

Learner Perspective of Pedagogy for Improved Performance in Stem Subjects

Abstract

Science, Technology, Engineering and Mathematics (STEM) instruction has gained prominence in the education circles because of the need to transform economies and educators have attempted to develop integrated instructional programs to actualize this. This has been informed by the poor performance in the STEM subjects which has largely been blamed on the traditional learning processes which have taken the form of direct transfer of knowledge from the teacher to students/learners. The teacher centered approach has been criticized for not actively involving learners. Indeed students learn better if they are actively involved in the learning processes. This review, discusses the pedagogical issue affecting performance in STEM subjects from a student perspective. The student related factors, affecting performance in STEM subjects are addressed and the plausible interventions to improve on the performance in these subjects. The main search key themes included: students' pedagogical beliefs and attitudes, IT access and integration, ICT skills capacity interventions, cloud digital content and academic and performance in STEM Subjects. In the review the researchers analyzed the literature drawn from both qualitative and quantitative studies from different sources such as Emerald, Taylor and Francis, JSTOR among others. The review clearly found that to transform performance in STEM education, there is need to employ new learner friendly pedagogies and embrace ICT integration in the learning of STEM subjects, institute interventions in skill capacities among teachers and learners, the need to access digital content in the cloud and need for ICT integration in the learning of STEM subjects. The study findings are an eye opener for further research and capacity interventions for students and teachers to improve learning in STEM subjects.

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