

today's changing societies. The findings have also highlighted that such a need for better preparation of students for the future requires new curricula and teaching approaches that focus not only on learning scientific content but also on acquiring advanced transferable abilities related to scientific investigations and logical reasoning skills that can be used to solve societal problems.



VIDEO RECORDED LESSONS AS A MEDIA DURING A SEMINAR FOR DEVELOPING PROSPECTIVE PHYSICS TEACHERS' PCK

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Starting from the fact that teaching and learning are complex procedures where multiple approaches could be fruitful, reflection upon practices and reshaping past and current experiences appeals to encourage professional growth. Reflection becomes even more important when it concerns preservice Science teachers where opportunities for self-reflection and collaborative reflection upon teaching episodes could become a valuable media for fostering professional growth. This paper discusses the use of video-stimulated reflection as a means to promote awareness of student Physics teachers' among specific PCK aspects during a seminar concerning professional knowledge and instructional practices.

The research was carried out in the form of case studies with six student teachers participants who were at the second year of their master degree at Science Education. Students participated altogether in sessions where videotaped lessons of both pre-service and in-service Science teachers were displayed. After that, tutor was engaging them in a reflection procedure.

Research data were collected via a variety of research instruments, namely classroom observations and field notes, audio recordings of

seminar sessions, interviews and video-stimulated reflection. Grounded theory was used for the qualitative analysis, i.e., the data were approached with relatively little preconception, as the researcher endeavored to identify categories of meaning from the data.

The analysis of the data shows that, student teachers spent a great deal of discussion time and collaborative reflection time, founding at the videotaped teaching episodes valuable elements for their professional development. They found effective opportunities to 'learn to notice' upon critical moments concerning instructional strategies, motivation for using technology, the role of experiment in an inquiry based learning sequence, the classroom context as a whole. These remarks might contribute to further discussion upon students' perceptions about teaching and learning and therefore to provide opportunities to develop aspects of their PCK.

Keywords: PCK, video, reflection.



HOW CAN WE TEACH MODERN PHYSICS EFFECTIVELY?

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Physics consists of classical physics and modern physics. Classical physics is convenient with everyday life. In daily life, many events are explained by classical physics. According to classical physics, modern physics is abstract. We do not see modern physics experiments daily life. Modern physics experiments can do special laboratory circumstances. Therefore modern physics is difficult, complex and unclear for students. The purpose of the present study is to investigate how students learn modern physics effectively. Especially, for this purpose the research on modern physics is examined with regard to effective learning methods and their results about modern physics. In the literature for effective teaching, researchers focused on experiments, demonstrations, new learning-teaching methods, students' ideas about modern physics issues.

In addition to the literature, for modern physics teaching, proverbs can use in modern physics course. In modern physics some of the events