

Speeding - example two

Before

Last year grade six (P6) students used desktop simulations to learn about time and motion. It was fun using rolling balls, ramps and stop watches. It helped provide a concrete context for the learning. However, some students disengaged after the hands-on action stopped and the maths started - and as discovered later, many did not make the transferences to authentic circumstances. A car accident outside the school gate prompted an idea.

After

Motion is related to force, which is related to transport which is related to the local community and to which, of course the students are related. The school was forever warning about the traffic dangers around the school. How could all this come together in a potent authentic learning experience? Perhaps the answer lay in another question. How fast do cars travel outside the school?

The teacher set the task; *find the safest spot to cross the road*, there being no designated crossing. The answer is not easy as it seems. After measuring distance students used to stop-watches to determine the speed of cars that passed from one end of the block to the other - between which the school was located. These were averaged. Next they attempted to measure speeds increasingly within the block. Quickly they discovered that acceleration and deceleration were overriding influences - which are very difficult matters to deal with

They responded to the impasse by exploring scientific techniques that might help. This proved frustrating and fruitless. Without admitting to be uncertain about the correct process, the teacher pronounced that *they* must recruit some help from someone outside the school. Robust discussion followed. Some students felt the police would be the most help.

Another group liked the idea of one student, who said his sister was a physics student at university and her class would help.

Their teacher said there were some important rules:

- The police and the uni students could only show techniques
- They could not do the actual work eg use stopwatches
- They were not to supply equipment.
- Laws and societal expectations had to be taken into account
- Neighbours, bus drivers and other commuters had to be consulted
- Final solutions had to be presented to the principal, showing processes,

- along with data and research
- Recommendations about **how to improve road** safety outside the school had to be made on relevant authorities

Students went on to conduct a **post mortem** on the areas which didn't go as well as hoped.

Post script

The undertaking was judged a success by the school executive and outsiders. It encouraged the executive and other teachers to see the community as a valuable resource for learning. Furthermore the local community was impressed by the school's concern for the community's welfare and the students' enterprise.

The undertaking echoed through the rest of the term. Time and time again the teacher and students came back to the situation as context for learning

Points to note

This is purposeful learning. The students need to learn to achieve task, which they see as having a real *use* and an important one.

It is tempting to approach organisations on the students' behalf. This will rob youngsters of learning opportunity. Also there is evidence that adults respond more positively to students than teachers when seeking assistance. It is your job to ensure they are adequately **rehearsed**.

Once outsiders are recruited you must contact them and brief them before they come into the school. They need to be told that their job is to provide techniques, not answers and especially not to do the work for the students. Caution them that in their enthusiasm to help, they can over influence and rob students of learning opportunities. **Remember a problem solved by someone else is not a lesson learnt.**

In addition the teacher could have admitted that she was lost for answers. Uncertainty is not a weakness; it can be strength and validity. Also the disclosure underlines the principle that we are all learners. Moreover, it creates **camaraderie** amongst learners. And it can win respect. Of course it is counterproductive, if over done.