

Does a girl-friendly approach to the teaching of school science exist?

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THE KENYAN SITUATION

- The concern about girls' lower level of performance may be based on the fact that they (girls) must also attain the requisite grades in order for them to be admitted into the mathematics and science related courses and hence the professions.

'ANNUAL MINISTERIAL COMMENT'

"... other poorly done subjects were chemistry, biological science and physics... candidates' performance in ...mathematics and sciences is still below average, especially that of girls" (Oyoo 2004, p. 26).

THE QUESTIONNAIRE

- General teacher competencies and the kind of lessons that would create good learning.
- Conducive classroom climate and attributes of an effective physics teacher.
- How much the students want to be involved and assessed.
- Inter-departmental approach, physics teacher commitment and home and school collaboration.

ITEMS WITH WHICH PARTICIPANTS STRONGLY AGREED I

- B46 The physics teacher should allow students to ask questions when they do not understand
- B06 A good physics teacher is someone who is actually interested in the subject and keen on it
- B48 Students should work co-operatively in groups during physics practical sessions
- B24 Physics teachers should assess students' assignments frequently and carefully

ITEMS WITH WHICH PARTICIPANTS STRONGLY AGREED II

- B14 Teachers should know how to get the students to do well in physics exams
- B08 Teachers should give individual help to students when stuck while doing problems
- B37 Clear instructions during lessons are important
- B18 Students should be talked to about physics, careers and individual problems
- B01 Physics teachers should display good knowledge of the subject

ITEMS WITH WHICH PARTICIPANTS STRONGLY DISAGREED I

- B54 Teachers of physics should never accept students' ideas during lessons
- B52 True physics teachers are not supposed to offer advice and guidance to students
- B10 Teachers of physics do not have to check homework
- B57 Physics teachers should never be patient with students
- B20 Extra lessons particularly in physics are not useful

ITEMS WITH WHICH PARTICIPANTS STRONGLY DISAGREED II

- B07 Physics teachers do not have to relate physics to everyday life
- B12A physics teacher does not have to be good at the subject
- B15 Physics teachers should never smile in class with students
- B39 Physics teachers do not have to motivate their students
- B04 Real physics teachers should not give students notes

ITEMS ON WHICH RESPONSES WERE DISTINCTLY DIFFERENT

IN THE WHOLE STUDY, only two items were identified on which the responses suggested distinctly different responses when reflected on the four-point scale:

- B32 Teachers of physics should always provide work in advance of topic: (Girls 3.32 Boys 2.52 Difference 0.80)
- B33 Teachers of other subjects should not punish students arriving a little late from the physics labs: (Girls 2.38 Boys 2.90 Difference 0.52)

PREFERRED EFFECTIVE PHYSICS TEACHER CHARACTERISTICS

- ... Good Physics teachers are knowledgeable, competent and enthusiastic in their subject and in class management, understanding and sympathetic to students and their needs. It is important but not sufficient to be an expert in the subject. It is important but not sufficient to deliver the interesting and stimulating lessons. It is important, but not sufficient to develop good relationships with the students; to like, to respect and to understand them, and to help them to develop their potential. Good Physics teachers combine all the three of these attributes

(Woolnough 1994, p.24)

THE CONCLUSION - ANSWER

- ... we need to talk in terms of not a pedagogy for girls or boys but a pedagogy being composed of a range of strategies (which include a range of materials and content, teaching styles, and classroom arrangements/rules) for different groups of students ... The key issue is for the teacher to understand which strategy is appropriate and effective in which setting and for which group of students and individuals. (Murphy 1996:8)