

SCAFFOLDING LEARNING Through MANAGEMENT PLANS

Have you experienced the student panic evident when a major assignment is due? Although several weeks may have been set aside for the completion of tasks there are always those who never seem to progress far beyond producing fancy headings and colourful borders. Panic sets in as the moment of truth arrives!

Many students seem to have great difficulty determining a clear focus for their work and consequently develop very skilful avoidance strategies. They can appear constantly busy while actually making minimal progress. (Perhaps we can empathise with this as we prepare our work and break yet again for another cup of coffee!)

All too often it appears there is a significant breakdown between what the teacher perceives to be the outcomes for a study, how the student interprets this information, and then further how this is communicated from the student to parents at home.

During the planning stage class teachers identify a clear set of learning outcomes. It is expected these will result from a range of experiences, investigations or research depending upon the particular study topic. Along the way these messages can break down. Students may not understand or may misinterpret instructions. Parents, eager to help, draw upon their previous experience, often from their own school days, and suggest how they think things should be done.

The final outcome can be a resultant waste of time and effort for all with little real learning taking place. The initial goals can easily be lost along the way.

As part of our annual curriculum plan we have students undertake a science investigation leading up to a major exhibition at the school wide "Science Fair" for 11-13 year old students. Teachers require students to undertake a simple scientific investigation thus gaining some understanding and experience with the scientific method. The desired outcomes are that they will be able to set up a simple hypothesis, carry out an investigation, and draw conclusions as a result of their study. Their information would be presented, along with appropriate supporting data at the 'Science Fair.'

Following extensive preparatory work in class with mini-investigations looking at controls and fair tests the students are asked to select their own topic for investigation.

The conversation upon reaching home may go something like this: -

Student: I have to do a project for the Science Fair.

Parent: What are you going to do?

Student: I don't know.

Parent: What did the teacher say?

Student: We could do anything we liked.

Parent: Didn't she give you any ideas?

Child: No.

Parent: What do you want to do?

Student: I don't know.

Parent: I don't know! How come I have to sort it out?

I thought your teacher was supposed to help you! What do you

do all day at school? I shouldn't have to be doing your science for you! That's your teacher's job!

Why don't you do something on the Solar System? You did that last year and there's plenty of information in our encyclopedias. You could get some notes from that.

The result may well be that the student spends many hours once again drawing planets and copying facts about the solar system. No investigation has taken place. No understanding of the scientific method is developed. Little has been learned apart from a few isolated facts.

As a result this parent becomes more and more critical of the school and its perceived lack of support or guidance for students. Teachers become more critical of the *complaining parents* knowing the extent of preparation and lead up activity carried out in class and the detailed instructions given.

I initially became aware of the real nature of this problem when I received one of *those phone calls* Principals get on occasion. Obviously the parent was quite upset. Her understanding was that the teacher had set an assignment, told the student to think of a topic, and very little else. The student was confused and did not know where to begin.

I could understand how the parent would be confused. The perception was that the school had given minimal assistance. Why would the parent think otherwise? We had not given any information that would lead the parent to think differently. There was no indication as to the preparation that had gone on in school prior the assignment being set. The student did not have a clear structure on which to base their investigative research. We expected somehow it would all come together.

Knowing the high quality programme run by the class teacher I decided to investigate a little further before replying to the parent. I found in fact that several hours of preparatory work had been covered in class as a lead up to the assignment. I carefully noted all this down from the teacher's very detailed planning and made contact with the parent. I realised however that some changes were necessary with respect to the way assignments were set.

Were we involving students sufficiently? Did they have a clear understanding of what was required? Were they in a position to take a significant degree of responsibility for their own learning? Did they have a clear idea as to how they were going to proceed? Did they know the objectives for the study and how it was to be assessed? Did we communicate all this adequately to parents?

In an attempt to address these issues we developed what we have called the *Management Plan* to help scaffold students through the process. Students are required to complete a *Management Plan* before undertaking any major study. This is designed to lead them through the processes required to complete a successful investigation or research-based assignment and to develop strategies enabling them to share their results with a wider audience. It gives students a model to follow for their own learning. Once familiar with the sequence they can use the principles for future studies.

Our *Management Plan*, especially tailored for the Science Fair, has been divided into five stages. The first stage has students develop their overall study plan. (*Stage 1-My Plan*). Here they record their topic, their investigative question, their hypothesis, and a statement showing how they are going to go about testing their question. Notes related to materials required are also recorded.

This is the most difficult stage and the one where students require the greatest support. It is support here that ensures the overall learning objectives will be

met. Detailed planning gives each student a clear set of procedures to follow. Parents also are able to see exactly what is required. They can give their child appropriate support.

Once students have their plan approved they are able to independently carry out their investigation. Results are recorded in *Stage 2*. Students are encouraged to think critically about the information gathered, to comment on this and to draw some conclusions. *Stage 2* is designed for recording information in a coherent format prior to presentation taking place.

Following this initial planning, experimenting, and data gathering, each student will have collected a considerable quantity of information. It is at this stage, *Stage 3- My Exhibit*, where they are asked to plan how their information will be presented. They are required to determine how they are going to set out their data to exhibit at the school *Science Fair* and best show the information gathered.

Full planning here ensures the actual assembling of the display itself is a relatively simple and speedy process. Students have gathered and organised all the information needed. They have developed a clear plan showing how they intend displaying their material. They can now quickly get on with the task of putting the final display together with a clear focus for their work. No time is lost! No procrastination! No avoidance strategies!

Since following these procedures we have found significant improvements in learning outcomes for our students. Seldom now do we see the old style *projects* appearing. These often consisted largely of material copied from a book with little or no interpretation or real learning taking place. Now students are able to take a much greater degree of control over their learning. They are so much more involved in the whole process.

Where difficulties arise these are picked up early in the planning process and appropriate steps are taken to give additional assistance as needed. In this way wasted time and effort on everyone's part is avoided. The final results for students are more closely aligned to the initial planning objectives set by the teacher.

An assessment rubric has been designed by our teaching staff. (*Stage 4*) This is shared with students prior to the commencement of the study. Classes have the rubric displayed on their wall to give a clear idea as to what is required for high achievement levels. They can refer to the rubric throughout to ensure they are meeting requirements set for quality work. They can assess their own performance against clearly established guidelines.

The rubric also very clearly shows parents how the final *grade* was determined. The whole process is open. Nothing is hidden.

Students are invited to complete the process through some reflective Journal Writing in *Stage 5*. Here there is an opportunity to reflect on the outcomes of their study and give consideration as to what could be done to make further improvements in the future. It is a chance for them to think deeply about a number of issues. The rubric is used as a guide in classes at this stage to assist with this reflective process.

The concept of the *Management Plan* is one we have been developing for some time. It is used as a planning guide for each major study focus undertaken. The plan illustrated here relates to one particular study. It can easily be tailored to meet requirements for other studies or a more general model can be used. The *Plan* provides an opportunity to record aspects of the processes with which students are involved.

At the completion of each study, *Management Plans* are filed in the student's Portfolio. Here they provide a record of their growing development throughout the year. They also provide information with respect to process as well as product for each topic covered. This is invaluable as teachers gather data for assessment purposes.

The *Plans* also have an important part to play in the three-way teacher / student / parent conferences carried out during the year. They form the basis for discussions on the student's growing development and competence as an independent learner. Where "student-led" conferences are conducted the student has a clear focus for their presentation with an outline of the process they went through, as well as a clear record of their results. There is considerable data available to illustrate the depth of their learning not only from their recordings but also from material gathered for their *exhibition*.

Exhibitions are held for each major study. These usually take place in the classroom rather than as illustrated here on a school wide basis. Where students have been involved in research there is a danger that material will be taken directly from resources used without added interpretation and application required to indicate a true understanding of content investigated. Having students explain their findings to peers, and being prepared to discuss, debate and be questioned on material presented, is a powerful means of ensuring they do understand the topic thoroughly. The presentation could be through speaking to a chart or booklet, through role-play, drama, a video or audio presentation or any other innovative means desired. This creates an ideal opportunity for parents or friends to visit the school to view and hear student's *exhibitions*, helping build closer home-school links.

The teacher's role has become that of the professional coach, able to support,

encourage and guide students through a process. They can focus on desired learning outcomes and work with students requiring individual assistance, allowing them to build on current achievements, while challenging them constantly to move further forward.

Increasingly students are given opportunities to take greater responsibility for their own learning. We can assist them discover that learning is not something *done* to them but is instead a process within which they actively participate. We are providing opportunities that will better assist our students *learn how to learn*. The *Management Plan* provides a structure and a sequence for this to happen.

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