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## SOUTH AFRICA: Row over research into school books

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With its basic education system in a shambles, the South African government is rolling out easy-to-read workbooks to the poorest schools. But it may be wasting millions of Rand - more rigorous research is needed to test the efficacy of such books before they are handed out to children, according to a new study by researchers at the University of the Witwatersrand and JET Education Services. The study has infuriated the book project leaders.

The research, carried out between January and June this year, found that while a particular set of workbooks for Grade 6 mathematics was effective, it worked no better than an approved textbook currently used in South African primary schools.

"Before a national rollout we need to understand what good quality materials actually are and we need research that shows they work in robust representative samples," said Brahm Fleisch, professor of education policy at the Wits School of Education and one of the lead researchers of the study.

Basic and secondary education is not only a research and teacher training interest for South African universities. They have a vested interest in improving the quality of schooling to ease the serious challenges they face in dealing with bright but under-prepared students entering higher education.

A key finding of the report suggests that any good quality materials, whether workbooks or textbooks or a combination of both, used consistently and systematically by all learners, can greatly enhance academic performance. For Fleisch, this outcome places a question mark over whether investing heavily in new materials is wise, when current books appear to work just as well.

"Certainly there is no warrant of these materials as they stand relative to standard textbooks if they're provided comprehensively to all learners," said Fleisch.

The study was undertaken in response to the Department of Basic Education's 2010-11 budget allocation of R750 million (US\$104 million) for literacy and mathematics books for Grade 1 to 6 children at the nation's poorest schools.

Dubbed the Workbook Project, the initiative is designed for the lowest income quintiles as an aid to assist under-qualified teachers in rural areas. "They are aimed at the poorest of the poor children, where there is no running water, electricity or toilets," said Veronica McKay, coordinator of the project.

McKay and her colleagues are incensed at the study and its accompanying press release, accusing it of being "methodologically flawed" and "deliberately misleading."

"Their study is so flawed, I'm stunned," said McKay. "Their conclusions are quite spurious."

McKay and her team criticised many aspects of the study. One is that the terms textbook and workbook are never clearly defined, and that the textbook used in the study is more characteristic of a typical workbook. She also said the press release was deliberately aimed at jeopardising the Workbook Project by insinuating that the project's actual workbooks were used in the study, which she said is an impossible feat.

"We're far from completing our workbooks, which are still in the early stages of development," said McKay. "We're doing our own little pilot in informal settlements."

The set of workbooks used in Fleisch's study were in fact a group of Grade 6 mathematics books developed by South African educators and trialed extensively in Limpopo province. Fleisch said the original intention of the study was to look at the efficacy of these particular books. The finding that any good quality materials, be it a workbook or a textbook, given to all children and used consistently leads to an improvement in performance was not the intended purpose of the study, said Fleisch.

As for the government's new workbook, Fleisch said they did not and cannot make any claims whether they work or don't work, but the results of the study do show that any books must be thoroughly tested before being given to schools. "I am genuinely concerned prior to any national rollout that we need very strong independent consistent research to test effectiveness," said Fleisch.

The study is a randomised control trial in 42 of the poorest primary schools in Gauteng province. The schools were randomly assigned to experimental and control groups. Children in the experimental group were issued with a workbook, which they wrote in directly, while children in the control group were all given Classroom Mathematics, an approved textbook used widely in South African primary schools. Both groups of children showed significant improvement in their academic performance, with no statistical difference in the gains made.

Fleisch said the study also showed that randomised control trials could be a useful method in education testing.

"We understand not all questions are answered, but it's an important resource to answer very important quality questions and implement cost effective initiatives," explained Fleisch. He said in conjunction, high quality qualitative research was needed to look at why something worked or didn't work.

The report is part of a larger set of research studies that Fleisch and his team are embarking on, using randomised control trials to try an impact on policy development. Their next study, in 2011, will test the effectiveness of the Singapore Math Method, based on materials from the national curriculum of Singapore, in South African schools.

The Singapore Math Method "is being used increasingly internationally, and has demonstrated to be quite

effective," said Fleisch.

Considering the huge sums of money needed to develop and distribute new materials, studies such as these are essential, a point agreed on by both Fleisch and those behind the Workbook Project.

"[Fleisch's] paper, though I believe it to be flawed, is an extremely important piece of research that needs to be replicated and followed up," said John Aitchison, another coordinator of the Workbook Project, in a statement.