Programme for International Student Assessment (PISA) - learning for tomorrow's world?

by Patricia Bünz

Recently a discussion has been going on in Germany about the Programme for International Student Assessment (PISA), an Organization for Economic Cooperation and Development (OECD) programme. The PISA results shook the belief of Germans and other countries that their education system was one of the best in the world. PISA 2003 seemed to confirm that the quality of the German education system is only average. But what exactly is PISA and can we learn anything from it?

PISA is an international standardised assessment of 15-year-olds, which takes place in 3-yearly cycles in industrial countries. The domains of reading, mathematical and science literacy are assessed in all cycles. However, the emphasis differs from cycle to cycle. In 2000, the main focus was on reading literacy, in 2003 on mathematical literacy and problem solving, while the emphasis will be on scientific literacy in 2006. The survey was implemented in 43 countries for the first assessment, and 41 countries participated in 2003. Tests were administered to between 4500 and 10,000 students per country. PISA was developed to find out what kind of knowledge and skills students have acquired, and how well prepared they are for tomorrow's world near the end of their education. In addition, results should enable countries to monitor their progress in meeting key learning objectives. Sounds wonderful, but is this survey really useful?

Most of my teacher friends criticise the survey as a generalisation, which does not consider the differences and diversity amongst students or national education systems. However, PISA *did* evaluate differences in schools, gender and socio-economic background. In addition, school policies and practices, resources invested in schools, the organisational structure, and the student approach to learning were assessed. However, these factors were not considered for the determination of overall scores.

In contrast to reading, which showed an overall gender difference in favour of girls, there were no pronounced overall gender differences in mathematics or problem solving.

In contrast to reading, which showed an overall gender difference in favour of girls, there were no pronounced overall gender differences in mathematics or problem solving. In most countries, gender differences were larger within schools than overall and depended on the evaluated area of mathematics. PISA also showed that there is a link between mathematics performance and school differentiation (use of different institutions or programmes to group students) or students background (e.g. parents' education level, students' immigration status, and language spoken at home) in favour of students with a more advantaged home life. These differences were more pronounced in Germany than in Finland, the top ranking country. In addition, school resources appear to reinforce rather than moderate socio-economic differences in Germany.

PISA – learning for tomorrow's world?

Parents complain that less and less money is invested in education. One friend of mine once said that life was wonderful as long as her children were at kindergarten but life is unpredictable for parents with children at school. She never knows when her children leave for school or are coming back home because classes were dropped due to teacher shortages at school. Teacher shortages appears to be of concern in a number of countries according to PISA 2003.

"You cannot teach a man anything, you can only help him to find it for himself".
Galileo Galilee

Recently, two 16-year-olds provided their opinion on PISA 2003 in a German newspaper. They assumed that the German outcome is linked to their observation that most of their fellow German students do not even speak their own language in a grammatically correct way. I agree that nowadays some parents shift responsibilities like learning discipline or German to the school. Thus, teachers are hindered in their instruction capacity by dealing with these kind of problems. School should not only motivate students, show them their own abilities and teach them how to adopt effective learning strategies, but should also show them the relevance of lifetime learning.

Politicians use PISA to justify their wish for global changes in the German education system but their recommendations are not really new and are mainly made for political reasons. A teacher said that 30 years ago another international survey on education resulted in even worse results for Germany. I assume that this survey assessed the knowledge and skills of some of the German politicians. Interestingly, Germany showed an improvement in 2003 in science performance and in some areas of mathematics performance since 2000. Thus, it would be more interesting to investigate the reasons for the overall average German outcome before implementing global changes in the education system.

Obviously there are very different opinions about PISA. But what kind of questions were really asked in this survey? I would like to provide you with one example of the mathematics tasks which students had to solve. A figure was shown to the students illustrating a staircase with 14 steps and providing additional information like a total height of 252 cm. The total depth of the staircase was added as redundant information to confuse the poor student. The question "What is the height of each of the 14 steps" should have been answered. According to PISA, the correct answer is a simple division (252 cm divided by 14). But is this true? No! They should have asked for the mean height of each step! Thus, the correct answer would have been a counter-question to be able to measure each step on site.

So what can we learn from PISA? How about that learning never ends, not even for people who develop these surveys!

Last, but not least, I would like to say "goodbye" to the editorial board of TWS. After 3 years working as Linguistic Diversity Editor, I decided to resign from this position. It was always a pleasure working on the editorial board and I hope that someone else will have as much fun in this position as I had.

Patricia Bünz
patricia.buenz@fresenius-biotech.com