POLICY BRIEF

By R&D KM Department

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SUPPORTING TEACHERS TO CONTINUE IMPROVING THEIR PRACTICE: WHAT NEEDS TO BE DONE

Supporting teachers is one way to ensure that ideas learned during Teacher Professional Development (TPD) programs are implemented leading to improved learning outcomes (Capps & Crawford, 2013; Postholm, 2012). Such support can be as simple as a positive school culture and an understanding of teachers' learning (Postholm, 2012) at the same time sustaining the professional development support during practice.

CEMASTEA has been conducting professional development of science and mathematics teachers to change their attitudes as well as those of their students. The focus of professional development is mainly on shifting the teaching from teacher-centered to learner-centered pedagogies. Learner-centered pedagogies allow students' autonomy in their own learning at the same time making teachers to share their positions of authority in class (see Figure 1).

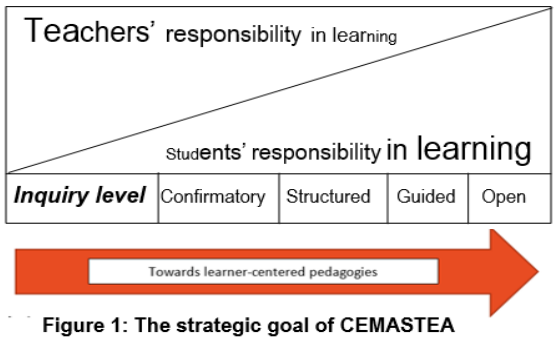

Figure 1: The strategic goal of CEMASTEA

A study that followed 40 secondary school mathematics and science teachers from eight counties after participating in a training by CEMASTEA showed that the need for teachers' support especially by school administration is crucial (CEMASTEA, 2020). The study that also involved 811 students sought to determine the extent of implementation of inquiry-based learning (IBL) and 5E instructional Model strategies in teaching and learning. The IBL strategy has four possible levels of implementation including confirmatory as the lowest through structured, guided and open as the highest level. On the other hand, 5E Instructional Model describes the stages of involvement of learners as they learn through inquiry. The stages are Engaging, Exploring, Explaining, Extending/Expanding and Evaluation. The teachers who participated in this study had undergone training on how to employ these strategies in their teaching. The study utilized lesson observation protocols, one-on-one interview schedules and questionnaires to gather data.

What kind of support do teachers need?

Support teachers to develop content knowledge and pedagogy concurrently

A key feature of the lessons observed was ***high pedagogical knowledge but lower content knowledge.*** For example, 45% of the lessons observed had content tasks designed at the low "confirmatory" level of inquiry and a further 42.5% at "structured" level of inquiry. The teachers, rarely made changes to the material as presented in the course books. This may be due to low content mastery. However, it was noted that when in class, 53.1% of the teachers operated at higher levels of inquiry (i.e., "guided and "open" inquiry) often characterized by open-ended questions that extended learners engagement. This implies that teachers need support to master, adapt and re-represent content in ways that would reflect and optimize their wide range of pedagogical strategies.

Support schools and teachers to rethink the learning infrastructure

The teachers cited inadequate infrastructure as one factor that hindered the implementation of

strategies learned. Specifically, teacher said they lack laboratories dedicated for their individual subjects, had few teaching and learning resources, and used classes that lacked space. They indicated that, a number of equipment (e.g., sockets, projectors and cables were dysfunctional). CEMASTEA advocates for teachers' support by the school administration especially through procurement of teaching and learning resources. This advocacy is based on a strong conviction that a teacher would more likely drop the urge to implement ideas learned through TPD programs if such ideas require certain resources that are not readily available. In low resource environments, both school administrators and teachers need to rethink the infrastructure in terms of prioritization, optimization and improvisation.

Professional development of teachers while leveraging ICT

Teachers reported that the professional training sessions were inadequate and sought to get more support. They specifically sought wider (more areas covered) and deeper (more time allocated to an area) training. At the same time, it was noted that there were very ingenious teaching innovations that teachers would like to share amongst themselves. CEMASTEA has consistently sensitized teachers to view ICT integration not just as the use of computers, but also about use of tools such as phones, cameras, and internet to enhance learner-centered teaching and learning. With the ensuing increase in uptake of ICT, there exists numerous opportunities for both CEMASTEA and teachers to leverage on ICT to extend training beyond the professional development training period, create and enhance communities of practice as well as use ICT to track and share innovation amongst the communities of practice through cloud hosting. Further, when teachers use creative teaching strategies such as play, song and dance supported by technology there is evidence of enhanced learning (Cooper, 2016; Kennewell & Morgan 2006). Teachers need the support to leverage on the full potential of ICT.

Supporting school administrators to provide instructional leadership

Teachers reported low morale arising from lack of support by the school administration, heavy workloads; emphasis on the pace of coverage of syllabus at the expense of quality teaching; and entry characteristics of learners that were increasingly becoming more diverse including students with special needs. Teachers need internal school support to get formative fulfilment from the achievement of excellence in teaching. School leadership needs to focus on supporting the development of exemplar teaching formatively rather than summative, with emphasis on not just cognitive but also affective and competency outcomes.

This Policy brief addresses four main challenges (1) Low content mastery (2) Inadequate infrastructure (3) Under-utilisation of ICT (4) Inadequate instructional leadership

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Further readings

CEMASTEA (2020). A report of research on impact assessment of teacher professional development by CEMASTEA: The extent of implementation of IBL in classrooms in Kenya. Unpublished Report. CEMASTEA: Nairobi, Kenya.

Capps, D. K., & Crawford, B. A. (2013). Inquiry-based professional development: What does it take to support teachers in learning about inquiry and nature of science? *International Journal of Science Education, 35*(12), 1947–1978.

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Kennewell, S. & Morgan, A. (2006). Factors influencing learning through play in ICT settings. *Computers & Education*, 46, 265–279.

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