



CEMASTE INFO

Newsletter

Issue 011 July – September 2022

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CAPACITY BUILDING



EDITOR'S NOTE

A warm welcome to our 11th Issue of the CEMASTEA Info Newsletter

To kick off the new Financial Year 2022/2023, the overriding theme has been on Capacity Building, which simply put, means that the focus this quarter has been on self-improvement. Why? One might ask, should we bother with the hustle and bustle of incessant trainings and self-betterment programmes? There are a myriad of reasons, but for purposes of this issue, I'll give just one: In keeping with CEMASTEAs core mandate of *Excellent Capacity Development in STEM Education in Africa*, we seek to be the best, to lead the rest. On matters capacity development in STEM, our reputation precedes us, therefore, all staff undertake various training courses in a bid for constant reinvention and relevance in what many observers are terming as a "predictably capricious world."

As will be notably prevalent throughout the issue, most activities implemented have some form of training as the primary focus. We are also happy to announce that the newsletter has taken a fresh new look. We are over the moon about the fact that while the foundational elements of the newsletter largely remain the same, new features on: Book review, Interviews, How to, Fictional stories, News, Entertainment, Advertisements and Cartoons have been introduced. The bold new look is attributed to the fact that a group of CEMASTEAs staff undertook a professional course on print media at the Kenya Institute of Mass Communication (KIMC)-One of many master strokes from the top management.

CEMASTEA participated in the Catholic public schools principal's capacity building conference from 4th to 6th July, 2022 at Catholic University of Eastern Africa Nairobi, where the Centre presented a paper on STEM Pathways in Competency Based Curriculum (CBC) and focused on the critical role STEM plays in education in Kenya. CEMASTEAs itself organized trainings for: Secondary school principals from across all counties on 'Enhancing pedagogical leadership for effective implementation of CBC and county trainers on managing SMASE activities. Our Gender Mainstreaming Committee was not left behind and participated a four-day training on gender equality at the work place which speaks to the institution's aspirations in ensuring all staff and clients regardless of gender or background, work in a safe, enjoyable and enabling environment.

Testament to CEMASTEAs endeavour to achieve sustainable development goals Numbers Four (4) on promoting quality education; Goal Number 13 on Climate Action and Goal Number 17 on Partnerships for the goals, the Centre acquired a weather station. Moreover, findings from the station can be integrated in the teaching and learning of several STEM-related concepts like statistics, therefore schools are encouraged to get their hands on it as it is affordable and easy to install.

Finally, I laud all Kenyans for the peace and calm they displayed before, during and after the recently concluded electoral and judicial processes. Kenya continues to be a beacon of stability and democratic maturity not only in Africa but across the globe.

Enjoy this issue.

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Contributions may be edited for clarity, space or legal consideration.

MESSAGE FROM THE DIRECTOR

**“No matter
how full
the river is,
it still wants
to grow.”**



**Jacinta L. Akatsa, HSC,
Director, CEMASTEA**

“No matter how full the river is, it still wants to grow.” What a thought! That such a saying, as ordinary as it sounds, is as relevant as it comes. That no matter the level of achievement, career, background, gender, race or tribe, human beings are on an incessant quest of self-improvement. Human beings are always exploring ways to go the extra mile, to gain the extra one percent just to be ahead.

Capacity building is all about improving overall effectiveness, whether at an individual or organisational level. In this case, it focuses on broadening the institution’s ability to do new things and improve what it currently does. To put it simply, capacity building improves

CEMASTEА’s performance and enhances its ability to function and stay relevant in an ever-changing global environment.

Also, I dare say that though external views and consultations are welcome from time to time, capacity building intrinsically reduces an over-dependence on ‘external consultants’ as sources of guidance, knowledge or solutions to an organization’s issues. This helps members of staff take ownership and accountability of their tasks and responsibilities with a view to both positively grow the institution and have better control of their futures.

At CEMASTEА, we preach the gospel of continuous self-development both internally and externally, because why should we build teachers’ capacity while staff remain stagnant?

A blind man cannot lead another blind man, hence capacity building enables staff to develop competencies and skills that can make them more effective, efficient and serve the public better. This in line with our mandate: ‘To provide continuous professional development of teachers in STEM education.

In this regard, the Centre has various tailor-made programmes that speak to this mandate, namely: Pre-Primary programme; Primary In-Service Training (INSET); Secondary INSET; ICT Integration; STEM and innovations; Research, Development, and Knowledge Management; Special Programmes & Student Learning; Field Services and Partnerships & Linkages. The programmes function collaboratively in ensuring that teachers are equipped with knowledge and skills for innovative teaching and learning and also STEM talents are nurtured which create a pool of learners interested in pursuing STEM-related courses in higher education and subsequently, STEM-related careers.

CEMASTEА staff have undergone training on various courses, with the Centre itself training over 20,000 teachers using both face-to-face and online approaches. This is unrivalled and duly cements our reputation as a leading avant-garde training institution. This is as a result of a firm realization and acknowledgment of the fact that self-betterment is a process without an end, a recurring cycle of improvement and reinvention.

Happy reading!

Professional Development: A Goal Every Organization should Consider



By Dan Orero

A group of CEMASTEA Staff undertaking a professional course at Kenya Institute of Mass Communication (KIMC), Nairobi

People are the most important asset in every organization, a common say in most of the working environments. Yet how many organizations act as if they really believe the true meaning of that? Not many. There is a meaning in the saying expressing value and values are visible through the actions people take. Employees judge their organization's sincerity when they see senior managers walk their talk.

People have different opinions, priorities, goals and beliefs depending on their backgrounds, and for them to be productive in any organization, they must be properly managed.

“Like a battery, the human mind and body must be fully discharged to stretch their capacity.”

-Haresh Sippy

Human Resource Management (HRM) refers to the strategic and coherent manner in which employees are managed so that even with their differing individual traits, they can collectively work together towards the attainment of the objectives and goals of the firm.

HRM ensures that highly skilled and qualified employees with the abilities to perform specific tasks are recruited, placed, trained, developed, and motivated to ensure that their maximum potential is tapped.

HRM ensures that highly skilled and qualified employees with the abilities to perform specific tasks are recruited, placed, trained, developed, and motivated to ensure that their maximum potential is tapped. These are just a few functions and importance of Human Resource Management. This article provides comprehensive details to help you understand the concept of HRM, its functions, and importance.

The Centre for Mathematics, Science and Technology Education in Africa (CEMASTEA) whose role is to provide Teacher Professional Development to Science and Mathematics teachers is not only limited to the external clients but it has also come up with a number of departmental training programmes through Training Needs Assessment, Skills Gap Analysis in order to develop its personnel. On-the-job and off-the-job training techniques are used to develop the technical and soft skills of the employees. Activities can be at organizational level, the level of managers and at individual level.

Among the many stereotypes that the Human Resource is trying to beat is about the responsibility of capacity building. No matter how much we try to pass the buck to each other in the organization, the realization is that we can pass the buck only because it is everyone's responsibility. The reason why it may often land in the HR's court is because it can be effectively implemented by HR. Capacity building has been traditionally used to mean the act of expanding the organization or changing its direction. These activities might be at the organizational level, the level of managers and at the individual level. This is well stated by Haresh Sippy - "Like a battery, the human mind and body must be fully discharged to stretch their capacity."

What is Human Resource Management?

Simply put, HRM is the procedure involved in the handling of employees in an organization. It seeks to maximize the methods by which a company gets things done through people who are employed in that company. HRM is devoted to shaping a desired organizational culture and introducing programs that mirror and support the core values of the organization.



Group photo: (Middle) Director CEMASTEА Mrs. Jacinta Akatsa with the nine graduants during the graduation ceremony at KIMC

Nine members of staff from CEMASTEА graduated at the Kenya Institute of Mass Communication (KIMC) on where they were undertaking print media training. The training commenced on the 28th of June 2022

Among the topics that were taught are advertisements, news writing and reporting, magazine production, feature writing, photography, media law and ethics, technical writing, public speaking and graphic production techniques.

"I enjoyed every aspect of the training. The passion and dedication of the lecturers made learning fun. The hands-on approach of the training was very useful as we were able to use cameras and a variety of software. Learning how to write different types of articles was also enriching. I will definitely recommend this training to anyone who wants to enhance their skills in print media."

Mr. Gregory Njogu, one of the trainees

CAPACITY BUILDING CONFERENCE FOR CATHOLIC PUBLIC SCHOOLS PRINCIPALS

By Clotilda Murambi and Winfred Magu

CEMASTEА attended the Catholic public schools principal’s capacity building conference on July 4th to 6th, 2022 at Catholic University of Eastern Africa Nairobi, themed: *Catholic schools: Centers of Spiritual formation and character development & Lifelong competencies for a happier society.*

During the conference, the Director CEMASTEА Mrs. Jacinta L. Akatsa, presented a paper on Science, Technology, Engineering and Mathematics (STEM) Pathways in Competency Based Curriculum. The presentation done on her behalf by Mr. Patrick Kogolla, Ag. Deputy Director Training, focused on the critical role STEM will play in education in Kenya.



Mrs. Clotilda Murambi (L), CEMASTEА National Trainer engaging with a conference delegate

“Adequate preparation in schools will ensure an easy transition for students and learners”,

Jacinta Akatsa,
Director CEMASTEА

“Prepare your institutions for the learners that will soon join your schools. Adequate preparation will ensure an easy transition for the students and teachers,”
Mr. Patrick Kogolla to the school leaders



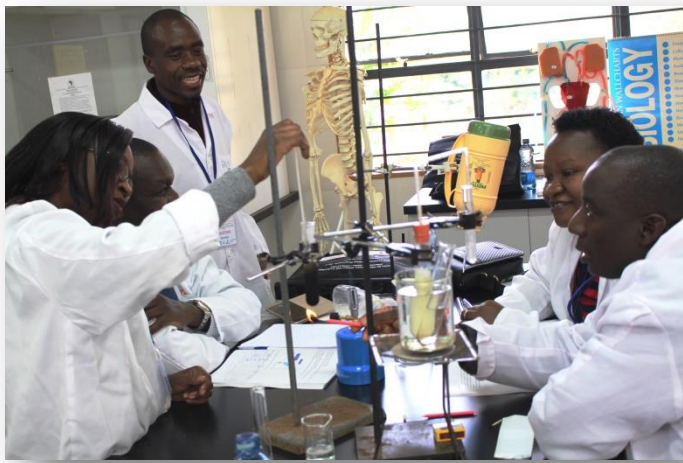
Mr. Patrick Kogolla, Ag. Deputy Director Training, CEMASTEА

CEMASTEА showcased innovative teaching and learning resources developed from various departments. Biology, had samples of preserved bones, a model of teeth, and an innovation to demonstrate reflex and coordination. Chemistry displayed wet cells, an improvised fuel cell and gas flow meter. Physics and displayed the cartesian diver, water fountain, while mathematics displayed a geoboard and three-dimensional models.

The Conference attracted exhibitors from the education sector, and financial and non-governmental institutions.

SMASE SECONDARY PRINCIPALS' TRAINING WORKSHOP

By Mr. John Makanda, and Ann Mumbi



TRAINEES ENGAGING IN A SCIENCE ACTIVITY AT CEMASTE

Kenya is in the process of implementing the Competency Based Curriculum (CBC) and in the year 2023, learners will be transiting from Grade 6 to Grade 7 in Junior Secondary School.

In preparation for this transition, CEMASTE organized a training for secondary school principals drawn from the 47 counties. The theme of the training was 'Enhancing pedagogical leadership for effective implementation of Competency Based Curriculum and (SMASE) activities' the Principals were taken through implementation of CBC in Junior Secondary Schools (JSS) and Senior Secondary Schools (SSS) with the expectation that they would describe the key features of Basic Education Curriculum Framework (BECF) for effective curriculum implementation, evaluate the schools' readiness to implement the new learning areas under STEM and appreciate the role principals play in the implementation of CBC at JSS and SSS.

For the Principals to explain pedagogical leadership in curriculum implementation, share ideas on how to provide pedagogical leadership in the implementation of SMASE activities at the school level, facilitate the application of knowledge and skills gained from SMASE activities to other subjects and appreciate their roles as pedagogical leaders for curriculum implementation, they were taken through the roles of the school principals in providing pedagogical leadership in the implementation of SMASE activities at the school level.



A group photo of the participants held from 5th to 6th July, 2022 in the United Arab Emirates

EDUCATING THE EDUCATORS INITIATIVE ON THE ENERGY TRANSITION EDUCATION NETWORK

By: Mary Sichangi

CEMASTE as the Continental Secretariat of the Association for Development of Education in Africa's (ADEA) Inter-Country Quality Node on Mathematics and Science Education (ICQN-MSE) participated in the workshop on "Educating the Educators Initiative of the Energy Transition Education Network (ETEN)"

The workshop was held from 5th to 6th July, 2022 in the United Arab Emirates under the objective of bringing together international partners and stakeholders from the renewable energy sector to explore possibilities of working together in areas such as development and dissemination of teaching resources and raising awareness on the need to enhance renewable energy education with national curricula. The workshop was organized by the International Renewable Energy Agency (IRENA) drew participants from; UNICEF-Paris, OECD, University of Colorado Boulder – USA, Ministry of Education – UAE, UNEP-India, SDG 7 Youth Constituency and Global Council, UNESCO-Bangkok, IEEE, Teach for Zimbabwe, Teach for Lebanon, and Teach for All.

In her opening remarks, Dr. Nawal Al Hosany, Permanent Representative of the UAE to IRENA reiterated the importance of integrating renewable energy in educational systems transition. She urged participants to consider institutionalizing RE into education with focus on achieving: sustainable communities empowered and motivated youth, holistic view by educators on the reality we face of the energy crisis & creation of jobs in energy sector. The deliberations revealed lack of policy and sustainability curriculum framework for global adaptation by countries. The need for a framework to guide on priority STEM skills, learning outcomes, content and dissemination to the global audiences

A review study on curriculum frameworks for 100 countries revealed 47% of countries whose frame do not mention the term climate change. Majority of teachers believe that it is important to teach about climate change, but only 40% were confident and 20% can explain how to take action on the related impact. In conclusion, there is also need to mainstream the UNESCO's greening education flagship projects in Renewable Energy (RE) in education policies, curriculum, teacher training and in educational institutions.

Enhancing Principals' Pedagogical Leadership for Quality CBC STEM Education

By MKizito & DOrero

CEMASTEА organized a two-day

STEM Model School Principals workshop in Nakuru from 10th – 11th June 2022 with the theme: 'Enhancing Principals' Pedagogical Leadership for Effective implementation of the STEM Pathway in the Competency Based Curriculum (CBC).

One hundred and one (101) Principals from the 103 STEM Model schools attended the workshop.

Some topics under consideration included understanding the STEM pathways in light of CBC, strategies for supporting STEM education programmed in their schools and the need for continued transformation into Centres of Excellence in STEM education. Strategies included the improvement of their schools' STEM climate, making it more inviting, initiating programmes such as the maker's spaces, and integrating education for sustainable development.

The Chief Guest during the opening ceremony, Director General, State Department of Early learning & Basic Education, Ministry of Education, Mr Elyas Abdi challenged principals to ensure the learners got quality STEM education. He requested the school leaders to prepare for Junior Secondary School (JSS) intake, especially in STEM-related subjects. The principals were encouraged to support their teachers continue practice skills acquired during the STEM training by CEMASTEА.

Parting shot

“STEM model schools should stand out in every aspect such that neighboring schools can emulate and learn from them.”



From Left: Chief Guest, Director General, State Department of Early learning & Basic Education, MoE, Mr. Elyas Abdi; Dr. John Aleke, Assistant Director Quality Assurance and Standards at the TSC and Mrs. Jacinta L. Akatsa, HSC, Director CEMASTEА

Presiding over the closing ceremony, TSC CEO Dr Nancy Macharia, ably represented by Dr John Aleke, Assistant Director of Quality Assurance and Standards, thanked CEMASTEА for playing a pivotal role in initiating school principals in CBC and the STEM pathway.

Mr. Aleke urged the principals to practice what they had learnt during the training. He assured them of TSC's commitment to continually support teachers and learners in promoting STEM-related activities. He challenged them to make their schools Centres of Excellence in STEM education. The training, he noted had equipped them with knowledge and skills to implement CBC at JSS, hence the need to offer exemplary pedagogical leadership to sensitize teachers and other stakeholders.

In her remarks, Director CEMASTEА, Mrs Jacinta Akatsa, encouraged the principals to invite STEM programmes that promoted the uptake and increased enrolment in STEM subjects, noting that a conducive teaching and learning environment could lead to great results.

She requested them to put in place structures that would ensure follow-ups and strengthen the transfer of knowledge and skills gained. The participating Principals developed an action plan detailed in various programmes they intended to do. These included preparation for CBC Junior secondary, lesson study, ICT integration and STEM projects and programmes.

CENTER FOR MATHEMATICS SCIENCE AND TECHNOLOGY EDUCATION IN AFRICA PRINCIPALS WORKSHOP ACTION PLAN- 2022

SCHOOL: ST.AGNES MWIRA GIRLS SECONDARY SCHOOL COUNTY: KAKAMEGA

Area	Specific action	Timeframe	Resources required	Indicator/evidence	Possible challenges	How you will mitigate the challenges
CBC (Preparation for transition)	• Sensitization of other teachers who were not trained on CBC	June – August	Teachers Papers, Computer	Notice of meeting Meeting minutes	Busy school schedule	Create time
	• Form school committee on implementation of CBC	June	Teachers and other stakeholders	List of committee members	Lack of knowledge on CBC	sensitization
	• Follow up on teachers who were trained on CBC to implement their actions plans	Continuous	Trained teachers, Principal	Action plans and success indicators	Lack of time Laxity on teachers part	Continuous monitoring

ENTERTAINMENT

AESOP'S FABLES

THE FROGS WHO WISHED FOR A KING

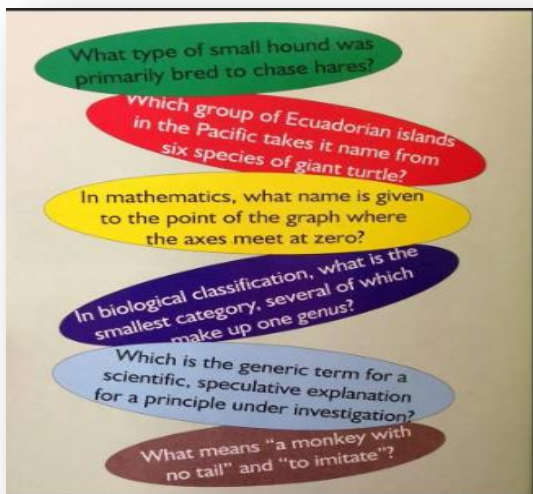
The Frogs were tired of governing themselves. They had so much freedom that it had spoiled them, and they did nothing but sit around croaking in a bored manner and wishing for a government that could entertain them with the pomp and display of royalty, and rule them in a way to make them know they were being ruled. No milk and water government for them, they declared. So they sent a petition to Jupiter asking for a king.



"Well sir," she said, "if I must stay awake, I am going to settle right down to enjoy your singing. Now that I think of it, I have a wonderful wine here, sent me from Olympus, of which I am told Apollo drinks before he sings to the high gods. Please come up and taste this delicious drink with me. I know it will make you sing like Apollo himself." The foolish Grasshopper was taken in by the Owl's flattering words. Up he jumped to the Owl's den, but as soon as he was near enough so the old Owl could see him clearly, she pounced upon him and ate him up. Jupiter saw what simple and foolish creatures they were, but to keep them quiet and make the frogs who wished they had a king, he threw down a huge log, which fell into the water with a great splash. The Frogs hid themselves among the reeds and grass, thinking the new king would be some fearful giant. But they soon discovered how tame and peaceable King Log was. In a short time the younger Frogs were using him for a diving platform, while the older Frogs made him a meeting place, where they complained loudly to Jupiter about the government.

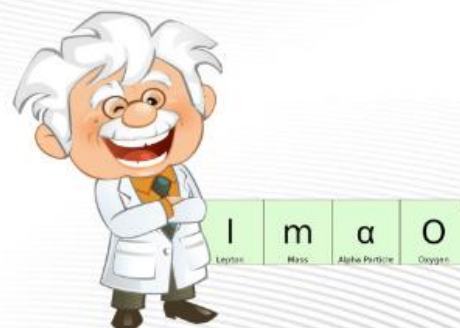
To teach the Frogs a lesson the ruler of the gods now sent a Crane to be king of Frog land. The Crane proved to be a very different sort of king from old King Log. He gobbled up the poor Frogs right and left and they soon saw what fools they had been. In mournful croaks they begged Jupiter to take away the cruel tyrant before they should all be destroyed.

BRAIN TEASER



SCIENCE JOKE

An optimist sees a glass half full.
A pessimist sees a glass half empty.
A chemist sees a glass half full of liquid and half full of air.



THE ABC OF CODING

By MKizito and MMungai

Kenya continues to maintain its place as one of the hotbeds for digital innovation on the continent. The government of Kenya has been keen on the roll out of the implementation of the computer coding curriculum in middle school and Junior Secondary under the Digital Literacy Programme.

What is coding?

Computer coding is the use of computer programming languages to give computers and machines a set of instructions on what actions to perform. It's how humans communicate with machines. It's what allows us to create computer software like programmes, operating systems, and mobile applications.

This new initiative reflects an ambition to re-imagine education and a solid dedication to building the future. And as it seems both the private and public sectors are aligned with this vision. Just this year alone, Microsoft, Visa, and Google have opened their first development centers in the country's capital.

Learning to code has vital benefits in the current age. It's a skill that is highly valued in the workforce and jobs related to computer programming are growing exponentially. Beyond the computer, coding teaches critical thinking, problem-solving, creativity and resilience. Coding is an essential skill in the future because it is an important part of the digital transformation.



Students engaging in coding activities in the CEMASTE A Maker Space

What is coding?

Computer coding is the use of computer programming languages to give computers and machines a set of instructions on what actions to perform

The number of jobs that require coding skills will grow exponentially because most services and products are being digitised. It means they will work on a virtual environment, and without coding skills, it would be hard to achieve this.

The Relevance of coding in the school curriculum is hoped to enhance students' technological skills and put them on the scope in the ever-growing world of technology. The promotion of coding, which is a signature subject in the study of computer science and the digital world, students who learn and understand coding have an advantage of becoming full participants – rather than merely spectating – in a heavily computerised and digitised world.

The approval by the government to include coding in the Competency Based Curriculum, where Coding is a STRAND in the curriculum design gives CEMASTE A an impetus to support coding as part of STEM education through development of materials for training and supporting teachers in coding.

What CEMASTEА is doing to promote and support Coding

Preparation of quality coding materials in line with the Curriculum designs that are easy to use by the learner and the teacher using *'the from easy to complex approach'*. Towards this end, CEMASTEА staff have written a coding workbook for Grade 4, 5 & 6

- 1- Training and supporting teachers in equipping them with requisite knowledge and skills in coding in order to engage, expose and enrich the learners
- 2-Conducting Boot Camps that are periodically placed as part of the Corporate Social Responsibility to learners from selected schools. The learners are given intense training on areas such as; Creative coding, Mobile app development, 3-D printing, Robotics, Arduino proto-typing among others during these boot camps.
- 3 -Active participation in coding events within the ECO-system, such as Rusinga school Hackerthon event
- 4 -The research and development (R &D) department has been spearheading a research on Coding uptake in Middle school and junior secondary

What is the future?

In recognition to the immense opportunities in coding, CEMASTEА has taken keen note on continued partnership with various stakeholders within the coding eco-system such as:

EduTech; Impact STEM Centre; Angaza Elimu among others.

Further, as a way of providing a platform for growth in coding, Internet of Things (IoT), Data analytics among other emerging 21st digital skill, the possibility of establishing incubation hubs where coders are given exposure, enrichment of their knowledge and skills to eventually expert - ready to work experts.



Students engaging in coding activities during the Coding Camp at the CEMASTEА

AWARDING PERFORMANCE IN STEM

By MMungai and Ann Mumbi



MATHEMATICS play a critical role in development of critical thinking, creative problem solving, precise communication and collaboration skills. These are important work skills for socio-economic development in the 21st Century.

On Wednesday, 27th July, 2022, students who took part in the CEMC - CEMASTEAMathematics Contest and showed exemplary performance were awarded trophies and certificates in recognition of their efforts.

**“STEM Education was the only way towards Kenya’s technological and socio-economic development through Kenya’s Vision 2030 and the Big 4 agenda”,
Mr. Paul Kibet, Director, Secondary and Tertiary**

The Centre for Mathematics, Science, and Technology Education in Africa (CEMASTEAM)

in partnership with Centre for Education in Mathematics and Computing (CEMC) which is domiciled at University of Waterloo in Canada, on 21st May 2022, administered a Maths test to 39 STEM schools. The schools had been purposively selected from a pool of 103 STEM model schools. A total of 796 students undertook the test.

CEMASTEAM staff administered the test in the 39 schools in a closely timed session of one hr. Answer sheets were scanned and forwarded to CEMC for marking. The overall goal of the contest was to help create positive attitude towards Maths as well as help improve performance in Mathematics.

The teachers from these selected schools had been taken through a virtual training by Canadian mathematics lectures on creation of Problem Solving questions to help the learners become critical thinkers. The trained teachers were expected to cascade the knowledge and skills gained to their schools for the overall benefit of the learner.

The Director of Secondary and Tertiary Education, Mr. Paul Kibet, presided over the awarding ceremony. Mr. Kibet, stated that STEM Education was the only way towards Kenya’s technological and socio-economic development through Kenya’s Vision 2030 and the Big 4 agenda. Mathematics, he noted stands out strong in STEM because it plays a critical role in development of thinking skills, creative problem solving, precise communication as well as teamwork skills for 21st Century socioeconomic development. Mr. Kibet acknowledged Director CEMASTEAM, Madam Jacinta L. Akatsa, HSC and Hon. Wesley Korir from CEMC and by extension, University of Waterloo - Canada, for coming up with the maths contest initiative which he noted would help the Kenyan learners. He congratulated AIC Chebisaas High school, Ndururumo High school and Nyeri High School for their sterling performance in the contest.

Centre for Education in Mathematics and Computing (CEMC) has Mathematics contests designed for the Canadian child; however, this can be contextualized to fit in with the Kenyan child.

Facts about the training

Training dates : 4th – 8th April, 2022 : Time 7.00-9.00pm EAT	39 Schools purposively selected
78 teachers trained	50 questions selected

UALIMU BORA

By Dr. Njoroge Mungai

Does teacher attendance of teacher professional programs translate to teacher learning?

What opportunities exist for teachers to actively engage in learning about practice in professional development forums?

How can meaningful teacher learning be enhanced in professional development forums?

CEMASTEA's Research & Development Department engaged in a discussion on these questions during a conference (held virtual & in-person, August 11 – 12, 2022) organized by Kwame Nkrumah University, Zambia. The theme of the conference was *“Revisiting Education Policy, Leadership and Curriculum Development Drawing on Local Knowledge and Current Trends”*.

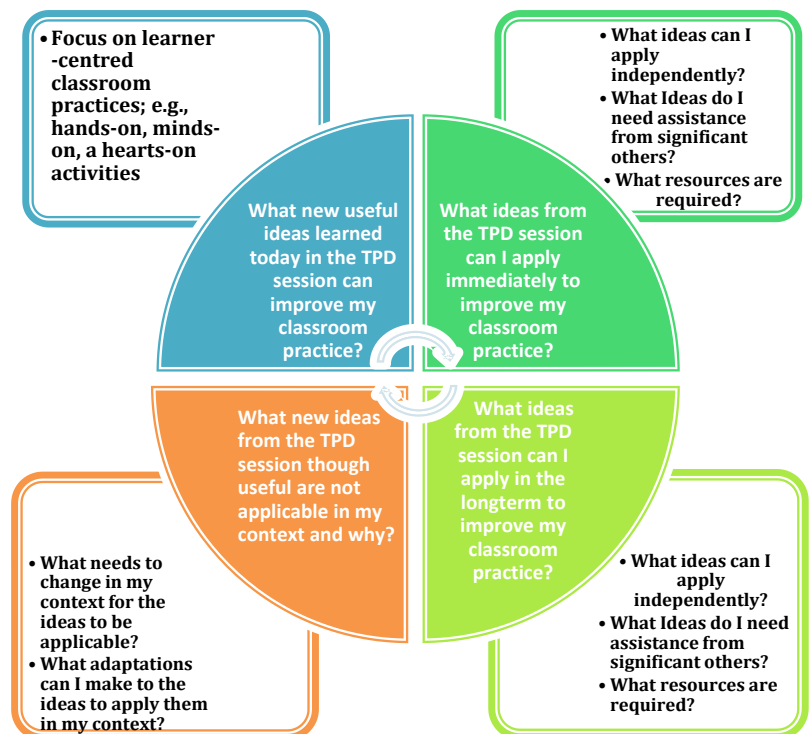
In my experiences as a professional development teacher educator in Kenya, I have interacted with a significant number of teachers in various teacher professional development (TPD) forums. While some of these teachers have applauded the TPD sessions and applied new learning in their classroom practices, change in teachers' classroom practices remains elusive for some of them. In particular, I have encountered other teachers that are more prone to nuances of “survival pedagogy”. By survival pedagogy I mean that it not uncommon to find teachers recedes back to unique style of teaching that focuses more on evidence of “teacher teaching” rather than “learner learning”. This is despite attending and applauding TPD forums.

TEACHER LEARNING THROUGH REFLECTIVE PRACTICE IN TEACHER PROFESSIONAL DEVELOPMENT

One intervention discussed during the conference is for us teacher to engage in self-reflexivity. That we pro-actively engage in continuous reflection about our classroom practices and how we can improve on them. More importantly, and in the spirit of countering “survival pedagogy”, a self-reflexivity state of mind is useful during professional development encounters.

At CEMASTEAs, teacher educators are encouraging teachers attending professional development workshops to engage in reflective practice. Participating teachers are provided with prompts that are aimed at helping them to focus on their learning from the day's professional development session.

The following are sample self-reflexivity prompts to tackle survival pedagogy and can go a long way in enhancing teachers' change in practice after attending a TPD session:



Dr. Mungai's sample self-reflexivity prompts for tackling survival pedagogy to enhance classroom practice



A group photo of the County Trainers and CEMASTEA Staff during the workshop

By David Arimi and Promina Kauri

ENHANCING COUNTY TRAINERS CAPACITY IN MANAGING SMASE COUNTY ACTIVITIES

Under the theme of enhancing County Trainers Representatives Capacity in Managing SMASE County Activities and deepening their understanding of CBC through sharing experiences and learning, CEMASTEA held a two day workshop for County Trainers' workshop at Merica hotel in Nakuru County on 15th and 16th July 2022.

The objectives were to: reflect on the implementation of SMASE activities and suggesting areas of improvement; Share information on 2022 County INSET activities; and Share information on SMASE Funds County Audit Reports; Demonstrating understanding of the essence of Junior Secondary School (JSS) and describing the role of ESD in the implementation of STEM education as envisaged in CBC.

CEMASTEA uses a two tier cascade system to deliver most of its training. The Centre relies on a pool of County Trainers (CTs) deployed across the nation to implement its cascaded programmes, with each County having a minimum of 12.

Among the CTs, one is designated as the County Trainers Representative (CTR). They work as the technical advisers for the SMASE County Teacher Capacity Development Committee (CTCDC). They are also mandatory signatories to the SMASE Account at the County level.

Speaking during the ceremony, Deputy Director CEMASTEA, Mrs. Lydia Muriithi representing the Director CEMASTEA, stated that County Trainers' Representatives are critical at the management of CEMASTEA activities. Since they interact with the teachers, she encouraged them to continue supporting SMASE activities at the county level.

TSC CDE Nakuru County, Mr. Fred Osewe appreciated CEMASTEA for granting them the opportunity to host the workshop and gave assurance of the CTRs to ensure success of SMASE activities.

Mr. Adow Mohammed, Regional Rift Valley Coordinator Director TSC, representing the CEO Dr. Nancy Macharia, stated that the CTRs were supposed to relay the message to others. He applauded CEMASTEA for coming in handy during COVID 19 through online platforms trainings. The CEO promised that the commission will continue to support CEMASTEA in enhancing quality of STEM education.

Mr. Livingstone Makanda, Coordinator Secondary Programme at CEMASTEA, urged participants deepen their understanding of CBC given that in 2023 learners are transiting to JSS.

The CTRs were given certificates of recognition and branded with CEMASTEA shirts and blouses.



Madam Lydia Murithi Deputy Director CEMASTEA (In a mask) awarding a certificate to some of the participants

PICTURE SPEAKS: SCHOOL VISITS



Naivasha Girls' students during an Education for Sustainable Development (ESD) session



Muongoiya Sec. Sch. students engaging in an activity in the Innovations Lab



St. Claire Nembu Girls students engaging in a Biology activity



Nyahururu High School students engaging in an activity in Physics Lab



PCEA Makuyu-ini Sec. School students engaging in a Chemistry activity

School visits at CEMASTEAM play a key role in enhancing capacity development through Science, Technology, Engineering and Mathematics (STEM) education. Students get a chance to link the classroom work with the real life experience.

During the school visits, students are engaged in activities across various subjects mainly in Science, Technology, Engineering and Mathematics (STEM) Education, Education for Sustainable Development (ESD), Innovations and Information Communication Technology (ICT). Students perform experiments, watch videos, engage in discussions, motivational talks and watch tutorials of successful persons through STEM education.

During this quarter, CEMASTEAM hosted a number of schools: St. Claire Nembu High School, Muongoiya Secondary School, Nyahururu High School, Naivasha Girls, and PCEA Makuyuini Secondary School. During the visits the learners had the opportunity to experience the fun of learning by engaging in various activities.

CEMASTE WEATHER STATION

By *Magdalene Kavuu and Patric Wanjohi*

“Education is not preparation for life; education is life itself”, these are the words that capture the spirit behind the newly installed weather station at CEMASTE

Mr. Wanjohi, an officer in the ‘Education for Sustainable development’ department, expresses that the move to acquire a weather station will help advance the institutions mandate of continuously developing teachers professionally by introducing a new facet to the varied training programs in the institution, as well as introducing learners to pertinent sustainability issues as making observations about the weather and discussing climate are great ways to teach about science, especially since weather is something learners can easily relate to and understand. Whether it's clear and sunny or rainy and windy outside, weather and climate affect learners’ lives every day. Furthermore, the CBC lists environmental activities as one of the key learning areas in pre-primary.

“Education is not preparation for life; education is life itself”

The weather station is an all-in-one digital device that can measure and records the various weather elements, from precipitation, to temperature, wind speed and direction, as well as atmospheric pressure. It has different sensors that collect information about the atmospheric conditions at any given time and stores all of the data online where it can be accessed through a portal. Mr. Wanjohi further explains that you can only access data from your specific weathers station.

While further explaining, why the weather station and not any other sustainability project, Patrick points out that this project will enable CEMASTE to advance three of the Sustainable Development Goals. The following are the SDGs, number (4) Promoting quality education, (13) Climate action and (17) Partnerships for the goals. Also the ability of this project to be integrated in the teaching and learning of several STEM subjects, for instance the data can be used to teach statistical concepts and the importance of weather forecasting and how it affects agricultural and economic activities.

Patrick recommends the weather station in schools or localities to localize the data, that they are currently using a teaching aid in mathematics and the sciences. He points out that the project is relatively affordable, as it is a one-time ‘cost’, and it is easy to set up, as opposed to setting up a traditional weather station.



**‘All in one’
sensor suite for
the automatic
weather**

CEMASTEA QUALITY MANAGEMENT SYSTEM (QMS)

By Philip Maate



CEMASTEA is ISO 9001:2015 certified. It was first certified on ISO 9001:2008 in June 2014. It was thereafter recertified for ISO 9001:2015 in June 2017 and in January 2021. IOS 9001 is the international standard that specifies requirements for a quality management system (QMS). A QMS in simple terms refers to a collection of business processes or procedures which aim at ensuring that the quality of products or services offered meets or exceeds customer expectations. Certification is therefore evidence that an organization has a robust quality management system. CEMASTEAs has therefore demonstrated ability to consistently provide products and services that meet customer and regulatory requirements.

CEMASTEA QMS is headed by the Management Representative (MR) and the ISO committee headed by the ISO chairmen. To ensure high quality standards, CEMASTEAs conducts internal quality audits biannually in all its 19 processes. Example of processes include Training, Finance, Top management, Human Resource, Supply Chain, among others. Quality assurance for the QMS is done by conducting internal audits using ISO: 9001:2015 Standard criteria. CEMASTEAs has 49 ISO lead auditors and 17 auditors who take part in the internal audits. Surveillance QMS audits to CEMASTEAs are conducted by Kenya Bureau of Standards (KEBS) which is the certifying body. All heads of sections are trained ISO auditors. They therefore understand the QMS and hence ensure that it is maintained at high standards.

The Centre ensures monitoring of quality through: 1) Analysis of customer feedback and establishes customer satisfaction index; 2) Evaluating teachers trainings conducted to establish teacher professional development quality index; 3) Monitoring achievement of service charter to establish the extent of achievement on quarterly basis; and 4) Monitoring performance of external service providers.

Walking the road of QMS has provided immense benefits to CEMASTEAs which include 1) ease and systematic implementation of planned activities due to laid down procedures 2) Customer focus where process owners and staff have had increased awareness in meeting customers' needs 3) improved documentation that has resulted in ease of reporting during evaluation of Performance Contracting 4) ensuring continual improvement through implementation of customer feedback and customer satisfaction survey recommendations. ISO 9001:2015 certification means that CEMASTEAs is a public institution that is leads in provision of continuous professional development of teachers in STEM education.

CEMASTEA
is
ISO 9001:2015
certified

Managing Mental Health in the Workplace

- * Know what you do well & your interests
- * Develop a good routine
- * Physical health is just as important
- * Stay organized
- * Reward yourself
- * Take time for YOURSELF
- * Use resources available to you
- * Surround yourself with positive people
- * Maintain a stable & organized work environment
- * Understand that nothing can be perfect

umdcareers.wordpress.com



CARTOON BY: SALOME N DANU



"TO MIND YOUR MENTAL HEALTH IS MONUMENTAL."

World Mental Health Day 2022: "Make Mental Health and Wellbeing for All a Global Priority"



Whilst the pandemic has, and continues to, take its toll on our mental health, the ability to reconnect through World Mental Health Day 2022 will provide us with an opportunity to re-kindle our efforts to protect and improve mental health.

Many aspects of mental health have been challenged; and already before the pandemic in 2019 an estimated one in eight people globally were living with a mental disorder. At the same time, the services, skills and funding available for mental health remain in short supply, and fall far below what is needed, especially in low and middle income countries.

The COVID-19 pandemic has created a global crisis for mental health, fueling short- and long-term stresses and undermining the mental health of millions. Estimates put the rise in both anxiety and depressive disorders at more than 25% during the first year of the pandemic. At the same time, mental health services have been severely disrupted and the treatment gap for mental health conditions has widened.

Growing social and economic inequalities, protracted conflicts, violence and public health emergencies affect whole populations, threatening progress towards improved well-being; a staggering 84 million people worldwide were forcibly displaced during 2021. We must deepen the value and commitment we give to mental health as individuals, communities and governments and match that value with more commitment, engagement and investment by all stakeholders, across all sectors. We must strengthen mental health care so that the full spectrum of mental health needs is met through a community-based network of accessible, affordable and quality services and supports.

Stigma and discrimination continue to be a barrier to social inclusion and access to the right care; importantly, we can all play our part in increasing awareness about which preventive mental health interventions work and World Mental Health Day is an opportunity to do that collectively. We envision a world in which mental health is valued, promoted and protected; where everyone has an equal opportunity to enjoy mental health and to exercise their human rights; and where everyone can access the mental health care they need.

[World Mental Health Day 2022 \(who.int\)](https://www.who.int/world-mental-health-day)



The Nature of Science:

Why Teach Science to Children?

By Thuo Karanja

TEACHING SCIENCE offers children a lot of knowledge and information that helps them understand how and why things work as they do. Science can explain the mechanics, processes and reasons behind the daily functioning of the many things that fascinate children. Such include toys, cars, their bodies, aeroplanes, phones, radios, and many other complex systems. Science helps to provide physical or visible evidence of many facts children encounter, read about in books and on the internet or see on the television; this helps to increase understanding and helps them to retain that information.

A strong foundation in scientific knowledge and methodologies can teach children essential skills like thinking clearly and logically, possessing an open and inquiring mind, and problem-solving skills and help them solve simple and practical problems.

It can also help them develop physical skills, especially in handling things. Children can also use this knowledge to understand new concepts, make well-informed decisions, and pursue new interests.

Science is the application of human intelligence to figuring out how the world works. Through science, man has discovered many valuable things that have made life much easier. Such include technologies for transport, farming, communication and building and medicines and drugs for many diseases. However, science such as nuclear warfare and uncontrolled industrial development that leads to overexploitation of natural resources and pollution continues to harm and worry human beings.

Science education in the 21st Century should prepare children for the future: confident, self-directed learners, concerned citizens, and active contributors able to thrive in and contribute to a world which is constantly changing. Science education should not just involve teaching learners basic concepts and facts of science. It should also equip them with other skills, including ethics and attitudes, to use that scientific knowledge and be aware of how science influences their lives and shapes their environments. Science education should therefore take a prominent place in any curriculum.

Children at different stages have different abilities, and their thinking develops as they grow. Children are curious about things from birth. Indeed curiosity does not need to be taught. An infant can hold objects, follow moving objects with their eyes, trace the source of a sound, and discover the relationship between their mother's breast and feeding; to feed; they have to suckle.

This learning goes on in stages such that by the time a child is ready for school, they already have a great deal of rudimentary scientific knowledge to recognise properties and characteristics such as size, colour, and even group (*classify*) objects. At higher levels, they are capable of more complex scientific skills.



LEARNER ENGAGED IN A SCIENCE ACTIVITY

Science is a 'doing subject', and children like 'doing' things. Taught well, most children find science extraordinarily inspiring and exciting. Children should enjoy 'doing' science. Well-planned science lessons enable learners to develop understanding and form questions based on their knowledge and the insight they wish to gain in the future.

Teachers of science need to realise that learners, through their formal and informal interaction with the natural and the design world, children already have developed ideas about most phenomena they learn in school. They already have explanations (sometimes misconceptions) for many objects, events and organisms in their immediate world. However, while most of these conceptions are scientifically inadequate, they influence the formation [learning] of new and proper scientific concepts.

Science lessons should be planned with activities that allow learners to do things, talk, discuss, ask and answer questions. Such activities are expected to be in line with the curriculum, not 'activities for activities' sake and can assist learners in clearly linking and understanding concepts being learned. Indeed, learners who excel in science lessons will likely develop a strong ability to think critically.

8th Edition Conference for Catholic Private Educational Institutions Association

By Beatrice Macharia and Dan Orero



Director CEMASTEA, Mrs. Jacinta L. Akatsa, HSC engaging with some of the delegates at the CEMASTEA exhibition tent during the Conference

The Centre for Mathematics, Science and Technology Education in Africa (CEMASTEА) participated in the Catholic Private Educational Institutions Association Conference 8th Edition from 5th – 8th April, 2022 with the theme: “Catholic Schools: Centres of Spiritual Formation, Character Development & Lifelong Competencies for a Happier Society.

“Catholic Schools: Centres of Spiritual Formation, Character Development & Lifelong Competencies for a Happier Society. A number of Science, Technology, Engineering and Mathematics (STEM) innovations derived from different subject areas were demonstrated: Biology; a model to demonstrate gaseous exchange in animals, innovation on estimation of population and innovation to demonstrate Reflex and Coordination. Chemistry; gas law demonstration and Innovative process to show presence of oxygen (“elephant toothpaste”). Mathematics had innovation on the use of geoboard, latitude & longitudes and inS Physics; innovation on Cartesian diver. Electromagnetic, buoyancy principle and balancing of nails to demonstrate centre of gravity were also showcased

CEMASTEА displayed some of its Education for Sustainable Development (ESD) projects to promote tree growing and food security which included:

- ✓ **Grafted Apple Mango seedlings**
- ✓ **Avocado Hass variety seedlings**



Some of the activities at the CEMASTEА exhibition tent during the conference

The African Pocket

By Clara Mwangi



FINANCIAL MANAGEMENT is the processes of budgeting, saving, investing, spending, or otherwise overseeing the capital usage of an individual or group. It is a skill that provides you with a financial picture while applying key financial disciplines to help you to overcome the obstacles to accumulating wealth.

This is a discipline that requires consistency, timeliness, justification, documentation, and certification of the following:

- Tracking your spending to improve your finances
- Creating a realistic monthly budget
- Build up your savings over time
- Paying your bills on time
- Cut back on recurring charges
- Saving up cash to afford big purchases
- Start an investment strategy

“The trouble with retirement is that you never get a day off.”

– Abe Lemons.

Why is Personal Finance Important?

You may think you are too young to manage your finances, or too rich to keep track of your budget. Your reasons may be excusable but only for a short time. You need to plan your finances before it's too late. Whatever stage you are right now, it's good to have an excellent plan of your personal finance management. A good personal finance can help you keep within your budget, increase your savings and achieve your financial goals. Here are some tips on financial management.

1. Educate yourself on financial literacy

If you want to understand your money fully, it's important to widen your financial literacy. Upgrade your financial literacy by reading financial literacy books, financial management blog etc. This will help in deepening understanding of your finances.

2. Budgeting, spending and continuous investments.

Your knowledge on money might be limited to knowing how to spend it on bills and other monthly expenses like rent, paying fees etc. but it's important to keep track of your expenses hence you will know where your money is going then put the extra money on savings. Invest your money correctly, giving more returns instead of letting money sleep in your bank accounts. Know where your money is going,

Prioritize saving

Use the 50/30/20 rule which means: Spend 50% on necessities, 30% on savings and 20% on luxuries.

More Tips in the Next Edition

A MAN WITH A VISION RETIRES

By Richard Jakomanyo, Chemistry Dept.

Joseph Kamau Mathenge of the Chemistry Department, CEMASTEА retired in July 2022 culminating in a long service spanning from June 2003 when he joined the Centre. The officer famously referred to as Joe James or Teacher Mathenge by colleagues was a dedicated worker always glued to his laptop working way beyond normal working hours.

He is remembered for his detailed approach when developing training materials and hawk eye that will not permit even a spelling error to pass a piece of work he was involved in. By the time of his retirement he was the Coordinator Field Services as well as the Management Representative (MR) of CEMASTEА.



Senior Officer, Joseph Kamau Mathenge

"The department will miss the services of a very resourceful officer whose work contributed a great deal to the success of the many training programmes offered to our clients over the years"

Mr Samuel Gachuhi,

Dean Chemistry Department,

"Mr. Mathenge was committed to duty. He prioritized work assignments and planned well to deliver required outputs"

Dr Mungai Njoroge, a colleague in the Chemistry Department

The CEMASTEА Fraternity takes this opportunity to wish Mr. Joseph Kamau Mathenge all the best as he settles on his future endeavours as a senior citizen.

Ephesians 4:29

"Do not let any unwholesome talk come out of your mouths, but only what is helpful for building others up according to their needs, that it may benefit those who listen."

"GUIDE US TO THE STRAIGHT PATH."
Al Qur'an, 1: 06

The 25th KPSA Directors' Conference

By Beatrice Macharia and Ann Mumbi

Kenya Private Schools Association (KPSA) held the Directors' annual conference and their 25th Annual General Meeting (AGM) from the 4th to 6th July 2022 at Pride Inn Paradise Beach Resort, Mombasa. CEMASTEAM exhibited during the entire period of the conference. The Director, Madam Jacinta Akatsa was honored to make a presentation during the opening ceremony.

The sessions mainly addressed the issues of curriculum implementation, transition into Junior secondary schools and Senior Secondary. In addition the role of managers and teachers in the implementation and transition was also discussed. In implementation, the managers were guided to put in place necessary infrastructures including additional classrooms, laboratories and also ensure that teachers are adequately equipped with relevant knowledge and skills for effective implementation of the curriculum reforms.



PHOTOS DURING THE ACTIVITY

THE LENS



Kenya Private Schools Association (KPSA) Nairobi County Directors Benchmark Tour at CEMASTEAs Laboratories & Innovation Centres



Ms. Mercy Okello, Casio Kenya (second right) issues a cheque to CEMASTEAs to appreciate development of mathematics lessons.

Receiving the cheque is the Chair, Board of Governors, CEMASTEAs, Dr. Pius Mutisya Kimani (third right); Director CEMASTEAs, Jacinta Akatsa (left) and Dean, Mathematics Dept. CEMASTEAs, Nancy Nui (Left)



Birthday cakes to Celebrate CEMASTEAs staff born in the months of July, August and September

Institutionalizing a Gender Equality Lens

CEMASTEА GENDER COMMITTEE MEMBERS CAPACITY BUILD

By Njeri Mburu and Winfred Magu



Group photo: (Middle) Director CEMASTEА Mrs. Jacinta Akatsa with members of the Gender Mainstreaming Committee following the training held at CAI Hotel, Machakos County in June 2022

The term “Glass Ceiling” refers to barriers that women face when striving to move upward in the workplace.

The Gender mainstreaming Committee members underwent a training on 21-24 June, 2022. Themed: ‘*Institutionalizing a Gender Equality Lens*’, the four-day training saw members taken through the following; Legislation and Policy Framework on Gender Mainstreaming, Gender Based Violence, Gender Analysis, Rethinking Gender Mainstreaming Workplace Policies, and Institutionalizing the Gender Management System. The subtopics focused members on the critical roles they play in Gender mainstreaming in CEMASTEА.

Speaking during the closing ceremony, Director CEMASTEА Mrs. Jacinta Akatsa, urged committee to mainstream gender into their daily lives. She called upon the members to sensitise all other members of staff.

In her remarks, the chair of the Gender Committee, Mrs Njeri Mburu, appreciated the facilitator her training and the knowledge and skills she had imparted to the members. The highly interactive sessions involved group discussions and presentations. At the end of the training, members were issued certificates.

Some commonly used terms used when mainstreaming gender, *Gender Mainstreaming, Glass ceiling, Gender equity, Gender equality, Gender blind, Gender lens, Sex and Gender* that were well explained during the training. The term “Glass ceiling” refers to barriers that women face when striving to move upward in the workplace.

Our call to you is to frequently evaluate your achievements and identify the Glass ceilings; then, “it is only made of Glass, please break through and move on”. Njeri Mburu, Chair Gender Mainstreaming.



CALL FOR PAPERS

Send abstracts and full papers to
Comsteda19@smase-africa.org

ABOUT COMSTEDA

COMSTEDA is a continental platform for educators to share innovative ideas, best practice, and interrogate issues relating to STEM education. The international forum brings together educators, policy makers, researchers, teachers, NGOs, and public / private sector stakeholders to present papers, posters, exhibitions and workshops.

AUC CESA STEM CLUSTER

CESA is AUC's revolutionary approach for implementing Agenda 2063 & SDG 4 on education. The STEM cluster was launched in 2016 with mandate to operationalize CESA Strategic Objective Seven. SMASE-Africa is a member of the cluster. The cluster serves to consolidate information on STEM education in Africa for peer learning, enhance alignment and harmony to facilitate identification and creation of synergies.

VIRTUAL 19TH CONFERENCE ON MATHEMATICS, SCIENCE AND TECHNOLOGY EDUCATION IN AFRICA (COMSTEDA 19) AND ANNUAL SMASE-AFRICA DELEGATES MEETING

THEME:
Teacher Professional Development in Africa: Knowledge, Skills and Values in STEM Learning Environments

CONFERENCE DATES
22nd -24th NOVEMBER, 2022



SCIENCE TECHNOLOGY ENGINEERING MATHEMATICS

STRAND ONE
Teacher Professional Development in Africa: Developing Knowledge, Skills, and Values in STEM teaching & learning engagements

- School-based Teacher Professional Development: Policy, Strategies and Practices
- Teacher Professional Development for Competency Based Education
- Promising Approaches in Teacher Professional Development

STRAND TWO
School Culture and Learning in STEM

- Leadership for Learning & role of professional associations: Case Studies on Support and Supervision
- Creating Space for in / out of school STEM Learning and application
- Equity and Access in STEM Education
 - Gender-based STEM Education
 - Inclusive STEM Education for Learners with Special Needs
 - Increasing STEM Learning Outcomes for Vulnerable Children

STRAND THREE
STEM Curriculum Development Implementation and Assessment

- Learner Engagement: Evidence-based Lessons on STEM / STEAM Education
- Pre-Service Teacher Development: Abilities, Skills and Values

STRAND FOUR
ICT Integration in STEM Education

- Resources and Solutions for STEM Learning
- Fun Learning STEM through Games and Robotics
- Link School and Industry on STEM Education

KEY DATES

- 1st call for papers: 9th June., 2022
- 2nd call for papers: 8th July., 2022
- 3rd call for papers: 8th Aug., 2022
- Submission of full papers & registration deadline: 21st Oct., 2022
- Conference dates: 22nd – 24th Nov., 2022
- Delegates Meeting: 25th Nov., 2022

CONFERENCE REGISTRATION

Registration fees covers admission to conference sessions. In order to publish your paper in the Journal on STEM Education in Africa (ISSN2617-6300) you will be required to pay an additional USD. 50. These rates are applicable to COMSTEDA 19 Only. [Register Here: https://bit.ly/3Oou2ec](#)

REGISTRATION FEES

- ❖ Focal point / Student: USD. 30
- ❖ Non-Student USD. 40

ACCOUNT DETAILS

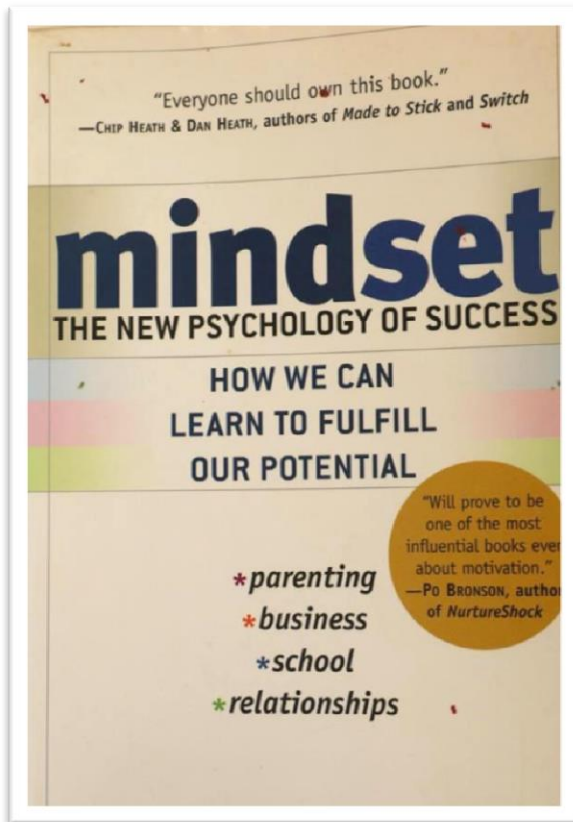
Payments to: NCBA BANK KENYA PLC
Account Name: SMASE-AFRICA
Account No.: 654 356 0017
Branch: MAMLAKA ROAD
S.W.I.F.T. BIC: CBAFKENX
Currency: US DOLLAR ACCOUNT
Bank Code: 07
Branch Code: 000
Send Bank slips to:
Email: treasurer@smase-africa.org
Copy: info@smase-africa.org
Website: www.smase-africa.org

Session Format

- **Paper:** 20 minutes presentation & 10 minutes QA
- **Poster** presentation includes a graphic presentation of a research study or otherwise on visual display. 3 minutes presentation and 2 minutes QA.
- **Workshops:** In-depth training or learning experiences. Presenters to pre-register for a workshop by submitting a one-page workshop concept note.
- **Innovations:** STEM-based innovations or otherwise. Show case and exhibit at the conference

Instructions to Authors

- **Paper Abstract:** 250 words: Indicate Strand & Sub-Strand
- **Full paper:** Language: English, Portuguese, French; **Margins:** 25 mm margins all around; **Line spacing:** 1.15; **Justification:** Full; **Font:** Times New Roman 12; **Referencing:** APA style; **Pages,** 10 Max
- **Authors:** First name, initials, surname, affiliations, e-mail address and WhatsApp telephone number
- **File:** "your name_country.doc". **(No PDF)**
- **Images:** High resolution Joint Photographic Experts Group (JPEG or JPG) format.
- **Papers:** that meet the above criteria will be published in the Journal on STEM Education in Africa (ISSN2617-6300)



Mindset: The New Psychology of Success

By: Esther Nyambura

Author: Carol S. Dweck

Genre: Self-help > professional development

What is the book about?

In *Mindset*, Carol Dweck talks about the growth and fixed mindset and what it means to an individual. She explains how the two mindsets influence the type of a person one becomes and whether one will achieve the set out individual values and goals or not. Dweck describes how a simple belief and change in a certain mindset has the power to transform one's psychology and life. This she realizes by giving life experiences of great individuals in different fields; sports, business and relationships, considering their detailed successes and failures. Dweck ends the book with experiences from kids and adults who found ways to use their abilities and offer advice on how each one of us can do the same.

Who would I recommend this book to and why?

Do you feel stuck in a rat race and you are looking for ways to better yourself? Do you feel too old to advance in your profession? Are you still holding to the childhood label of who you are and what you can and can't achieve? Do you believe talent is everything and you either have it or not? If you said yes to either of the above questions, it's time you grabbed a copy of the book. Forget about your limitations and develop a growth mindset. Your professional development goals matter and if your fixed mindset is in control, you could find yourself mired in underachievement and disappointments. Remember it is possible to learn anything you set your mind to and become limitless.

Which mindset do you have? An extract from the book mindset

Read the following statements on intelligence.

Tick if you agree or disagree with it.

1. Your intelligence is something very basic about you that you can't change very much. *Agree Disagree*
2. You can learn new things, but you can't really change how intelligent you are. *Agree Disagree*
3. No matter how much intelligence you have, you can always change it quite a bit. *Agree Disagree*
4. You can always substantially change how intelligent you are. *Agree Disagree*

Question 1 and 2 consist of fixed-mindset questions while question 3 and 4 growth mindset.

Which mindset are you? What will you do to obtain a growth mindset?

Pull-up - " — Carol S. Dweck

**Mindset
assessment**

CROSSWORD

L	E	A	R	N	I	N	G	Q	A	N	J
O	N	C	M	A	I	K	X	L	T	G	Z
X	K	O	O	Y	B	G	C	R	Q	C	E
G	T	N	B	A	A	A	A	G	H	S	G
N	L	O	O	P	C	I	B	S	B	K	J
I	E	V	F	W	N	H	U	W	X	I	L
H	E	M	M	I	L	P	I	R	J	L	T
C	E	H	N	L	P	E	E	N	H	L	D
A	D	G	O	O	Y	X	D	Z	G	S	Y
E	D	Q	R	I	E	V	B	G	K	M	C
T	L	T	R	T	G	C	T	X	E	G	O
D	E	V	E	L	O	P	M	E	N	T	U

Find key Capacity Building activities

- TRAINING
- LEARNING
- KNOWLEDGE
- COACHING
- SKILLS
- DEVELOPMENT
- SUPPORT
- TEACHING

PUZZLE

Which coin touches the bottom first?



Find the Answer to the Puzzle in the Next Edition



Enjoy the Taste of our Hospitality

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