

The effect of participating of physics teachers in Learning Communities guided by leading teachers, on their Practice

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Abstract

This research was carried out in 2013-2014 among physics teachers who participated the meetings of "Regional Learning Communities of Physics Teachers". The research concerned the effect of teachers' learning in regional communities guided by leader teachers in fan model, on their practice. The research checked three aspects: Attributes of teachers' learning in regional communities, Factors affects the attributes of teacher's learning in regional communities, Changes in attributes of teacher's learning in regional communities over time. The motivation of this research tied with problems faces physics instruction: Loaded syllabus, Coping with study material supplier, One teacher usually teaches at a school without peer consultation and mutual support, Students' learning difficulties associated with the abstract nature of many scientific concepts, The quality of science teaching which still largely relies on the transfer of knowledge, is not sufficiently focused on the learner and threatened by a shortage of qualified science teachers, Small number of students chooses physics. Therefore, professional development of teachers is an essential ingredient and decisive response to these problems. Studies have shown (Vescio et al., 2008, Eylon & Bagno, 1997) that one of the ways professional development of teachers is their participation in long-term learning communities. Teacher training in these communities is carried out around the daily practice and an evidence-based approach to encourage collaborative processes of reflection. Teachers are activated individually and experience for themselves before implementation of their students in the classroom. The main contents include taught communities: A) the use of teaching methods focused on learning and faced students different abilities and different needs, such as diagnostic tools to expose the difficulties of learning and teaching strategies for the treatment of learning difficulties {POE, peer instruction, learning from mistakes, formula and meaning and a wait time}. B) Diversification of teaching in order to create excitement and attraction to the profession. C) Increasing knowledge of physics and physics teaching.

Findings

Teachers reported that they understood the rationale of using diagnostic tools in classrooms and related purposes and structure appropriate sequence of operation, knew how the students' difficulties revealed by the tools for

diagnostic and distinguish between problems of content and difficulties associated with the extent of the confidence of students giving their answers, related to the bond between the difficulties identified and operation of teaching strategies and explain why the activation strategy helps treat learning difficulties.

Teachers operated strategies in their classrooms with subjects who saw in community meetings and with topics that they themselves initiated, and adjust the level of implementation in their classrooms.

Leader teachers were attended to the needs of teachers and tried to give them an answer during the meetings .This attention helped teachers dealing daily with students and encouraged them to keep good attendance in meetings of communities.

We recommend a follow-up study after the practice of teachers that can shed light on the extent of support needed, so tools which they recognized in communities, become part of a structured and integral part of their daily practice. Also continuing research can illustrate the extent to which teachers are able to guide their own colleagues at their school.