

## **Description and effect of a Physics kit and easy experiments used in a developing country**

". . . I know from both experience and research that the teacher is at the heart of student learning and school improvement by virtue of being the classroom authority and gatekeeper for change. Thus the preparation, induction, and career development of teachers remain the Archimedian lever for both short- and long-term improvement of public schools." Cuban (2003)

This comment is made when the Finland's exemplary K-12 system were looked at closely after they achieved the first place in PISA(20??). This was done in a 20 year time period where as recently as the 1970s, Finland required that children attend school for just six years and the education system was nothing special. However, new laws supported by substantial government spending created, a system that graduates nearly every young person from vocational or high school, and sends nearly half of them on to higher education. At every level, the schooling is rigorous, and free.

The "key" for this achievement lays in the high quality of Finnish teachers, according to Pekka Himanen, 31, a renowned scholar with a PhD in philosophy (earned at age 20) who is a kind of guru of information-age Finland. "You need to have a college-level degree to run a kindergarten. You need a master's-level degree to teach at a primary school. Many of the best students want to be teachers. This is linked to the fact that we really believe we live in an information age, so it is respected to be in such a key information profession as teaching." There are three reasons for their achievement according to one of the headmasters in Finland namely "teachers, teachers and teachers".

For example, schools that participate in the ZENNEX project have Somerset Micro Science kits, and all of the high schools sampled in Butterworth had some science teaching equipment. In the 21 schools visited, only five seemed to have attempted to use the science teaching equipment. The equipment was found to be gathering dust or neatly stored in boxes that had never been opened in 16 of those schools. Similarly, visits to three Masifunde Project schools in the Free State Province during 2000, and at a school where the author taught, revealed an assortment of unused science teaching equipment. All schools had some expired chemicals and broken or poorly maintained physics equipment some of which teachers could not identify. Muwanga-Zake, 2001

### **Is Science Education in a crisis? Some of the problems in South Africa**

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#### References

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