

Science and Mathematics teachers as “agents of change” regarding the educational reform in the global knowledge society

There is now a general consensus amongst education policy makers in the world that there is a shift towards a global knowledge society requires that we teach for those general transferable thinking and learning skills associated with communication, collaboration, and creativity. This educational vision calls for reforming and rethinking of the provision of Science and Mathematics education in society to be able to produce citizens who can think globally and work as a catalyst to initiate innovations in the global knowledge society. One of the most significant current reforms of education generally and in science and mathematics education specifically is implementing interdisciplinary science, technology, engineering and mathematics (STEM) education in all educational stages from kindergarten to higher education because of its impact on increasing students' interest in STEM professions in addition to increasing students' 21st century skills and prepare them for the knowledge society. For these reforming initiatives and visions to take place and be implemented successfully in schools, a parallel reform needs to happen to science and Math teacher education and teacher professional learning. Teachers not only play a key role in realizing successful changes in education, but also they are the core of educational change and being potentially the most important asset in the notion of a knowledge society. Therefore, teacher professional learning should be conceptualised as a mechanism for driving change in educational systems and/or as a strategy for empowering individuals and teams to improve their professional knowledge and pedagogy considering the sociocultural- political settings of the educational visions need to be enacted. This calls for shifting in the culture, values and practices of teacher professional learning programmes that can empower teachers to form their own zones and communities of professional learning which requires a movement away from teacher's traditional professional authority and autonomy towards new forms of relationships with colleagues, with students, with parents and with other professionals and communities in society.

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