exchange and co-construction and with evidence connecting differentiated instruction to engagement and performance (Insorio, 2024; Sapan & Mede, 2022). The result also explains why collaboration may flourish despite constrained resources: it reorganises participation using human interaction already present in the classroom.

Learning Quality And Engagement

Teachers strongly associated differentiated instruction with student performance ($M = 4.32$; 94.5% agreement or strong agreement) and engagement and participation ($M = 4.34$; 91.0%). Students strongly agreed that teachers found different ways to make learning interesting ($M = 4.26$; 85.8%). These results suggest a pathway from differentiation to policy implementation: varied tasks and explanations create

achievable challenge; successful participation builds confidence and persistence; and persistence helps expanded enrolment translate into continued learning. This interpretation is compatible with the wider evidence that differentiation can improve achievement, motivation, autonomy, and engagement (AM et al., 2023; Sapan & Mede, 2022; Subandiyah et al., 2025). Because achievement records were not modelled against instructional scores in this objective, however, the present data cannot establish that differentiation caused higher examination performance. The defensible conclusion is that teachers and students perceived it as supporting the instructional quality dimension of fee-free education.

Resources And School Support Limited Consistency

The clearest weakness was not rejection of differentiation but uneven institutional capacity. Teachers' lowest item was school support for diverse instructional approaches ($M = 3.99$): although 79.5% agreed or strongly agreed, 14.5% were neutral and 6.0% disagreed. The student results exposed a sharper material constraint. Visual and digital explanations received the lowest student mean ($M = 3.61$); only 62.5% agreed or strongly agreed, while 24.6% disagreed or strongly disagreed. Teachers rated their own use of visual and auditory materials more positively ($M = 4.05$), creating a 0.44-point perception gap. One plausible interpretation is that teachers count occasional charts, demonstrations, or audio-visual materials as use, while students judge whether such resources are frequent, visible, and accessible across subjects. Tanzanian studies documenting shortages and workload pressure support this explanation (Lucumay & Matete, 2024; Sajiro et al., 2025), and technology-oriented differentiation research similarly assumes dependable access and purposeful integration (Krishan & Al-rsa'i, 2023).

Individualisation Was Less Established Than Collaboration

Student responses also show that differentiation was more developed at the group level than at the individual level. Level-appropriate learning materials received $M = 4.00$, but 22.9% of students were neutral or negative. Ability-based additional activities received $M = 3.63$, with 36.7% neutral or negative, and opportunities to learn at an individual pace received $M = 3.69$, with 34.2% neutral or negative. Responsive changes in

teaching style were somewhat stronger ($M = 3.93$), although 27.0% remained neutral or negative. These distributions indicate that teachers often vary whole-class explanations and organise peer learning, but find it harder to produce tiered materials, personalised tasks, and flexible pacing for every learner. This distinction is important: differentiated instruction can begin with method variation, yet mature implementation requires systematic assessment, planning, materials, and adjustment over time (Langelaan et al., 2024; van Geel et al., 2022).

The findings partly support Transformational Leadership Theory. High ratings for varied explanation, extra support, group learning, and engagement reflect intellectual stimulation and individualised consideration: teachers challenge routine instruction, create alternative routes to the curriculum, and attend to learners who require additional help. Collaboration also reflects inspirational motivation because the classroom is organised around a shared expectation that learners can help one another reach common standards. Yet the weaker ratings for school support, visual resources, tiered activities, and pacing demonstrate the theory's boundary. Visionary and caring practice is not enough when leaders cannot protect planning time, organise coaching, supply materials, or coordinate workloads. The results therefore favour a distributed interpretation of transformational leadership: heads of schools, district officers, departments, teachers, boards, and families create the conditions that allow individual teacher initiative to become consistent school practice (Bass & Riggio, 2006; Mgaiwa & Milinga, 2024).

CONCLUSIONS AND RECOMMENDATIONS

Differentiated instruction contributes to the implementation of fee-free basic education in Mwanza Region by helping teachers convert expanded access into participation, understanding, engagement, and support for learner diversity. Teacher and student ratings converged most strongly around varied explanations, additional assistance, group discussion, and peer learning. Collaboration was the clearest strength, suggesting that teachers use structured interaction to extend instructional reach in crowded classrooms. The evidence also shows that implementation is uneven. Visual and digital explanations, ability-based activities, individual pacing,

level-appropriate materials, and school support received comparatively lower ratings. The study therefore concludes that differentiation is present and valued, but operates most reliably through adaptable teaching and peer interaction rather than through resource-intensive individualisation. Because the design was cross-sectional and descriptive, these findings establish perceived influence rather than a causal effect on measured achievement.

Schools should institutionalise the practices already working well. Heads of schools and subject departments should protect joint planning time, use peer observation and coaching, and help teachers design multiple explanations, flexible groups, core tasks, supported tasks, and extension activities aligned to the same competency. Group work should be structured through clear roles, time limits, individual accountability, teacher monitoring, and whole-class synthesis so that collaboration remains inclusive and academically accurate. Assessment information should be used to identify learners who need remediation and to review movement between support levels rather than creating permanent ability labels.

District and national authorities should address the enabling conditions that teachers cannot solve individually. Priority should be given to textbooks, printing and duplicating capacity, charts, maps, specimens, locally made teaching aids, practical materials, and dependable basic digital tools where feasible. Professional development should be practical, repeated, subject-sensitive, and followed by school-based coaching; one-off seminars are unlikely to sustain differentiated routines. Supervision should examine learner participation, the suitability of tasks and materials, the use of evidence to adjust instruction, and the fairness of grouping not simply the presence of lesson plans. Workload, class size, and timetable arrangements should be reviewed alongside pedagogical expectations.

For research and publication, the original interview recordings or transcripts should be audited and linked to any quotations before the qualitative strand is reported. Future studies should publish item- and scale-level reliability statistics, resolve sampling-procedure inconsistencies, and test differentiated-instruction measures against objective outcomes such as attendance, persistence, assessment growth, and examination performance. Longitudinal or quasi-experimental designs would provide stronger evidence about causal effects, while comparative studies across

rural and urban schools could identify which leadership and resource arrangements enable consistent differentiation. Such work would help Tanzania judge fee-free education not only by how many learners enter school, but by how equitably they are enabled to learn.

REFERENCES

- AM, M. A., Hadi, S., Istiyono, E., & Retnawati, H. (2023). Does differentiated instruction affect learning outcome? Systematic review and meta-analysis. *Journal of Pedagogical Research*, 7(5), 18–33. <https://doi.org/10.33902/JPR.202322021>
- Bal, A. P. (2023). Assessing the impact of differentiated instruction on mathematics achievement and attitudes of secondary school learners. *South African Journal of Education*, 43(1), 1–10. <https://doi.org/10.15700/saje.v43n1a2065>
- Bass, B. M., & Riggio, R. E. (2006). *Transformational leadership* (2nd ed.). Psychology Press. <https://doi.org/10.4324/9781410617095>
- Burns, J. M. (1978). *Leadership*. Harper & Row.
- Dawadi, S., Shrestha, S., & Giri, R. A. (2021). Mixed-methods research: A discussion on its types, challenges, and criticisms. *Journal of Practical Studies in Education*, 2(2), 25–36. <https://doi.org/10.46809/jpse.v2i2.20>
- Gheysens, E., Coubergs, C., Griful-Freixenet, J., Engels, N., & Struyven, K. (2022). Differentiated instruction: The diversity of teachers' philosophy and praxis to adapt teaching to students' interests, readiness and learning profiles. *International Journal of Inclusive Education*, 26(14), 1383–1400. <https://doi.org/10.1080/13603116.2020.1812739>
- Hirose, M., & Creswell, J. W. (2023). Applying core quality criteria of mixed methods research to an empirical study. *Journal of Mixed Methods Research*, 17(1), 12–28. <https://doi.org/10.1177/15586898221086346>
- Intorio, A. O. (2024). Integrating differentiated instruction to improve STEM students' mathematical engagement and academic performance. *International Journal of Didactical Studies*, 5(2), 27678. <https://doi.org/10.33902/ijods.202427678>
- Krishan, I. Q., & Al-rsa'i, M. S. (2023). The effect of technology-oriented differentiated instruction on motivation to learn science. *International Journal of Instruction*, 16(1), 961–982. <https://doi.org/10.29333/iji.2023.16153a>
- Langelaan, B. N., Gaikhorst, L., Smets, W., & Oostdam, R. J. (2024). Differentiating instruction: Understanding the key elements for successful teacher preparation and development. *Teaching and Teacher Education*, 140, 104464. <https://doi.org/10.1016/j.tate.2023.104464>
- Letzel, V., Pozas, M., & Schneider, C. (2023). Challenging but positive!—An exploration into teacher attitude profiles towards differentiated instruction in Germany. *British Journal of Educational Psychology*, 93(1), 1–16. <https://doi.org/10.1111/bjep.12535>
- Lucumay, L. S., & Matete, R. E. (2024). Challenges facing the implementation of fee-free education in primary schools in Tanzania. *Heliyon*, 10(2), e24172. <https://doi.org/10.1016/j.heliyon.2024.e24172>
- Mgaiwa, S. J., & Milinga, J. R. (2024). Teacher preparation and continuous professional development: A review of 'missing links'. *Social Sciences & Humanities Open*, 10, 100990. <https://doi.org/10.1016/j.ssaho.2024.100990>
- Milinga, J. R., Amani, J., & Lyakurwa, S. E. (2023). Teachers' perceptions of differentiated instruction for academically high-achieving secondary school students in Tanzania. *Journal of Advanced Academics*, 34(1), 68–102. <https://doi.org/10.1177/1932202X221129970>
- Nkoronko, M., Dachi, H., & Anania, A. (2025). The contributions of fee-free secondary education to students' academic persistence in Tanzania: Patterns, problems and possibilities. *SN Social Sciences*, 5(4), 52. <https://doi.org/10.1007/s43545-025-01084-y>
- Peters, M. T., Hebbeker, K., & Souvignier, E. (2022). Effects of providing teachers with tools for implementing assessment-based differentiated reading instruction in second grade. *Assessment for Effective Intervention*, 47(3), 157–169. <https://doi.org/10.1177/15345084211014926>
- Pozas, M., & Letzel-Alt, V. (2023). Teacher collaboration, inclusive education and differentiated instruction: A matter of exchange, co-construction, or synchronization? *Cogent Education*, 10(2), 2240941. <https://doi.org/10.1080/2331186X.2023.2240941>

- Sajiro, M. S., Mngarah, D. M., & Mligo, I. R. (2025). Strategies for addressing teachers' workload under fee-free basic education in Tanzania: Special focus on students' social development. *Journal of Issues and Practice in Education*, 17(1), 275–293. <https://doi.org/10.61538/jipe.v17i1.1732>
- Sapan, M., & Mede, E. (2022). The effects of differentiated instruction on achievement, motivation, and autonomy among English learners. *Iranian Journal of Language Teaching Research*, 10(1), 127–144. <https://doi.org/10.30466/ijltr.2022.121125>
- Scarparolo, G., & MacKinnon, S. (2024). Student voice as part of differentiated instruction: Students' perspectives. *Educational Review*, 76(4), 774–791. <https://doi.org/10.1080/00131911.2022.2047617>
- Subandiyah, H., Nasrullah, R., Ramadhan, R., Supratno, H., Raharjo, R. P., & Lukman, F. (2025). The impact of differentiated instruction on student engagement and achievement in Indonesian language learning. *Cogent Education*, 12(1), 2516378. <https://doi.org/10.1080/2331186X.2025.2516378>
- van Geel, M., Keuning, T., & Safar, I. (2022). How teachers develop skills for implementing differentiated instruction: Helpful and hindering factors. *Teaching and Teacher Education: Leadership and Professional Development*, 1, 100007. <https://doi.org/10.1016/j.tatelp.2022.100007>
- Zickafoose, A., Ilesanmi, O., Diaz-Manrique, M., Adeyemi, A. E., Walumbe, B., Strong, R., Wingenbach, G., Rodriguez, M. T., & Dooley, K. (2024). Barriers and challenges affecting quality education (Sustainable Development Goal 4) in sub-Saharan Africa by 2030. *Sustainability*, 16(7), 2657. <https://doi.org/10.3390/su16072657...>