



Ministry of Education



CEMASTE

CEMASTE RESEARCH AND DEVELOPMENT POLICY



APRIL 2017

**CENTRE FOR MATHEMATICS, SCIENCE AND TECHNOLOGY EDUCATION IN
AFRICA (CEMASTEА)**

P. O. BOX 24214-00502 Karen – Bogani-Karen Roads Junction, NAIROBI – KENYA

Phone: +254-20-2044406; +254-20 2633591; +254-0706-722697/0780-797648

E-mail: info@cemastea.ac.ke, Website: <http://www.cemastea.ac.ke>

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Approved for circulation



A handwritten signature in black ink, appearing to be "S.M. Njoroge".

Stephen M. Njoroge,

Director, CEMASTEА

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1. CEMASTEAM RESEARCH POLICY DETAILS



NAME OF THE POLICY	CEMASTEAM RESEARCH AND DEVELOPMENT POLICY		
REFERENCE NUMBER	GOP/RD/POLICY/2017		
ORIGINATOR/AUTHOR	R&D DEPARTMENT		
CUSTODIAN	DIRECTOR, CEMASTEAM		
POLICY EFFECTIVE DATE	2 ND MAY 2017		
POLICY REVIEW DATE	WHEN NEED ARISES		
IMPLEMENTATION RESPONSIBILITY	NAME	SIGNATURE	DATE:
	COORDINATOR, R&D DEPARTMENT DR. GRACE ORADO		2/5/17
APPROVED FOR IMPLEMENTATION	NAME	SIGNATURE	DATE:
	DIRECTOR, CEMASTEAM STEPHEN M. NJOROGE		02/05/17

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2. VISION

CEMASTEА is a centre of excellence in teacher capacity development in Africa

3. MISSION

CEMASTEА's mission is to transform teaching by continuously developing competences for effective curriculum delivery and improved quality of education

4. ACRONYMS

ASEI:	Activity, Student, Experiment, and Improvisation
CEMASTEА:	Centre for Mathematics, Science and Technology Education in Africa
CPD:	Continuous Professional Development
INSET:	In-Service Education and Training
JICA:	Japan International Cooperation Agency
KM:	Knowledge Management
MOE	Ministry of Education
M&S:	Mathematics and Science
NACOSTI:	National Commission for Science, Technology and Innovation
PDSI:	ASEI-Plan, Do, See, Improve
R&D:	Research and Development
SMASE:	Strengthening of Mathematics and Science Education
SMASE-WECSA:	SMASE- Western, Eastern, Central and Southern Africa
SMASSE:	Strengthening of Mathematics and Science in Secondary Education

5. BACKGROUND

CEMASTEА is a public institution that is mandated to provide Continuous Professional Development (CPD) for teachers. The CPD for teachers both at primary and secondary school levels has been implemented in two phases through In-Service Education and Training (INSET) programmes since 1998. Under phase 1 (1998- 2008), INSET programmes were implemented under the SMASSE project whose target was Mathematics and Science (M&S) teachers at secondary school level. During this phase, SMASSE-WECSA Association was initiated with a view to create synergy to address challenges affecting M&S education in African countries. In

phase 2 (2009- 2013), the need to include primary school INSET programmes necessitated change of name from SMASSE to Strengthening of Mathematics and Science Education (SMASE) project

The overall goal of the project was “To upgrade the capability of young Kenyans in Mathematics and Science”. The two phases of INSET project were implemented as a joint venture between Governments of Kenya through the Ministry of Education (MOE) and Japan through Japan International Cooperation Agency (JICA). After the project periods, the CEMASTEAs programmes have been implemented under teacher capacity development programmes of the MOE. The overarching teaching strategy is Activities, Student-centered, Experiments (practical work), Improvisation realized through Plan, Do, See, Improve (ASEI-PDSI) cyclic process as a pedagogical paradigm shift.

The CEMASTEAs Strategic Plan was developed as a best management practice for government institutions. The strategic plan of 2014 – 2019 has six thematic areas: Policy and Planning, Resource Development and Management, Capacity Development Programmes, Advocacy, Linkages and Partnerships, Research, Development and Knowledge Management and Automation. Strategic objectives shall be attained through defined strategies and activities, implementing actors within specified time frame, using specific resources and estimated budgets and detailed in the performance implementation framework.

Research, Development and Knowledge Management (RD&KM) is a key strategic component that CEMASTEAs shall capitalize on to remain relevant in its pursuit to implement capacity development of teachers. This policy will therefore help the R&D department to strengthen research and development and to manage the research process to the best standards possible.

6. DEFINITION OF TERMS

- Research:** A systematic study or investigation into a phenomenon with an intention to reach new insights.
- Research participants:** Refers to human subjects who act as targets of observation by researchers.

Research by CEMASTEА:	Research activities conducted by the staff of CEMASTEА.
Research with CEMASTEА:	Research activities conducted by other researchers in collaboration with CEMASTEА’s staff. This will also include studies by researchers seeking to use CEMASTEА’s data or its staff as targets of their research.
Justice:	Involves a fair distribution of both the benefits and burdens of research.
Conflict of interest:	A situation in which a researcher is in a position to derive personal benefits from actions or decisions made in the process of research conduct.
Data:	A set of information that is either qualitative or quantitative in nature.
Funding proposal:	A formal request submitted to a funding institution to support a research project.
Royalties:	A percentage of monetary value paid to an author from the proceeds of their sold publications.

7. PURPOSE STATEMENT

The purpose for this policy is to provide a framework for promoting responsible conduct of all research by or with CEMASTEА.

8. SCOPE

This policy is applicable to all research activities by and with CEMASTEА. The research conducted by and with CEMASTEА shall add to the body of knowledge in the areas of education within and outside Kenya.

9. OBJECTIVES

The following are the objectives of this policy

- 9.1 To provide a framework to guide research activities by or with CEMASTEА.

9.2 To provide guidelines on the process of data acquisition, management and dissemination of findings.

9.3 To give direction about research related norms, standards and regulations.

9.4 To provide a framework for supporting research collaboration, mentorship and authorship.

9.5 To provide a guide for managing of CEMASTEAs research funds, application and management of research grants and royalties.

10. PRINCIPLES

This policy is guided by the following principles:

10.1 Protection of research participants: All the research that is conducted by or with CEMASTEAs shall ensure that participants are protected from harm caused through participation in the research. In addition, all data collected for purposes of research shall be kept confidential and used only for purposes of the research.

10.2 Legal and policy requirements: The research design, data collection, analysis and dissemination of results shall abide by all legal and policy requirements governing research conduct.

10.3 Honesty in all aspects of research:

All researchers by or with CEMASTEAs shall:

- a) Abide to research integrity, ethical principles and professional standards as essential components of responsible conduct of research.
- b) Conduct their investigations truthfully and avoid falsification of data that could mislead research outcomes.
- c) Ensure that information from other sources is referenced appropriately. Presentation of research results from other persons masquerading as own is against ethical standards.
- d) Ensure that all contributors in any publication are duly acknowledged.
- e) Abide with the code of research ethics by avoiding data manipulation so that it agrees with one's theory

10.4 Accountability in the conduct of research

- a) Any research conducted by CEMASTEА staff shall be guided by the R&D General Operating Procedures.
- b) Any research conducted by researchers affiliated to CEMASTEА shall ensure that:
 - (i) Approval is obtained from CEMASTEА R&D department; authorities of the target research populations ("Gatekeepers"); and from the National Commission for Science, Technology and Innovation (NACOSTI).
 - (ii) Data collection instruments such as questionnaires and interview schedules, and any other relevant documents requested by the granting institution shall be submitted together with the research requests to CEMASTEА
- c) CEMASTEА will review all research requests for compliance with research standards and ethics. Research requests can be approved with: no amendments, corrections, or rejected.
- d) The approval, or otherwise will be communicated to the applicant within 20 working days after the date of submission.
- e) Within three months after completion of the research project, researchers with CEMASTEА shall commit to provide a copy of their research report.

10.5 Ethical considerations: The research participants shall be given information about the research including how:

- a) participating in the research shall benefit them
- b) possible risks of participating in the research
- c) the research findings shall be used
- d) their confidentiality and privacy is assured

10.6 Conflict of interest:

- a) Researchers shall declare any conflict of interest, whether financial or otherwise when conducting research.
- b) Researchers must familiarise themselves and comply with the CEMASTEА policy on conflict of interest.

10.7 Research partnerships: CEMASTEА shall enhance its internal research capacity through collaborations and linkages

10.8 Management of research funding: Conferences, symposia and workshops by or with CEMASTEА shall be organized and funded through R&D.

11. RESEARCH ETHICS: CODE OF PRACTICE

Any research by or with CEMASTEА shall be guided by the following code of practice:

11.1 Justice in research

- a) The burdens and benefits of research shall be distributed fairly.
- b) Justice will be ensured through giving equal chance to research participants. There will be no discrimination based on gender, geographical locations, religion, ethnicity and persons with special needs.

11.2 Approval of research

- a) Research by CEMASTEА shall be approved as per the R&D General Operating Procedures.
- b) Communication on all research with CEMASTEА shall be through the office of the Director.
- c) All research with CEMASTEА shall be reviewed on ethical issues by the R&D department.

11.3 Respect for participants: When conducting research for publication:

- a) No person shall be coerced into participating in any research.
- b) Permission to conduct research should be obtained from gatekeepers
- c) Consent shall be obtained from the participants who are above 18 years. Research purpose should be explained to children's below 18 years and their assent sought.
- d) The information obtained shall be treated with confidentiality it deserves.

- e) Participants shall be informed about the purpose of the research and how the results will be used.

11.4 Honesty

- a) Data obtained shall not be modified to suit the interest of the researchers.
- b) Researchers are required to abide by professional practices of research.
- c) The coordinator of R&D shall ensure that data collected and processed is authentic.

11.5 Dissemination of findings

- a) Researchers shall report the research findings accurately and transparently without undue influence from anyone including funders of the research.
- b) Any research findings by or with CEMASTEА shall be shared with CEMASTEА staff through the R&D department before sharing in conferences/workshops or publishing.
- c) Presentation of papers arising from research by CEMASTEА in conferences shall be approved through R&D.

12. INTELLECTUAL PROPERTY

- 12.1 CEMASTEА shall provide a favourable environment that encourages intellectual innovations and creations.
- 12.2 CEMASTEА shall invoke national and institutional guidelines on intellectual property rights in order to protect the intellectual properties, innovations and creations by its researchers.
- 12.3 Authors with CEMASTEА shall familiarise themselves with the CEMASTEА's Intellectual Property.

13. PLAGIARISM

- 13.1 CEMASTEА shall promote the generation of credible research based on integrity
- 13.2 All research in CEMASTEА shall be conducted in honesty. CEMASTEА regards unwarranted research duplication as a serious offence.

14. FINANCIAL ASPECTS

14.1 Finances from CEMASTEА

- a) All research projects involve some financial cost and require sound financial management.
- b) All research by CEMASTEА involving financial costs shall be administered according to the funding proposal.
- c) Funding proposals shall consider institutional, statutory and ministerial regulations.
- d) Financial support for presentation of papers in a conference shall be available to CEMASTEА staff only. It shall be considered and provided upon a review of application for the support made by filling appropriate form.

14.2 Grants: Researchers are expected to uphold the highest standards of integrity, transparency and prudent use of finances in accordance with budgetary procedures and contractual regulatory aspects related to the research. All researchers shall familiarise themselves, and comply with applicable institutional and funder-specific policies.

14.3 Royalties

- a) When author(s) write with support from CEMASTEА, the institution shall own full copyright. Authors shall be acknowledged.
- b) When author(s) write using data from CEMASTEА, and without financial support from the institution, they shall be guided as per R&D General Operating Procedures.
- c) Innovations arising from research shall be administered as per CEMASTEА Innovations Policy.

15. RESEARCH COLLABORATION

15.1 CEMASTEА shall continue to support and seek research collaboration with other partners in areas of common interests.

15.2 Partners shall establish and facilitate common programmes, conferences and joint research projects that are mutually beneficial to the participating partner institutions.

- 15.3 Collaborating parties shall ensure that respective roles and responsibilities are mutually agreed upon and clearly spelt out at the beginning of the project.
- 15.4 CEMASTEА and the collaborating partner(s) shall commit to adequately fulfil their respective research obligations.
- 15.5 CEMASTEА and the collaborating partner(s) shall formalize their research collaborations with a ‘Memorandum of Understanding’ at the initiation of the collaboration.
- 15.6 Upon a specific project, the collaborating partners shall mutually agree on terms of reference, duties and responsibilities of each party through a Memorandum of Agreement.
- 15.7 Programmes and/or departments at CEMASTEА shall develop their own guidelines for effective research collaboration in consultation with the R&D department.

16. MENTORSHIP

- 16.1 CEMASTEА shall encourage mentorship initiatives between its more experienced and junior staff, and between its staff and other experienced researchers from other research institutions.
- 16.2 Mentors shall ensure that the research project is begun with a clear understanding of mutual responsibilities between them and their mentees.
- 16.3 CEMASTEА shall maintain a supportive research environment for both mentors and mentees.
- 16.4 Both mentors and mentees shall be guided by CEMASTEА’s research regulations and protocols on joint authorship.

17. AUTHORSHIP

Researchers with CEMASTEА shall ensure to publish their research results in credible publishing platforms. The following authorship principles shall apply:

- a) Authorship credit shall be based on substantial contributions to conception and design, acquisition of data, analysis and interpretation of data; drafting the article

or revising it critically for important intellectual content; and final approval of the version to be published.

- b) Acquisition of funding, collection of data, or general supervision of the research, alone, does not justify authorship.
- c) An administrative relationship to the investigation does not of itself qualify a person for co- authorship.
- d) The order of the names in a publication shall be decided according to the quality of the contribution, the extent of the responsibility and accountability for the results, and the custom of the discipline.
- e) The attribution of authorship is not affected by whether researchers were paid for their contributions or by their employment status.
- f) An author who submits a manuscript for publication accepts the responsibility of having included as co-authors all persons who are entitled to co-authorship, and none who are inappropriate;
- g) The submitting author should send each co-author a draft copy of the manuscript and should make a reasonable attempt to obtain consent to co-authorship, including the order of names; other contributions should be indicated in a footnote or an acknowledgements section, in accordance with the standards of the discipline and the publisher.

18. REGULATION

CEMASTEAs R&D department shall be authorised to set up and maintain guidelines and procedures for the implementation of this policy.

VISION

**A CENTRE OF EXCELLENCE IN TEACHER CAPACITY
DEVELOPMENT IN AFRICA**



MISSION

**TO TRANSFORM TEACHING BY CONTINUOUSLY DEVELOPING
COMPETENCIES FOR EFFECTIVE CURRICULUM DELIVERY AND
IMPROVED QUALITY OF EDUCATION**