

BOOK OF ABSTRACTS

THE 42ND MAY ANNUAL INTERNATIONAL EDUCATION CONFERENCE 2025



Organizing Committee

MAIEC 2025



Wossen Getahun

Chair



Turuwark Zalalam

Lead, Technical
Committee



Mulugeta Yayeh, PhD

Lead, Publication
Committee



Abiy Menkir

Lead, Fund Raising
Committee



Ayenew Gezie, PhD

Memeber, Technical
Committee



Getu Shiferaw, PhD

Memeber, Publication
Committee



Tamiru Delelegn

Lead, Promotion
Committee



T/michael Getu, PhD

Memeber, Technical
Committee



Solomon Kassie

Lead, Hospitality
Committee

BOOK OF Abstracts

The 42nd May Annual
International
Education Conference
MAIEC 2025

Quality Education for Sustainable Social Transformation
in Challenging Contexts

Bahir Dar, Ethiopia

About the Conference

MAIEC 2025

The May Annual International Educational Conference, organized by the College of Education at Bahir Dar University, has stood as a flagship academic event for over four decades. Since its launch in 1975 E.C., the conference has grown into one of the most respected and enduring academic forums in both Bahir Dar University and Ethiopia at large.

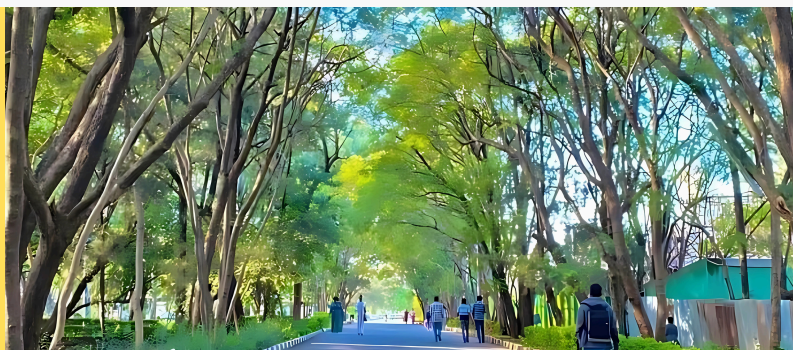
Now in its 42nd edition, the conference continues to serve as a platform for advancing quality education in Ethiopia and beyond by promoting scientific, problem-solving research and encouraging its practical application. Over the years, the event has attracted broad participation from universities, teacher education colleges, and educational leaders at both regional and national levels, including the Ministry of Education. It has also engaged embassies, NGOs, and other key stakeholders, many of whom are expected to contribute again this year.

Highlights of this Year's Conference

- A plenary and closing session featuring four keynote speeches
- Three parallel sessions encompassing 27 research presentations and related perspectives on the main theme.



Table of Contents



01

About the
Conference

02

Campus
Map

03

Welcome
Messages

04

Keynote
Speakers

05

Program

06

Abstracts

P E D A



To CoBE Campus

B172

COBE

B 170
COBE Library

**Student
Clinic**



Law Building

er Led Area
B4

alism &
nical



2

5.96



B 95





MESSAGE FROM THE PRESIDENT

MAIEC 2025

On behalf of Bahir Dar University, I extend to you all a heartfelt welcome to the 42nd May Annual International Education Conference. It is both a privilege and a responsibility to host this globally relevant dialogue on our campus, an academic institution rooted in Ethiopia's educational genesis and forward-looking aspirations.

Bahir Dar University is the proud successor of two of Ethiopia's foundational institutions: the Bahir Dar Polytechnic Institute and the Bahir Dar Teachers' College. The latter has since evolved into our esteemed College of Education, which has shouldered the scientific and logistical leadership of this international conference since its inception. I commend the College and the Organizing Committee for upholding the intellectual and policy relevance of this gathering and for building a legacy of inquiry, critical engagement, and progressive thought.

As a public research university in transition toward research-intensive autonomy, Bahir Dar University now hosts a diversified academic ecosystem: 113 undergraduate programs, 188 master's and 105 doctoral programs, 6 specialty and 12 sub-specialty programs in the School of Medicine and 10 professional certificate programs. These offerings are delivered across 16 academic units on nine campuses, supported by more than 12 research centers dedicated to contextual problem-solving and applied innovation. We envision the university not just as a transmitter of knowledge, but as a platform for transformative research, innovation, and service. BDU aspires to be a center of excellence in fields ranging from Education and Disaster Risk Management to Textile and Fashion Design, Maritime Engineering, and the Blue Economy.



Mengesha Ayene, PhD

**President
Bahir Dar University**



“In fragile settings, quality education becomes both a humanitarian response and a development strategy.”

In this regard, our College of Education stands as the national Center of Excellence in Teacher Education and Professional Development, a distinction that carries both scientific significance and systemic responsibility. To be a true Center of Excellence in education implies more than producing qualified graduates. It means functioning as a policy think tank, a pedagogical innovation lab, and a knowledge translation hub that bridges educational theory and classroom practice. The College's ongoing contributions to Ethiopia's national curriculum reform, the professionalization of teaching, digital pedagogy, and STEM teacher education attest to this mission.

This year's conference theme, “Quality Education for Sustainable Social Transformation in Challenging Contexts,” is both timely and empirically urgent. Across Ethiopia and other regions of the Global South, protracted conflict, forced displacement, economic hardship, and institutional instability have compromised the right to education and the capacity of education systems to respond. The impact is not only academic; it is societal. In fragile settings, quality education becomes both a humanitarian response and a development strategy; a tool for resilience, social cohesion, and equitable transformation. Yet, delivering such education in uncertain times requires rethinking traditional schooling models, teacher support, and governance. It demands evidence-informed innovations, cross-sectoral collaboration, and a deep commitment to equity and inclusion.

Let this gathering not be an end but a beginning of deeper scientific inquiry, more courageous policy dialogue, and stronger coalitions for impact. Let us reaffirm education as a public good and a strategic imperative for peace, prosperity, and sustainability. Let the knowledge generated here travel beyond these halls into classrooms, ministries, communities, and multilateral forums.

Once again, I thank you for joining us.

The 42nd May Annual International Education Conference

WELCOME MESSAGE

Asnakew Tagele, PhD

CEO of College of Education

On behalf of the College of Education, it is my distinct pleasure to warmly welcome you all to the 2025 May International Education Conference. We are honored by your presence here today and grateful that you have joined us for this important academic gathering.

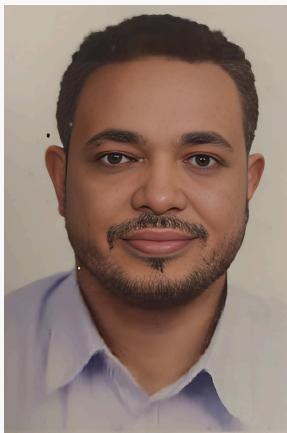
As the CEO of the CoE, I take great pride in addressing you at this 42nd annual conference. Over the years, this event has served as a key platform for the dissemination of research findings, the exchange of scholarly experiences, and the strengthening of research networks across the country and beyond.



This event continues our tradition of promoting research, collaboration and academic dialogue. This year, we take a step forward with plans to publish our proceedings with Springer. Moving forward, we also aim to expand our scholarly contributions through special issues and policy briefs—tools that help translate academic work into tangible impact. Achieving these goals requires a shared commitment to academic excellence. Therefore, we encourage all participants to present high-quality and rigorous research that meets international publication standards and can inform policy and practice. I would like to extend my sincere gratitude to all our invited speakers and presenters for their valuable contributions. I also wish to commend the organizing committee for their dedication and hard work in organizing a program of such depth and quality. Over the course of this conference, I am confident that we will witness the formation of new partnerships, the strengthening of existing alliances, and the cultivation of meaningful academic cooperation. I believe this gathering will be a catalyst for impactful research and enduring scholarly collaboration. Welcome, and best wishes for a productive and inspiring conference.

Keynote Speakers

MAIEC 2025



**Dr. Dawit
Mekonnen**

Addis Ababa University

Topic

Reimagining Education in
Ethiopia's Conflict-Affected
Areas: The Role of Higher
Education Institutions



**Dr. Tassew
Zewdie**

Creative Associates
International

Topic

Education in Times of Disruption
and Instability: Strategies for
Psychosocial Support, Student
Reintegration, and Alternative
Learning Pathways

Quality Education for Sustainable Social Transformation in Challenging Contexts

Keynote Speakers

MAIEC 2025



Prof. Abiy Yigzaw

Professor of Teaching
English Language as a
Foreign Language
Bahir Dar University

Topic

Integration of
Indigenous knowledge
into the Education System



Dr. Quentin Wodon

Director of
UNESCO IICBA

Topic

Education in Times of
Disruption and Instability

Quality Education for Sustainable Social Transformation in Challenging Contexts

Day One: May 16th, 2025

Morning Session

Plenary Session

Venue: Auditorium

Link: <https://meet.jit.si/MayConferenceKeynoteSpeech42>



Time	Activities/ Topics	Speaker(s)	Moderator	Rapporteur
8:15 - 8:45 A.M.	Receiving Guests and Registration		Hosting Committee	
8:45-9:05 A.M.	Program Introduction	Dr. Fisseha Derso		
9:05-9:15 A.M.	Welcome Speech	Dr. Asnakew Tagele CEO, College of Education	Dr. Fisseha Derso	
9:15-9:25 A.M.	Opening Speech	Dr. Mengesha Ayene President, Bahir Dar University	Dr. Asnakew Tagele	
9:25-9:55 A.M.	Keynote Speech 1: Reimagining Education in Ethiopia's Conflict-Affected Areas: The Role of Higher Education Institutions.	Dr. Dawit Mekonnen, Addis Ababa University		
9:55-10:25 A.M.	Keynote Speech 2: Education in Times of Disruption and Instability: Strategies for Psychosocial Support, Student Reintegration, and Alternative Learning Pathways	Dr. Tassew Zewdie Mekuria Chief of Party, USAID/West Bank and Gaza	Adane Tesera	Dr. T/Michael Getu

CONFERENCE PROGRAM

MAIEC 2025

II

10:25-10:55	Health Break	Hosting Committee	
10:55-11:25 A.M.	Keynote Speech 3: Integration of Indigenous Knowledge into the Education System	Prof. Abiy Yigzaw	
		Adane Tesera	Dr. T/Michael Getu
11:25-12:00 A.M.	Discussion	All participants	
12:00-2:00 PM	Lunch Break	Self	

Day One: May 16th, 2025

Afternoon Session

Parallel Session 1

Venue: 154

Link: <https://meet.jit.si/MayConferenceParallelSessionOne42>



Time	Activities/ Topics	Speaker(s)	Moderator	Rapporteur
2:00-2:20 P.M.	Sociological Perspectives on the Role of Counter-School Subcultures in Learning Poverty	Temesgen Abelneh, BDU		
2:20-2:40 P.M.	Exploring Neoliberal Influences on Higher Education Curriculum Reform: Insights from Bahir Dar University	Yibeltal Asfaw Bahir Dar University		
2:40-3:00 P.M.	Analysis of the Driving Forces of Curriculum Reforms in Ethiopia: Comparison with Global Perspectives	Amsalu Molla (PhD), Debre Tabor University	Dr. Rediet Mesfin	Prof. Asrat Dagnaw
3:00-3:30	Discussion	All participants		
3:30-3:45	Health Break	Hosting committee		
3:45-4:05 P.M.	Antecedents of Effective Utility of Information and Communication Technology in Public Secondary Schools of the State of Amhara, Ethiopia	Shimelis Gebeyehu Bahir Dar University		
4:05-4:25 P.M.	The Impact of General Pedagogical Knowledge on Student Engagement as Mediated by Instructional Communication in Ethiopian Colleges of Teacher Education	Workneh Birhanu Bahir Dar University	Prof. Tadesse Melese	Dr. Jerusalem Yibeltal
4:25-4:45 P.M.	Education in Emergencies: Examining the Current Status of Access, Quality, Inclusion, and Safety and Protection of Education for Internally Displaced Children, Debre Berhan	Yeshiwas Dereb Debre Berhan University		
4:45-5:00	Discussion	All participants		

Day One: May 16th, 2025

Afternoon Session

Parallel Session 2

Venue: 155

Link: <https://meet.jit.si/MayConferenceParallelSessionTwo42>



Time	Activities/ Topics	Speaker(s)	Moderator	Rapporteur
2:00-2:20 P.M.	The Influence of Learning Organization Practices on Teachers' Organizational Citizenship Behavior in Ethiopian Higher Education Institutions in the ANRS	Berhan Kefyalew Bahir Dar University		
2:20-2:40 P.M.	The Contribution of Principal Leadership Competence in Enhancing Teachers' Organizational Commitment in Secondary Schools	Meseret Alem Bahir Dar University	Dr. Matebe Tafere	Dr. Sifelege Taye
2:40-3:00 P.M.	The effect of Leader-member Exchange on the Organizational Citizenship Behavior of Teachers in the Amhara Region Secondary Schools	Legesse Adego Gondar University		
3:00-3:30	Discussion	All participants		
3:30-3:45	Health Break	Hosting committee		
3:45-4:05 P.M.	Psychological Well-Being and Academic Achievement among First-Year Students: The Serial Mediation Roles of Academic Motivation and Academic Resilience	Biniyam Kerebeh Bahir Dar University		
4:05-4:25 P.M.	The Mediating Role of Student Trust in Teachers in Predicting the Influence of Teacher Leadership on Student Engagement in Public Universities of the State of Amhara	Yalalem Assefa Bahir Dar University	Prof. Reda Dargie	Dr. Amare Sahle
4:25-4:45 PM	Women Leadership in Higher Education: A Comparative Systematic Review of Participation and Barriers in Ethiopia and Beyond	Kindu Ayecheew Gondar University		
4:25-5:00	Discussion	All participants		

Day One: May 16th, 2025

Afternoon Session

Parallel Session 3

Venue: 157

Link: <https://meet.jit.si/MayConferenceParallelSessionThree42>



Time	Activities/ Topics	Speaker(s)	Moderator	Rapporteur
2:00-2:20 P.M.	Effect of Virtual Experiments Compared to Physical Experiments on Students' Conceptual Understanding of Chemical Kinetics Concepts	Tadesse Hunegnaw Bahir Dar University		
2:20-2:40 P.M.	The Synergetic Effect of Multiple Representations-Based Instruction Integrated with Formative Assessment Practice on Secondary School Students' Problem-Solving Performance in Physics	Dawit Tesfaye Worku, Bahir Dar University	Dr. Demeke Wollie	Dr. Chanyalew Enyew
2:40-3:00 P.M.	Effect of a Developed REACT Strategy on Students' Conceptual Understanding and Problem-Solving Abilities in Trigonometry	Amare Tesfa Hawassa University		
3:00-3:30	Discussion	All participants		
3:30-3:45	Health Break	Hosting committee		
3:45-4:05 P.M.	The Effectiveness of GeoGebra Software Integrated POGIL on Students' Mathematical Proficiency in Geometry	Gizachew Belay, AAU		
4:05- 4:25 P.M.	A Framework for Teaching Scientific Reasoning in Conventional Physics Classrooms	Ashenafi Wolde, AAU	Dr. Mirtachew Tahir	Dr. Bitew Atinafu
4:25-5:00	Discussion	All participants		

CONFERENCE PROGRAM

MAIEC 2025

VI

Day Two: May 17th, 2025 Morning Session

Parallel Session 1

Venue: 154

Link: <https://meet.jit.si/MayConferenceParallelSessionOne42>



Time	Activities/ Topics	Speaker(s)	Moderator	Rapporteur
8:30-8:50 A.M.	Shaping Future Preschool Teachers in Ethiopia: A Qualitative Evaluation of the Pedagogical Competence Development Mechanisms	Adane Hailu, Dilla University		
8:50-9:10 A.M.	Can Professional Development Intended for Teacher Education Influences the Learning Environment? Lessons from Ethiopian Public Higher Education Institutions (HEIs)	Tewodros Asmare, Metu University	Dr. Temesgen Melaku	Dr. Haileyesus Wedu
9:10-9:30 A.M.	Exploring Indigenous Mathematical Concepts in the Ethiopian Orthodox Church Calendar: Its Relevance and Implications for Modern Education	Ephrem Ali Addis Ababa University		
9:30-9:50	Discussion	All Participants		
9:50-10:20	Health Break	Hosting committee		

Day Two: May 17th, 2025 Morning Session

Parallel Session 2

Venue: 155

Link: <https://meet.jit.si/MayConferenceParallelSessionTwo42>



Time	Activities/ Topics	Speaker(s)	Moderator	Rapporteur
8:30-8:50 A.M.	Effects of Phonics Instruction on Improving the Decoding and Word-reading Skills of First-grade English as a Foreign Language Students in Ethiopia	Ayalew Adane, Bahir Dar University		
8:50-9:10 A.M.	Effects of Differentiated Instruction on Bahir Dar University Students' Writing Performance and Motivation	Zewudie Tamiru, PhD Bahir Dar University		
9:10-9:30 A.M.	በሂደተዘውግ አቀራረብ መጻፍ፣ን መማር የተማሪዎችን አስረጃ ድርሰት የመጻፍ ችሎታ፣ በትብብር የመጻፍ አመለካከትና የመጻፍ ግለብቃት እምነት ለማጎልበት ያለው አስተዋፆ፣ በአማርኛ ትምህርት በዘጠነኛ ክፍል ተተካሪነት	Enatnesh Bezabih, Bahir Dar University	Dr. Sefa Meka	Dr. Lake Bedilu
9:30-9:50	Discussion	All Participants		
9:50-10:20	Health Break	Hosting committee		

Day Two: May 17th, 2025

Morning Session

Parallel Session 3

Venue: 157

Link: <https://meet.jit.si/MayConferenceParallelSessionThree42>



Time	Activities/ Topics	Speaker(s)	Moderator	Rapporteur
8:30-8:50 A.M.	The Implementation of Social Constructivism Teaching Methods on Upper Primary EFL Students' Reading Comprehension and Teamwork Skills	Addis Kebede Bahir Dar University		
8:50-9:10 A.M.	Enhancing English Majoring Students' Writing Skills through Self-Regulated Learning Strategies.	Zelalem Ayalew Bahir Dar University	Dr. Lemma Kassaya	Dr. Selamawit Safisa
9:10-9:30 A.M.	የጥያቄና መልስ ትስስር ብልቃት የተማሪዎችን ትረካዊ ውሕድኤሒድን አንብቦ የመረዳትና በጥልቀት የማስተንተል ችሎታ ለማሳደግ ያለው ተጽዕኖ	Tsegaye Girma Bahir Dar University		
9:30-9:50	Discussion	All Participants		
9:50-10:20	Health Break	Hosting committee		

Day Two: May 17th, 2025

Morning Session

Closing Session

Venue: Auditorium

Link: <https://meet.jit.si/MayConferenceKeynoteSpeech42>



Time	Activities/ Topics	Speaker(s)	Moderator	Rapporteur
10:20-10:40 A.M.	Research University vision conception and importance in the leadership context: The case of Bahir Dar University	Koye Kassa Bahir Dar University		
10:40-11:00 A.M.	Education in Times of Disruption and Instability	Dr. Quentin Wodon, Director, UNESCO IICBA	Dr. Dawit Asrat	Prof. Solomon Melese
11:00-11:20 A.M.	Discussion	All participants		
11:20-12:00	Certificate Awarding and Closing Remarks	Prof. Enyew Adgo, Vice President for RCS, BDU		

Keynote Speech Abstracts**Reimagining Education in Ethiopia's Conflict-Affected Areas: The Role of Higher Education Institutions****Dr. Dawit Mekonnen**

Ethiopia has faced an unprecedented education crisis, with close to 10 million children currently out of school. The majority of these children are in the Amhara region. The challenges extend beyond traditional barriers such as poverty and access; conflicts in various parts of the country have emerged as critical factors. Schools have been destroyed, instructional time has been wasted, and both teachers and learners are suffering from trauma. In some communities, the demand for education has sharply declined due to ongoing insecurity and dwindling employment prospects, leaving large numbers of students out of school for years. Although the roots of exclusion from education are deeply embedded in socio-economic conditions, the conflict/war has significantly exacerbated the situation. These shocks have struck before the system could fully recover from the devastating effects of the COVID-19 pandemic and the Northern Ethiopia war. The education sector's response in these circumstances cannot rely on conventional mechanisms. Emergency and conflict contexts demand distinct strategies—ones that are flexible, innovative, community-oriented, and resilient. This keynote addresses the need for a comprehensive and context-sensitive approach to potential education response and recovery in war-affected areas. It explores critical interventions at multiple levels: systemic reform and planning, curriculum adaptation, flexibility, and pedagogy, teacher deployment and support, student welfare, and parental engagement. It also explores an operational research agenda to guide evidence-informed responses in crisis-affected areas. It is necessary to reimagine education service delivery in a way that responds to consecutive years of disaster, conflict, and trauma, so that education becomes a force for healing, stability, personal and social development, and recovery. This cannot be achieved through the traditional business-as-usual model; universities should lead the way in response and recovery.

Integration of indigenous knowledge in Ethiopia

Prof. Abiy Yigzaw

Indigenous knowledge preserves cultural heritage, enhances educational relevance, and fosters a sense of community ownership. It encompasses a wide range of traditional practices, beliefs, and understandings passed down from generation to generation. It's a dynamic, adaptive, and holistic system of knowledge that reflects a deep connection to the natural world, cultural traditions, and social structures. This knowledge is found in various forms, including technical, environmental, agricultural, sociocultural, and historical knowledge. The following are examples of indigenous knowledge: traditional ecological knowledge, which is understanding local ecosystems, weather patterns, and seasonal changes to predict natural events and manage resources sustainably; and agricultural practices, which are social classification, seed storage, and planting methods developed over centuries to optimize crop yields and food security. The others are fire management and medical plant use, which are strategies vital for the ecosystem health and knowledge of plants with healing properties to maintain overall health. The other ones are traditional hunting and fishing techniques which sustainably harvest wildlife and aquatic resources, craftsmanship and indigenous technology, which are applied in crafting tools, and cultural heritage and practices, which are preservatives of knowledge, values and social cultures. Still others are biodiversity conservation, environmental management, and indigenous governance and social structure, which are habitat preservation and maintenance of traditional ecosystems, strategies for managing resources, preventing pollution, and mitigating the impacts of natural disasters, and traditional systems of decision-making, conflict resolution, and social organization that ensure the well-being of the community and respect for the environment.

Indigenous knowledge may be herbal medicines composed of herbs that contain active ingredients, parts of plants, or other plant materials, or combinations thereof. Traditional medicines may also use animal parts and/or minerals (WHO, 2002–2005). It is estimated that at least 25% of all modern medicines are derived, either directly or indirectly, from

medicinal plants, primarily through the application of modern technology to traditional knowledge. Other types of indigenous knowledge are many and serve people.

An example of indigenous knowledge is that children do not shelter under a big tree when lightning is expected; this is because they believe that tall trees attract lightning. In rural parts of the country, if someone is hit by lightning, they immediately contact with moist ground or dung, which is considered a cure. Though the rural people are not able to explain the why of the stated safety precaution and treatment, this can be substantiated by static electricity theory. This may help to teach Ethiopian students about lightning or static electricity discharge.

Regular Abstracts

Sociological Perspectives on the Role of Counter-School Subcultures in Learning Poverty: Exploring the Profound Impacts of Counter-School Subcultures on Quality Education

Temesgen Abeneh ¹

Subcultures represent unique social groups that cultivate distinct cultures, including variations in communication styles, attire, behaviors, and traditions. These subcultures can either conform to or diverge from the prevailing mainstream culture. When a subculture challenges or opposes mainstream values and expectations, it is a counter-subculture. Within the realm of education, counter-school subcultures form as groups of students who reject the formal education system's norms and goals, often leading to detrimental outcomes known as learning poverty, as noted by the World Bank (2024). This seminar aims to delve deeply into the multifaceted negative impacts that counter-school subcultures have on the quality of education. We seek to shed light on this pressing issue, encouraging educators, policymakers, and community leaders to recognize and address the ramifications of these subcultures. Through an integrative literature review approach, the investigator scrutinizes a variety of theoretical frameworks that elucidate how counter-school subcultures arise, propagate, and shape detrimental behaviors among both students and teachers. These behaviors ultimately hinder the very mission of education, which is to provide a supportive and enriching learning experience. Understanding the dynamics of counter-school subcultures is essential for creating a nurturing and effective educational environment for all students. To accomplish this, a collective and concerted effort is required from educators, policymakers, community organizations, and individuals. Together, we must prioritize the value of education, commit to investing in its resources, and continually pursue strategies for enhancement and growth.

¹ Department of Sociology, Bahir Dar University
Email: abelneht@gmail.com Tel: +251913489216

Exploring Neoliberal Influences on Higher Education Curriculum Reform: Insights from Bahir Dar University, Ethiopia

Yibeltal Asfaw Bayile,² Mulugeta Yayeh Worku (PhD), Tadesse Melesse Merawi (PhD)

This study explores the influence of neoliberal policy agendas on curriculum reform at Bahir Dar University, Ethiopia, using Legitimation Code Theory. The study examines how neoliberal policies' agenda prioritizes vocational knowledge & job-oriented skills, often marginalizing critical thinking and holistic learning. Through a qualitative case study, the study analyzed higher education policy documents, Bahir Dar University's strategic plan, and interview data. Purposive sampling was used to select nine experienced academics as participants of the study, and data were analyzed using thematic analysis. Results revealed a significant shift toward vocational knowledge, growing disparities, and all reflecting the influence of neoliberal policies. The study recommends the need for rethinking the curriculum reform to balance workforce preparation with critical engagement, social equity, and civic responsibility. It calls for curriculum frameworks that integrate vocational knowledge with liberal arts and critical thinking to ensure students are equipped for both professional success and meaningful participation in society.

Keywords: *Neoliberal policy, curriculum reform, Ethiopian higher education, Legitimation, Code Theory (LCT), Vocational knowledge.*

² School of Educational Sciences, Bahir Dar University
Email: yeabnahon@gmail.com

Analysis of the Driving Forces of Curriculum Reforms in Ethiopia: A Comparison with Global Perspectives

Amsalu Molla Getahun (PhD)³

The purpose of this paper is to examine the driving forces behind curriculum reforms at different times in Ethiopia, in comparison with global perspectives. Specifically, it tries to describe the major forces that have brought about a change in curriculum at different times in Ethiopia, in comparison with the global driving forces and to examine the extent of the forces of change in curriculum connected to relevance, equity, efficiency, and quality of the education system. Different literature, policy documents, and reflections of the researcher's lived experiences were used as sources of data. Data were analyzed by describing and interpreting research findings from literature and policy documents. It was using a narrative review, with a focus on the researcher's intuition and research experience in curriculum development and implementation. The result showed that in Ethiopia, before the beginning of modern education in 1908, traditional education for the ideology of religious institutions, such as the church and mosques, was influential. Moreover, as of the beginning of modern education, foreign influence and political ideology are the leading forces for Ethiopian curriculum and pedagogical change, with the least emphasis on curriculum relevance and the least consideration of teachers' participation as practitioners. Ethiopian education and the driving forces of Ethiopian curriculum change in different times have been characterized by changing the contents of the curriculum for the sake of political consumption, losing the ability to create a relevant curriculum for societies, and mainly promoting the order of the day politically. Finally, the researcher recommended that curriculum reform and policy imperatives should focus on the relevancy, efficiency, and quality of education by minimizing the wrong interference of politics in educational reforms.

Keywords: *education policy, driving forces, curriculum reforms*

³ Assistant Professor at Guna Tana-Integrated Field Research and Development Center, Debre Tabor University, Ethiopia e-mail: amsalumolla54@gmail.com

Antecedents of Information and Communication Technology Utility in Public Secondary School Instruction in the State of Amhara, Ethiopia

Shimelis Gebeyehu Kebede⁴

Although the utility of educational technology can transform education, challenges persist in properly integrating ICT in secondary schools. This study examined the antecedents of the utility of ICT in the public secondary schools of the state of Amhara, Ethiopia. The study adopted a quantitative approach with a correlational design, with a sample of 739 teachers and 758 students selected through multistage sampling. The study utilized a set of questionnaires and was analyzed using multiple regression and independent sample t-tests. Confirmatory factor analysis was used to establish the reliability and validity of the data. Statistically significant relationships were observed between the antecedents and the utility of ICT with varying degrees of strength ($p < 0.001$). About 65.9% of the variance for the teachers and 52.5% for the students explains the utility of ICT in the day-to-day instructional context of the schools studied. Among the antecedents, support, and access to ICT infrastructure for teachers and ICT users, and support for students significantly predict ICT utility. However, ICT policy was the least influential predictor. Moreover, Students and teachers hold differing perspectives on the utility of ICT in instructional practices. So, policymakers and educational leaders review the current ICT policies and strategies. School authorities and the Bureau of Education must enhance technical and administrative support to enable teachers to use ICT effectively. Both teachers and students need robust ICT infrastructure, ongoing training, and continuous support to ensure effective technology integration in the classroom.

Keywords: *antecedents, utility of ICT, ICT integration, teaching-learning process*

⁴ Bahir Dar University, Email: shimelisgebeyehu@gmail.com

The Effectiveness of GeoGebra Software Integrated POGIL on Students' Mathematical Proficiency in Geometry

Gizachew Belay⁵, Kassa Micheal (PhD) & Mulugeta Woldemichael (PhD)

Despite the critical role of mathematical proficiency in geometry, conventional instructional methods often fail to develop its four essential strands: conceptual understanding, procedural fluency, strategic competence, and adaptive reasoning. Teacher-centered approaches emphasize rote memorization, limiting students' active engagement and deeper learning. To address these challenges, Process-Oriented Guided Inquiry Learning (POGIL), introduced by Rick Moog in the late 1990s, provides a structured inquiry-based approach that fosters exploration, concept invention, and application. However, POGIL alone has limitations in developing students' procedural fluency and strategic competence, as it lacks dynamic visualization. To strengthen proficiency across all four strands, GeoGebra, a dynamic mathematical tool, was integrated with POGIL, forming a technology-enhanced guided inquiry model (GGS-POGIL). This study employed a mixed-methods approach, incorporating a quasi-experimental pre-test/post-test control group design for the quantitative phase and a descriptive case study for the qualitative phase. A total of 149 Grade 10 students from three public secondary schools in Addis Ababa, Ethiopia, participated in the study, categorized into three instructional groups: (1) GGS-POGIL, (2) POGIL-only, and (3) conventional instruction. The Mathematical Proficiency Test (MPT) was administered before and after the intervention, while qualitative data were gathered through 12 classroom observations and semi-structured interviews with six students.

⁵ Addis Ababa University, Ethiopia
Email: gizachew.belay@kue.edu.et

Pretest analysis confirmed group comparability in overall mathematical proficiency, though conceptual understanding was higher in the GGS-POGIL group. Posttest results indicated significant improvements in all groups, with GGS-POGIL demonstrating the highest gains in conceptual understanding, adaptive reasoning, and overall mathematical proficiency. Statistical analyses (ANCOVA, Kruskal-Wallis, and Wilcoxon Signed-Rank tests) confirmed its effectiveness in fostering well-rounded mathematical proficiency. Qualitative findings reinforced these results, as classroom observations revealed that students in the GGS-POGIL group exhibited greater engagement, collaboration, and confidence in problem-solving. Interview data highlighted that GeoGebra's interactive visualizations enhanced students' procedural fluency, while POGIL's structured inquiry process improved their strategic competence and adaptive reasoning. In contrast, conventional instruction yielded minimal progress in all four strands, underscoring the limitations of passive learning. These findings highlight the transformative potential of integrating technology-enhanced, inquiry-based learning approaches to strengthen mathematical proficiency and provide valuable insights for curriculum reform, teacher training, and innovative pedagogical practices, particularly in resource-limited settings.

Keywords: *GeoGebra, Process-Oriented Guided Inquiry Learning, Mathematical Proficiency, Conceptual Understanding, Procedural Fluency, Strategic Competence, Adaptive Reasoning.*

The Contribution of Principal Leadership Competence in Enhancing Teachers' Organizational Commitment in Secondary Schools

Meseret Alem Zeleke⁶

This study examined the contribution of principals' leadership competence (PLC) to teachers' organizational commitment (TOC) in the secondary schools of East Gojjam Zone, Ethiopia. A quantitative approach with a correlational design was employed, and 324 sample teachers were selected through proportional random sampling. The quantitative data were collected through a questionnaire and analyzed using exploratory factor analysis (EFA), confirmatory factor analysis (CFA), and multiple linear regression analysis. Findings revealed that affective commitment exhibited strong positive correlations, normative commitment showed moderately significant positive correlations, and continuance commitment had less but still significant positive correlations with the dimensions of PLC. Facilitating the vision of learning, managing school community relations, managing learning and teaching, developing individuals and teams, and leading school operations and resources were statistically significant associations with TOC ($p < .001$). In the overall regression model, all the predictors of PLC can explain 32.9% of the variability in affective commitment, 26.5% in normative commitment, and 14.7% in continuance commitment. Among the predictors of PLC, leading school operations and resources are the most significant predictors of all dimensions of TOC; facilitating the vision of learning significantly predicted affective commitment, and managing learning and teaching is a significant predictor of continuance commitment. Other predictors, school community relations and developing individuals and teams, have not significantly contributed to the TOC. The findings offer valuable insights for school leaders and policymakers seeking to enhance teacher affective, normative, and continuance commitment by focusing on key dimensions of PLC.

Keywords: *Leadership competence, Organizational commitment, School principals*

⁶ Bahir Dar University, Bahir Dar, email: kalkidan08meseret@gmail.com

The effect of leader-member exchange on the organizational citizenship behavior of teachers in the Amhara region secondary schools

Legesse Adego⁷

Previous research reports showed contradictory results with the effect of leader-member exchange on organizational citizenship behavior. Some researchers noted that leader-member exchange is a powerful predictor of organizational citizenship behavior; others revealed insignificant associations, and the third group of researchers claimed that the leader-member exchange predicts organizational citizenship behavior when their relationship is mediated by organizational justice. The purpose of this study was to examine the effect of leader-member exchange on the organizational citizenship behavior of teachers in the Amhara region secondary schools. The post-positivist paradigm and correlational design were used. Data were collected from 1061 teachers using a self-administered questionnaire. Data were analyzed using percentages, mean, standard deviation, one-sample t-test, Pearson product-moment correlation, and structural equation modeling. The results showed that the practice of leader-member exchange, organizational citizenship behavior, and organizational justice were significantly below average. It was found that the leader-member exchange significantly and positively predicted the organizational justice ($R^2=.765$) and organizational citizenship behavior ($R^2=.106$). Organizational justice had a statistically significant and positive influence on the organizational citizenship behavior ($R^2=.378$). The leader-member exchange indirectly and positively influenced the organizational citizenship behavior ($R^2=.289$), and their relationship was partially mediated by organizational justice. The joint effect of leader-member exchange and organizational justice on the organizational citizenship behavior was positive and statistically significant ($R^2=.836$). The results suggest that teachers' perception of leader-member exchange could enhance their organizational citizenship behavior, and the organizational justice of principals mediated their relationship. Thus,

⁷ Lecturer, University of Gondar, Email: adegolegese@gmail.com
+2519121818 77

teachers should perceive the importance of a reciprocal relationship and apply it to influence the just behavior of principals. Principals should create a reciprocal and collaborative school environment to foster teachers' organizational citizenship behavior. This study recommended future research directions based on its limitations.

Key words: *effect, leader-member exchange, organizational justice, organizational citizenship behavior, teacher*

The Influence of Learning Organization Practices on Teachers' Organizational Citizenship Behavior in Ethiopian Higher Education Institutions in the Amhara Regional State

Berhan Kefyalew⁸

This study examined the relationship between teachers, organizational citizenship behavior (OCB) and learning organization (LO) practices in Ethiopian public universities within the Amhara regional state. A descriptive and correlational cross-sectional design was used, analyzing data from 764 respondents through one-sample t-tests, correlation, multiple regression, and structural equation modeling. The results showed that teachers exhibited high OCB levels, with a large effect size. All LO dimensions and overall, LO were moderately positively correlated with OCB. Regression analysis revealed that LO dimensions explained 24.5% of the variance in OCB, with personal mastery and mental models as significant predictors, while systemic team learning and shared vision had weaker, insignificant effects. LO was found to have a direct positive effect on OCB. The study suggests that university leaders should emphasize lifelong learning to enhance teachers' skills and motivation, encouraging their extra-role behaviors to support institutional success.

Keywords: *Organizational citizenship behavior, learning organization, Altruism, courtesy, personal mastery, mental models*

⁸ Department of Educational Planning and Management, Bahir Dar University Email: berhankf@gmail.com Tel: 0913197884

Women Leadership in Higher Education: A Comparative Systematic Review of Participation and Barriers in Ethiopia and Beyond

Kindu Ayechev Ayenalem⁹

Women's participation in leadership remains an unmet global agenda, particularly within higher education. Existing literature consistently highlights the underrepresentation of women in higher education leadership, especially in senior positions, due to the interplay of several factors. This study compares the status and barriers to women's leadership in Ethiopian higher education with those in other countries. Employing systematic review methodologies, this research synthesizes findings from 23 journal articles published between 2015 to 2024, which are sourced from databases including Scopus, ERIC, and Tandfonline and Google Scholar. The analysis reveals no significant differences between Ethiopia and other nations in the status and barriers to women's leadership in higher education. Considering the evidence from the reviewed studies, some specific variations, and identified limitations, the study concludes that Ethiopian women do not face unique challenges and are not distinctly underrepresented in leadership positions within higher education. However, the conclusion does not imply that the current situation is satisfactory. Instead, it emphasizes the need for practical and policy-driven interventions to reduce or eliminate barriers to ensure equitable and meaningful participation of women in leadership roles at all levels of higher education in Ethiopia.

Keywords: *Challenges, higher education, managerial positions, systematic review, women leaders*

⁹ Department of Educational Planning and Management, College of Education, University of Gondar,
Email: ayechev.k@gmail.com Tel: 0918151273

Research University vision conception and importance in the leadership context: the case of Bahir Dar University, Ethiopia

Koye Kassa Getahun¹⁰

The research aims to understand the concept of research university vision and its importance within the context of institutional leadership of Bahir Dar University (BDU), Ethiopia. A qualitative case study design was utilized, with data gathered through document analysis and interviews with four top and twelve middle-level academic leaders. The collected data were subjected to content and thematic analysis. From the perspective of academic leadership, a research university is characterized as an institution that prioritizes research as a core part of its mission, including research centers, problem-solving research, research-led teaching, and postgraduate programs. It is also characterized in terms of academic staff with robust research backgrounds, and adequate infrastructure for high-quality teaching, research, community services, and good governance. The vision of a research university holds threefold significance for BDU: leveraging the university's competitive advantages, enhancing its research performance, and contributing to national socioeconomic development. The study concludes with implications and practical recommendations for BDU.

Keywords: *Research university, conception, vision, leadership, leader*

¹⁰ Assistant Professor, College of Education, Bahir Dar University,
koyekassa@gmail.com

Exploring Indigenous Mathematical Concepts in the Ethiopian Orthodox Church Calendar: Its Relevance and Implications for Modern Education

Ephrem Ali¹¹, Kassa Michael (PhD), Mulugeta Woldemichael (PhD)

Despite Ethiopia's rich cultural and historical heritage, indigenous mathematical knowledge remains underexplored and largely unincorporated into modern education. This study focuses on indigenous mathematical knowledge in Bahire Hasab. Bahire Hasab is the official calendar system used by both the Ethiopian government and the church. Additionally, the church applies this system for determining fasting periods, aligning holidays, and identifying past and future dates. Thus, the ultimate purpose of this study was to explore the indigenous mathematical knowledge and principles embedded in the Ethiopian Orthodox Tewahido Church calendar system—Bahire Hasab—and uncover their relevance for integration into modern mathematics education. Using a qualitative exploratory design, the study employed document analysis and semi-structured interviews for data collection. Relevant documents were selected through purposive sampling, and data was extracted using document analysis. Church scholars were recruited through snowball sampling, and further data were gathered from them using semi-structured interviews. The collected data was analyzed thematically by identifying patterns, mathematical knowledge, and underlying mathematical principles, while comparative analysis was used to align the identified concepts with modern mathematical content. The findings revealed that Bahire Hasab encompasses rich mathematical knowledge, such as division algorithms, arithmetic progression, modular arithmetic, and cyclical patterns, many of which align with core concepts in modern mathematics. These findings illustrated the sophistication of Ethiopia's indigenous mathematical knowledge system and its potential to enhance modern mathematics education. The study concludes that integrating these indigenous concepts into the school mathematics curriculum could promote culturally relevant pedagogy, strengthen students' mathematical

¹¹ Addis Ababa University (AAU) Email: ephremali@gmail.com
Tel: +251910116565

understanding, and connect abstract concepts to practical applications rooted in Ethiopian culture.

Keywords: *Indigenous mathematical knowledge, Ethiopian Orthodox Church Calendar System - Bahire Hasab, mathematical principles*

Effects of the Process-Genre Approach on Expository Essay Writing Skills, Collaborative Writing Attitudes, and Writing Self-efficacy among Grade 9 Students

Enatnesh Bezabih¹², Marew Alemu, Mastewal Wubetu

This study investigated the impact of a process-genre approach on ninth-grade students' expository essay writing skills, collaborative writing attitudes, and self-efficacy beliefs at Tana Haik General Secondary School in Bahir Dar City. A quasi-experimental design with a pre-test, post-test, and comparison group was employed. The experimental group (n=53) received instruction in a process-genre approach over 12 weeks, while the comparison group (n=53) followed the grade-level curriculum. Data were collected through expository essay tests and questionnaires assessing attitudes toward collaborative writing and self-efficacy beliefs. Results of a between-subjects ANOVA revealed significant improvements in the experimental group compared to the comparison group in expository essay writing ability ($p < .001$, partial $\eta^2 = .272$), collaborative writing attitudes ($p < .001$, partial $\eta^2 = .727$), and self-efficacy beliefs ($p < .001$, partial $\eta^2 = .698$). These findings suggest that a process-genre approach can effectively enhance students' expository writing skills, foster positive collaborative attitudes, and boost self-efficacy in the Amharic language.

Keywords: *Process-genre approach, collaborative attitude, self-efficacy beliefs*

¹² Bahir Dar University, College of Education, School of Teacher Education
Corresponding author: enat.bez@gmail.com

Enhancing English Majoring Students' Writing Skills through Self-Regulated Learning Strategies

Zelalem Ayalew¹³, Abiy Yigzaw, Yinager Teklesellassie

The fundamental goal of education is to teach students to become self-regulated learners who actively and efficiently manage their learning processes by deploying self-regulated learning strategies (Essa, 2022; Zimmerman, 2002). Based on this stance, the present study investigated whether these strategies predicted students' writing performance. The study participants consisted of eleven English majors who were taking an advanced writing course in 2024. An interrupted time-series within-group design was employed. Repeated measures ANOVA, narration, and textual analysis were used to analyze the data obtained from argumentative writing tests, diary entries and essay excerpts, respectively. A univariate ANOVA result ($F(2.295, 50) = 73.657, p = .000, \text{partial } \eta^2 = .880$) revealed a significant effect of self-regulated learning strategies on writing performance. Moreover, diary entries evidenced that the implementation of these strategies in EFL writing was effective in enhancing students' writing skills. These included organization (introduction, body, conclusion, formulation of thesis sentence), mechanics, grammar, and cohesion. Regarding their progress across time, fairly improved writing skills were reported in the first diary than before, while significant progress was reported in the second diary better than in their first diary and previous experiences. Besides, textual analysis of essays supported that the respondents, after intervention, showed significant progress in their writing performance. The students, indeed, believed that the intervention of these strategies was motivating, encouraging, commendable, and loving. Thus, it is essential to incorporate these strategies in the instructional process.

Keywords: *Self-regulated learning strategies, writing skills, English majoring students*

¹³ Bahir Dar University, College of Education, Department of Language Education, Ethiopia. Email: zelalema2009@gmail.com

The Impact of General Pedagogical Knowledge on Student Engagement as Mediated by Instructional Communication in Ethiopian Colleges of Teacher Education

Workineh Birhanu Aynalem¹⁴, Tiruwork Tamiru Tolla, Amare Sahle Abebe

Investigating teachers' (unique professional) knowledge in the modern scientific way of study is a relatively young field of research that appeared in the late 20th century. This study aimed to investigate the mediating role of instructional communication in explaining the relationship between general pedagogical knowledge and student engagement in colleges of teacher education in Ethiopia. A causal explanatory design was used, where relationship and path effects were observed in SEM. The study was confined to the ten colleges of teacher education (CTEs). Which of these are geographically located in the Amhara National Regional State in Ethiopia. The data from 278 sample teachers as participants were collected to run the analyses to test for a moderated-mediation effect. Teachers were given questionnaires (teacher-perception-test) to complete. The results indicate that teachers' general pedagogical knowledge was positively related to student engagement. Instructional communication was also positively related to student engagement and played a full mediation role in the model. In conclusion, the findings imply that teachers should develop their general pedagogical knowledge so as to increase their effective instructional communication skills and that of students' active engagement throughout the instruction process.

Keywords: *Pedagogy; Teacher Knowledge; General Pedagogical Knowledge; Instructional Communication; Student Engagement*

¹⁴ Department of Psychology, Woldia University

Email: workinehbirhanu23@gmail.com ORCID: <https://orcid.org/0009-0006-8626-0090>

The Mediating Role of Student Trust in Teachers in Predicting the Influence of Teacher Leadership on Student Engagement in Public Universities of the State of Amhara

Yalalem Assefa¹⁵

In recent years, the study of various forms of teacher leadership behaviors and styles, student trust in teachers and student engagement has gained increasing attention because these constructs are critical for understanding student success. While various forms of teacher leadership play a critical role in shaping the academic experiences of students by promoting active engagement, the mechanisms underlying this relationship, particularly in higher education contexts, remain underexplored. Hence, this study attempts to examine how student trust in teachers mediates the relationship between teacher leadership, as defined by the Full-Range Leadership Model (FRLM) and student engagement in public universities located in the State of Amhara, Ethiopia. The FRLM views teacher leadership as a continuum that includes teachers' transformational, transactional and laissez-faire leadership behaviors, each of which has a different influence on student trust in teachers and student engagement in higher education. Using a quantitative research approach with a correlational study design, the study selected 436 undergraduate students using a stratified random sampling method. The study data was collected by a questionnaire and the collected data was analyzed using structural equation modeling (SEM) to assess the direct and indirect influences of teacher leadership behaviors on student engagement, with student trust in teachers as a mediator. The study results indicate the following findings. Transformational teacher leadership behavior has the greatest significant positive influence on both student trust in teachers and student engagement. Transactional teacher leadership behavior also positively influences student trust and engagement, but to a lesser

¹⁵ College of Education, Bahir Dar University Email: yalalem2012@gmail.com
Phone: +251910921515

extent, while laissez-faire leadership demonstrates a negligible impact. Student trust in teachers was found to partially mediate the relationship between transformational and transactional teacher leadership behaviors with student engagement, reinforcing the critical role of trust in enhancing the influence of teacher leadership behaviors. The findings underscore the importance of nurturing trust-based student-teacher relationships as a pathway for translating effective teacher leadership practices into meaningful student engagement and associated educational outcomes. In the end, practical implications and recommendations for teacher leadership development programs and their associated positive influences on student engagement and related outcomes are discussed.

Keywords: *Teacher leadership, student trust in teachers, student engagement, higher education*

The implementation of social constructivism teaching methods on upper primary EFL students' reading comprehension and teamwork skills, Ethiopia

Addis Kebede¹⁶, Reda Darge Negasi, Amare Sahile Abebe

The purpose of the present study was to examine the effects of implementing social constructivism teaching methods by integrating problem-based learning (PBL), collaborative learning, cooperative learning (CL), and scaffolding techniques to enhance grade 8 English as a foreign language (EFL) students' Reading Comprehension (RC) and teamwork skills. The study used a quasi-experimental pretest-posttest comparison group design. The study participants were 64 (M=33 and F=31) grade 8 students in two sections at Shashemane Full Cycle Elementary School in the 2021/22 academic year. The study participants were randomly divided into experimental and control groups using a lottery technique. An independent t-test was performed to determine the significance of the difference between the mean scores of the control and experimental groups on the RC pretest and posttest and the difference in gains. Pre- and post-RC tests were administered to compare the RC performance of the experimental and control groups before and after the intervention. Data on students' teamwork behavior was gathered through class observations, semi-structured interviews, formal and post-observation discussions, and Focus Group Discussions (FGD). The posttest scores revealed that the experimental group performed better than the control group. The comparison of the gain difference between pretest and posttest scores also showed that the experimental group outperformed the control group on the posttest at a statistically significant level. Likewise, the results of the present study showed that social constructivist teaching methods enhance students' teamwork skills. Recommendations are given based on the study's findings.

Keywords: *Reading Comprehension, teamwork, Problem-Based Learning, collaborative learning, Cooperative Learning, and scaffolding*

¹⁶ PhD Candidate, Department of Psychology, Bahir Dar University
Email: adugenet2008@gmail.com

Effects of Differentiated Instruction on University Students' Writing Performance and Motivation

Zewudie Tamiru Tsehay¹⁷

University is universal, and students in it are varied and distinct in many ways, but they are all expected to master the language skills learning similarly. This study, however was sought to apply differentiated instruction as a means to differentiate writing instruction. It is a quasi-experimental pre-test, post-test control, experimental group design. Two intact groups of students who took the course, “Sophomore Writing Skills,” were selected and assigned randomly into experimental and control groups. A learning style inventory was administered to the experimental group students to assign them according to their shared learning styles. Readiness level was identified based on the pre-tests given. Students in the experimental group, as opposed to the control group, were given writing activities as per their readiness, interest, and learning styles. The findings revealed that the experimental group students outperformed better than those in the control group. Also, the motivation for learning was boosted for students in the experimental group after learning through differentiated instruction, as compared to what they had previously. Identifying students’ learning styles helped them to know their individual preferences they possess and assisted in providing effective differentiated instruction to guide them with understanding, comprehension, and motivation.

Keywords: *Differentiated Instruction, Learning Styles, Motivation, Readiness, Writing*

¹⁷ College of Education, Department of Language Education, Bahir Dar University, Email: zewudietamiru19@gmail.com

Effects of the question-and-answer relationship strategy on students' reading comprehension and critical thinking

Tsegaye Girma¹⁸, Marew Alemu, PhD, Sefa Meka, PhD

This research aimed to determine whether the Question-and-Answer Relationship (QAR) strategy can improve students' reading comprehension of narrative texts and critical thinking skills in Amharic. The study employed a quasi-experimental pretest-posttest design. A total of 118 seventh graders from Addis Amba Elementary School in Bahir Dar were selected and randomly assigned to either the intervention group (taught reading comprehension using QAR) or the control group (taught according to the grade level curriculum) for 14 sessions. Data were collected through reading comprehension and critical thinking tests. Analysis of variance (one-way ANOVA) revealed significant effects ($p < .05$) and large effect sizes ($\eta^2 \geq .0.14$) of the QAR strategy on both reading comprehension of narrative texts ($F(1,116) = 33.35, p < .001, \eta^2 = .223$) and critical thinking ($F(1,116) = 28.074, p < .001, \eta^2 = .195$). Findings suggest that the QAR strategy is effective in enhancing students' reading comprehension of narrative texts and critical thinking skills within the Amharic context.

Keywords: *Question-and-Answer Relationship strategy, reading comprehension of narrative texts, critical thinking*

¹⁸ EdD candidate at the Department of Language Education, Bahir Dar University, email: tsegayegirma231@gmail.com, ORCID: <https://orcid.org/0009-0009-4999-7255>

Effects of phonics instruction on improving the decoding and word-reading skills of first-grade English as a foreign language students in Ethiopia

Ayalew Adane¹⁹, Dawit Amogne, and Yenus Nurie

Decoding and word-reading skills are foundational for children in an English as a foreign language environment with limited exposure to the language. Regardless of the very low reading achievement of learners in this area of reading, instructions in Ethiopia largely depend on whole-word reading rather than grapheme-phoneme correspondence skills to recognize the meaning behind written words. Several studies have investigated the word-reading skills of EFL students using implicit instructional methods; however, studies on the effect of explicit phonics on decoding and word reading are limited. Thus, the current study aimed to examine whether explicit phonics instruction improves the decoding and word-reading skills of EFL students in Sekota Primary School, Ethiopia. Two grade 1 EFL classes were randomly selected as experimental ($N = 32$) and control ($N = 28$) groups. Intervention based on explicit decoding and word reading was conducted for the experimental group for 20–25 minutes each school day over twelve weeks. Test results were measured based on participant pretest and posttest scores, and they were analyzed using a t-test. Results revealed that explicit phonics significantly improved the word-reading skills of the experimental group compared to the control group. Accordingly, this study suggests the necessity of emphasizing phonics to improve the word-reading skills of EFL.

Keywords: *Decoding, word reading, explicit phonics, English as a foreign language*

¹⁹ DEd candidate, Bahir Dar University, Ethiopia

Email: aayalew06@gmail.com

Effect of REACT strategy instructional approach on Students' Conceptual Understanding and Problem-Solving Abilities in Trigonometry

Amare Tesfa Fererde²⁰, Prof. Mulugeta Atinafu Ayele, Adamu Assefa
Mihirka (PhD), Alemayehu Adugna Arara

Trigonometry is a crucial topic in high school mathematics that significantly enhances students' understanding and problem-solving skills. However, many students encounter difficulties in this area following traditional instructional methods. By employing a REACT strategy, a known approach to context-based instruction, teachers can make trigonometry lessons more meaningful and relevant to students' lives, effectively linking academic content to their experiences and contexts. This study aimed to investigate the effect of the REACT strategy on secondary school students' conceptual understanding and problem-solving abilities in trigonometry. A quasi-experimental pre-test and post-test control group design, involving 97 Grade 10 students from two secondary schools in Bahir Dar City, Ethiopia, was employed. The students' conceptual understanding and problem-solving abilities were assessed before and after the intervention using a trigonometric concept test and problem-solving tasks developed by the researchers and field experts. The collected data were analyzed using independent and paired sample t-tests, along with analysis of covariance (ANCOVA). The findings indicate that the treatment group, which participated in the REACT strategy instruction, showed significant improvements in understanding and solving real-life trigonometric concepts and problems compared to the control group. This approach, supported by effective teacher training and context strategies, significantly enhanced students' conceptual understanding of trigonometric concepts and their problem-solving abilities, as well as their ability to apply these concepts to real-world situations. These results suggest that accessible resources, combined with effective instructional delivery, are essential factors in improving mathematics learning outcomes.

Keywords: *REACT strategy, Conceptual Understanding, Problem-Solving, Trigonometry*

²⁰ Hawassa University, Email: atesfa73@gmail.com

A Framework for Teaching Scientific Reasoning in Conventional Physics Classrooms

Ashenafi wolde²¹, Mekbib Alemu, Fikadu Eshetu

The study investigates the instructional practices of nine secondary school physics teachers, categorized into experienced-qualified, intermediate-moderate, and young-less experienced groups, to develop a framework for fostering scientific reasoning in conventional classrooms. Data were collected through video-based observations, interviews, and field notes. Key moments from the video data were identified and examined using classroom discourse analysis frameworks focused on scientific reasoning. Additionally, interview data, along with field notes, were analyzed using thematic analysis. To ensure the robustness of the findings, the analysis was reviewed by two external experts, achieving an 85.4% inter-rater reliability rate. The analysis revealed that the availability and functionality of school facilities, classroom dynamics, and teacher characteristics significantly influence the creation and utilization of instructional opportunities for scientific reasoning. The framework emphasizes the importance of engaging students with scientific content through demonstration, analogy, hypothetical scenarios, real-life applications, and scientific argumentation. It also highlights the need for teacher adaptability, consistency, diversity, balance and flexibility in teaching methods to address diverse learning needs. The findings suggest that a well-structured classroom environment, supported by adequate resources, teachers' appropriate knowledge aligned with the complexity of the subject matter and dynamic instructional practices, is crucial for promoting scientific reasoning. The study provides a valuable model for teachers aiming to enhance scientific reasoning in secondary school physics classrooms, demonstrating that effective teaching practices, combined with a supportive learning environment, can significantly impact students' reasoning ability and application of scientific concepts.

Keywords: *Scientific Reasoning, Instructional Practice, Physics Education*

²¹ Department of Science and Mathematics Education, Addis Ababa University, Email: ashenafi.wolde@aau.edu.et

Effect of Virtual Experiments Compared to Physical Experiments on Students' Conceptual Understanding of Chemical Kinetics Concepts

Tadesse Hunegnaw²², Dr. Tesfaye Demisse Hailegebreal, Dr. Dawit Asrat Getahun, Prof. Minaleshewa Atlabachew

Although physical experiments are mandatory in science learning, there has been a growing demand for virtual experiments owing to various advantages such as enhanced learning, cost-effectiveness, flexibility, safety, and so on. However, it is important to investigate the effect of virtual experiments compared with physical experiments on students' conceptual understanding using interactive assessment tools like concept maps. Thus, this study aimed to compare the conceptual understanding of students who conducted experiments virtually and physically on chemical kinetics concepts, as assessed by concept maps. It also explored how students' conceptual representational levels are demonstrated in concept maps. An explanatory sequential mixed-method approach within a quasi-experimental research design was employed. As part of a learning lesson on chemical kinetics, one group of students conducted virtual experiments (n=25), while another group engaged in physical experiments (n=26). Concept maps were used to examine the students' conceptual understanding. After scoring the concept maps, a comparison of mean scores using a t-test revealed no significant differences between the experimental and control groups, which suggests that the two forms of experiments are equivalent in terms of enhancing conceptual understanding. The qualitative analysis of concept maps showed that students struggle to effectively represent the three levels of their conceptual knowledge of chemical kinetics. Future research may focus on an effective combination of virtual and physical experiments to link sub-microscopic levels to the other two levels (macroscopic and symbolic) of conceptual understanding.

Keywords: *Virtual experiments, Physical experiments, concept maps, conceptual understanding, chemical kinetics*

²² Bahir Dar University, E-mail; tadie8892@gmail.com

ORCID: <https://orcid.org/0000-0001-9934-007X>

The Synergetic Effect of Multiple Representations-Based Instruction Integrated with Formative Assessment Practice on Secondary School Students' Problem-Solving Performance in Physics

Dawit Tesfaye Worku²³, Mengesha Ayene Ejigu (PhD), Tilahun Gidey Gebremeskal (PhD), Tsegaye Kassa (Prof.)

Student success in solving physics problems strongly depends on their ability to use multiple representations (MRs) effectively. Multiple representations provide powerful learning tools that can support students in developing expert-like problem-solving skills. However, many secondary school students working with MRs often face learning difficulties, as it is a novel approach for them. This task falls within their zone of proximal development, where they need guidance and support. This study aimed to investigate the impact of using multiple representations-based instruction incorporating formative assessment practice on secondary school students' problem-solving performance in physics. A quasi-experimental design with a pre-test, post-test, and control group using a mixed-method approach was employed to compare students' problem-solving performance in the experimental and comparison conditions. The study was conducted with two intact groups of 101 Grade 11 students at a public secondary school in Debretabor, Amhara, Ethiopia. Students' problem-solving performance was assessed using four electrostatic problems, scored with an adapted performance rubric that emphasizes best practices in problem-solving. The data obtained from the administration of the instruments were analyzed using paired sample t-tests with effect sizes (Cohen's *d*) and analysis of covariance (ANCOVA), with the pretest scores as the covariate. Qualitative data were collected using a think-aloud interview and semi-structured interview. Qualitative analysis focused on identifying and comparing themes to understand

²³ DEd Candidate in Physics Education at Bahir Dar University, Bahir Dar
dave2tes@gmail.com ORCID: <https://orcid.org/0009-0006-8822-7606>

students' problem-solving approaches and how the intervention affects their performance. The findings indicated that students in the experimental class significantly outperformed their counterparts in their performance in solving electricity problems. Qualitative results further revealed that students who spend more time conceptually analyzing a problem through representations develop better problem-solving performance. Incorporating formative assessment-based scaffolds into multiple representations instruction better facilitated the improvement of secondary school students' visualization of abstract concepts, knowledge structure and problem-solving performance. Thus, by providing timely feedback and supporting students in transitioning between different representation formats, teachers can effectively promote student problem-solving performance and tailor their instruction to meet individual needs.

Keywords: *Problem solving; multiple representations, formative assessment; physics education*

Psychological Well-Being and Academic Achievement among First-Year Students: The Serial Mediation Roles of Academic Motivation and Academic Resilience

Biniyam Kerebeh Melaku²⁴, Reda Darge Negasi (Prof.) Tīruwork
Tamiru Tolla (PhD)

First-year university students face a heightened risk of social, psychological, and emotional difficulties, making them especially susceptible to academic struggles. Understanding how to support their well-being and academic success is crucial. This study investigates the relationships between psychological well-being, academic motivation, academic resilience, and academic achievement in first-year students. Specifically, it examines how academic motivation and resilience mediate the relationship between psychological well-being and academic achievement. Data were collected from first-year students using a correlational research design. Various scales were adapted to measure the relevant constructs, including Carol Ryff's psychological well-being scale, Cassidy's academic resilience scale (which was revised to reduce the number of items from 30 to 20 by Cui, Wang, and Xu for a better fit within a collectivist cultural context), and Vallerand et al.'s multidimensional academic motivation scale. The sample was selected using simple and stratified random sampling techniques, considering students' gender and college affiliation. Data collection occurred in two phases. Initially, a pilot study gathered information from 200 students (158 males and 42 females) to validate the measurement instruments. Subsequently, the main study included data from 503 students (403 males and 100 females) to explore further the mediating roles of academic motivation and resilience in the relationship between psychological well-being and academic achievement. Analysis, primarily conducted through Pearson correlation, showed significant positive correlations among

²⁴ Department of Psychology, Bahir Dar University, Bahir Dar, Ethiopia
Email: bnbt10@gmail.com Tel: +251 912026967

psychological well-being, academic motivation, academic resilience, and academic achievement. Furthermore, structural equation modeling (SEM) demonstrated that academic motivation and resilience partially mediated the relationship between psychological well-being and academic achievement. Based on these results, the study presents conclusions along with recommendations, limitations, and suggestions for future research.

Keywords: *Academic Achievement; Academic Motivation; Academic Resilience; Psychological Well-Being; Serial Mediation role.*

Shaping future preschool teachers in Ethiopia: A qualitative evaluation of the pedagogical competence development mechanisms

Adane Hailu Herut²⁵, Motladi Angeline Setlhako

Preschool teacher training programs in Ethiopia are designed to enhance the teaching skills of future teachers. Grounded in this context, this study aimed to evaluate how a pre-service teacher education program develops these essential pedagogical competences through coursework and hands-on training. Using a phenomenological design, the research focuses on preschool teacher candidates, instructors, department heads, and education officials from six selected teacher education colleges across Ethiopia, involving a total of 18 participants chosen for convenience. To gather qualitative data, the study employed semi-structured interviews and direct observations of lesson facilitation. The findings indicate a strong and effective preschool teacher education program that develops the pedagogical competencies of preschool teachers. However, it was highlighted that there are significant challenges such as limited practical exposure, resource constraints, and language barriers. Key findings emphasize the need for improved support mechanisms, highlighting the importance of practical training components in the improved curriculum, optimum practical exposures, enriching extracurricular activities, rigorous assessment methods, and the provision of constructive feedback.

Keywords: *Competence, instruction, methodology, pedagogy, preschool teachers*

²⁵ Center for Education Studies and Research, Dilla University, Dilla, Ethiopia
Email: adanah@du.edu.et Tel: +251922083244

Can Professional Development Intended for Teacher Educators Influence the Learning Environment? Lesson From Ethiopian Public Higher Education Institutions (HEIS)

Tewodros Asmare Tefera²⁶, Adula Bekele Hunde, and Teklu Tafesse Olkaba

This study aims to evaluate the impact of professional development (PD) on the learning environment. The constructivist paradigm and a case study research design were used. Data were collected using interviews and focus group discussions (FGD). Twelve (12) respondents and four (4) FGD groups participated in data collection. The participants were selected using purposive and proportional sampling. Transcription, coding, development, and identification of sub- and main themes were performed using NVivo version 10 software. As the study findings revealed, the HDP's impact on facilitating the learning environment is very large. It improved students' knowledge and skills and helped them create a comfortable learning environment by using student-centered and active learning approaches, bringing change in their professional

engagement, and planning, following, monitoring, and evaluating students' learning. Therefore, it is important to evaluate the impact of PD to enhance the impact of PD in improving the learning environment, which impacts students' improvement. In addition, the HEIs should devise a mechanism to assess the impact of the PD.

Keywords: *Higher education, professional development, impact, learning environment*

²⁶ Assistant Professor of Curriculum and Instruction, Mettu University
teddyasmare2014@gmail.com , ORCID: <https://orcid.org/0000-0002-4851-7346> Tel: +251917820662

Education in Emergencies: Examining the Current Status of Access, Quality, Inclusion, and Safety and Protection of Education for Internally Displaced Children, Debire Birhan, Amhara Region, Ethiopia

Yeshiwas Dereb Alemu²⁷

This study examined the current status of access, quality, inclusion, safety, and protection of education for internally displaced children in Debire Birhan, Amhara Region, Ethiopia. For this, a quantitative research approach was used, and data were collected from 324 internally displaced children (IDC) through stratified random sampling. Then the data was analyzed quantitatively. Finally, the findings revealed that, except for access to education, quality education, inclusive education, and safety and protection of IDC, were found to be low. Statistically, a significant difference was observed among IDC in access to education, inclusive education, and safety and protection. i.e., females and rural IDCs had less access to education; females from economically disadvantaged backgrounds and those unable to speak the local language were not included compared to their counterparts. Besides, unlike females and rural IDCs, males and urban IDCs felt safe and protected. Accordingly, due care and special intervention need to be given by the education actors in the recruitment, training, and deployment of trained and qualified teachers with experience in refugee education. All education actors, particularly those working in areas of crisis, should facilitate a conducive environment for females, the economically disadvantaged, and rural IDC to participate equally in the education process. Local security officers and host communities should work hand in hand to make the environment safe and protected, and to engage IDC in their education.

Keywords: *Education in emergencies, internal displacement, access to education, quality education, inclusive education, safety and protection*

²⁷ Debre Berhan University, Debre Berhan, Ethiopia

Email: befekadudesta@gmail.com Tell. +251911199177/915570774

Dotted lines for note-taking.

Dotted lines for note-taking.



ትምህርት ስሌጅ
College of Education
ባሕር ዳር ዩኒቨርሲቲ
Bahir Dar University

Home

current issue

Archive

For Authors



Publish With US!

Bahir Dar Journal of Education

Journal Identifier

eISSN: 2415-0452

Print ISSN: 1816-336X

Bahir Dar Journal of Education is a peer-reviewed open-access journal that seeks to broaden our understanding of the processes that advance issues related to education from an educational perspective. It welcomes the submission of original research articles, systematic reviews, reflections, document reviews, letters to the editor, book reviews, and short communications on issues pertaining to education in general and teaching and learning practices in particular from all corners of the world. It accepts manuscripts focusing on educational issues at all levels of education.

As a peer-reviewed academic journal, we particularly welcome submissions that improve the conceptual understanding of the field of education in which the College of Education, Bahir Dar University, has been making every effort to be a center of excellence. Bahir Dar Journal of Education is a tri-annual journal. It publishes three issues in January, May, and September each year.

SUBMIT



bje.febs@bdu.edu.et



<https://journals.bdu.edu.et/index.php/bje>

Scan me for submission



MoE Accredited



INDEXED IN



BOOK OF Abstracts



Office of Research and Community Engagement
College of Education
Bahir Dar University

Sponsor

