

Improving literacy in the secondary school : An information to knowledge innovation

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In the knowledge age of C21st, literacy knowledge and skills are increasingly necessary. At the late primary and secondary levels, students are required to learn by reading expository text in subject areas such as science, technology or economics. particularly by accessing a range of information sources.

Students who have low literacy skills are less able to learn in this way, to show what they know in written ways and to have their knowledge of a topic 'programmed' in verbal ways. As a result, they are less able to align what they know about a topic with related written text later.

Dealing effectively with low literacy is a challenge for secondary teachers. Many find themselves in a perplexing situation. They know that successful learning in their subject requires students to read and write relevant information but that some have difficulty doing this. Determining students' needs and entry level knowledge are difficult. Low literacy often become tangled with emotional, engagement and motivational problems. Consequently, minimise the need to read in their subject.

Over the last four years I have worked with secondary teachers to develop an approach to literacy improvement that targets these problems. The work involved identifying and researching a set of explicit literacy teaching procedures that teachers in all subject areas could use to enhance students' literacy knowledge. The procedures needed meet a number of criteria: to

- improve students' comprehension of written text in particular topics,
- be easily included in regular whole class teaching.
- teach the content targeted in each lesson.
- help students use additional reading comprehension strategies, initially when directed and then independently and spontaneously as the need arose.

The school context for the innovation The project was implemented in several secondary schools in metropolitan Melbourne. Statewide assessment indicated that these schools had comparatively low levels of literacy and low levels of successful completion of secondary education. The families of the students were highly likely to receive educational assistance. Students transferred frequently between schools.

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School climates were characterized by comparatively high levels of student disengagement, high student absence rates and a comparatively low level of community valuing of education. Both teachers' morale and their academic expectations of the students were frequently low.

Background to the innovation While teachers in the schools recognised the problems of poor literacy and student dis-engagement, many did not see it as their teaching responsibility. Others did not know how to teach their students to be more literate. Teachers of science, history, physical education or art had not been trained to do this and did not know where to start. Demands that they improve their students' literacy simply increased the teachers' perceived lack of skill in the area and their frustration.

Students' beliefs about the school experience, as well, restricted effective learning. Many believed that what they learnt at school had little relevance to them now or in their future. They saw that what they knew was not valued by the teaching and that their teachers did not expect them to be successful academically.

Many students could use comparatively low level literacy activities when instructed; they did not have literacy learning disabilities. They could read words aloud and could comprehend some text at a literal level. They were less likely, however, to use their literacy skills in a knowledge enhancing way, to engage in focused research and to read spontaneously in a self-initiated task oriented way in order to learn new ideas.

As well, they showed specific literacy difficulties, for example, saying in their own words a text they had read, dealing with the high density of concepts in factual texts, linking the text with what they knew, selecting the key ideas in a text and organising its information.

The innovation.

The innovation was intended to equip teachers to understand how literacy affects student learning in the subject areas and to teach both subject area knowledge and literacy skills simultaneously. It involved several related components: helping teachers learn

- (1) that literacy in their subject area was their responsibility (their attitude or commitment to literacy enhancement);
- (2) precisely what aspects of student knowledge they needed to improve;
- (3) how they could improve this (the teaching tools they could use);
- (4) that student literacy skills in the subject could be monitored;
- (5) that they, as subject teachers, could learn the necessary knowledge in systematic, consistent ways and
- (6) that their schools had in place achievable, explicit goals in literacy, concrete, workable plans and pathways, appropriate professional learning opportunities that recognised the learning contexts in each school.

All faculties were encouraged to see that teaching literacy was their responsibility. This awareness was developed gradually, through pragmatic discussion typified as follows. Any subject that required students to read or write was assuming a knowledge of literacy. Each subject had its own vocabulary, ways of writing, etc. Students learn best the key words and ways of writing in science, woodwork or music in these subject areas. This discussion usually led staff to agree that students would learn the literacy of their subjects by reading and writing texts in their subject.

A necessary condition for learning literacy in any subject is that the students read and write text in that area. Staff generally recognised this. The innovation involved students engaging in literacy activities for at least 15 minutes of lesson time for each one hour of teaching. This required teachers to use written texts for student reading and learning.

The innovation assisted all faculties to develop or select relevant text. Teachers of practically oriented subjects such as physical education or technology initially saw this as a barrier; they didn't use written text in their teaching. They were assisted to include written texts as natural parts of their teaching. Some physical education and woodwork teachers, for example, found it useful to begin every third lesson with a literacy activity that reviewed what the students had learnt during the previous two lessons.

The innovation involved teachers in all subject areas using seven literacy teaching procedures (LTPs). These procedures told students how to act systematically on text when they were reading. They were the 'tools' the teachers learnt to include gradually in their teaching. Research had shown that they assist text comprehension in any area. The LTPs suggested that teachers instruct students to

- get their existing knowledge of a topic ready for learning and for literacy activities. Students recalled relevant verbal, imagery, experiential and action knowledge of a topic and recoded this to a verbal linguistic form ready for literacy activities. They could see that what they knew was valued.
- study between five and ten key relevant words or phrases that were the building blocks of the knowledge to be learnt. Students (1) said accurately each concept, (2) read and spelt it, (3) suggested synonyms and antonyms for it, (4) clarified its meaning and linked it with other concepts.
- read aloud short portions of relevant text.
- visualise and / or paraphrase (or say in their own words) each sentence in the text.
- say questions that each sentence in the text answers.
- summarise the text read, usually paragraph by paragraph.

- predict or anticipate ideas in the text, ‘read between the lines’, infer ideas.
- review, consolidate and show comprehension of what has been learnt by reading silently a written summary of the content covered.

Earlier studies have reported the effectiveness of teaching these strategies, either alone or as part of a sequence.

The LTPs are implemented in different ways, depending on factors such as the subject, the purpose of the lesson and students' existing knowledge. They help readers comprehend text in simpler ways initially and then in more complex ways and remind them how to store what they have learnt in memory so that they can use it for learning later.

Implementing the innovation Implementation of the innovation required each school community to learn how to teach literacy more effectively. As noted earlier, it was important that each school have explicit, supportive pathways for professional learning, achievable goals and means for valuing and respecting staff know

Levels of learning to support the innovation To achieve this, learning was needed at a number of levels in each school

- (1) individual teachers needed to implement the innovative teaching that improved students’ literacy knowledge.
- (2) to assist them to acquire the new knowledge, individual teachers worked in professional learning teams in each subject area. Each team was led by a 'leader of literacy learning' or ‘LLL’, a member of the subject area or faculty trained specifically to lead improved literacy teaching in the subject area.

Each subject area developed its vision and action plan for literacy enhancement, indicators for monitoring literacy progress and procedures for collating the literacy pedagogy knowledge acquired by members of the faculty. Staff trialed components of the LTPs.

- (3) the school leadership team developed a global school community level literacy vision that it unpacked with each faculty and a school level action plan with indicators of learning success. It (1) reviewed its processes and the opportunities it provided for staff learning, (2) evaluated whole school literacy learning in terms of its policy and (3) related this to significant community bodies. The leaders of literacy learning formed a panel to operationalise and co-ordinate the school-wide literacy improvement activities.

Professional development to support the innovation Activities that promoted professional growth at each of the levels noted earlier was implemented. At the individual teacher level, teaching staff, usually working in faculty-based teams

- (1) identified current problems in student literacy learning as a reason for change.
- (2) identified and collated what they knew about literacy at the secondary level.
- (3) explicated their beliefs about literacy learning. They worked through literacy activities and identified what they needed to do (key literacy actions) to learn by reading and writing.
- (4) described student learning problems in terms of these actions and identified what they needed to know about literacy learning and teaching.
- (5) evaluated the LTPs as possibilities for improving literacy in their subject areas and for dealing with student learning problems.
- (6) contextualised the LTPs in their subjects and reflected on how they would change their teaching. They applied the LTPs to topics they would teach, identified possible student activities and ways of fine-tuning their teaching.
- (7) saw the LTPs demonstrated and modelled in their classes. Lesson plans that showed the LTPs operationalised in familiar content were written for them.
- (8) trialed, implemented and evaluated aspects of the LTPs in their classes. They were coached individually during implementation.
- (9) reported the outcomes to their faculty and to the school (often at staff meetings) in a range of ways (for example, posters, video, Power point) that showed how the procedure trialed influenced student achievement, engagement and interest, literacy knowledge and their attitudes to the topic and subject.
- (10) identified how the successful LTPs could improve their regular teaching practice and the code of teaching practice for both the faculty and the school. Some of the schools included prototype literacy activities in each subject on the school's intranet and ran workshops to teach staff to develop literacy learning activities.
- (11) planned directions for the next phase of literacy enhancement at the faculty and whole school levels.

On-going professional development of the leaders of literacy learning or 'LsLL' was a critical aspect of the implementation. This role interfaces classroom literacy teaching and the school leadership. LsLL led many of the above activities. Their professional preparation included

- (1) an in-depth study of literacy learning at the secondary level, individual differences in literacy performance and innovative literacy teaching procedures. They needed sufficient knowledge to make relevant decisions, guide and scaffold the literacy knowledge of the team, map it into teaching practice and to suggest possible problem solving teaching activities.

- (2) an understanding of the instructional leadership procedures necessary to foster constructive dialogue about improved literacy teaching.
- (3) skills to foster specific teaching or procedural improvement; they learnt modelling and coaching techniques for use in classrooms.
- (4) skills to guide professional action learning; understanding how teams learn, the conditions for group learning, guiding relevant action research.
- (5) skills to lead a professional learning team; leading the team to frame literacy learning goals, develop an enhancement action plan, monitor student and staff progress and implement data collection.

On-going professional development of the schools' leadership teams was also necessary. This included assistance to achieve the outcomes mentioned earlier.

One aspect of this preparation for each school was the development of a code of teaching practice that characterised and underpinned the school's core pedagogic practice. This code operated both at policy and at implementation levels and specified what students, staff and the community could expect of the core work of the school. The literacy enhancement strategy was a key aspect of the code in each school.

How the innovation has worked out in practice This issue is examined in two parts: change in teacher behaviour and links with student outcomes

Change in teacher behaviour Teacher use of the LTPs was monitored in several ways: (1) contributions to the literacy knowledge of their faculty; (2) what their lesson plans and teaching portfolios indicated about their use; (3) self reports of the frequency with which teachers used each LTP; (4) the frequency of actual use in lessons, monitored by observation of lessons.

The measures provided indicators of progress and indicated where the innovation needed to be modified. They showed that teachers increasingly used the LTPs. The self reports and monitoring the frequency of actual use indicated how they were used at each year level in each faculty. Teachers generally found it easier to use teaching procedures that helped students to get knowledge ready for learning, to study the key words and to read aloud text. They found it harder to teach students to summarise text or to review and consolidate what they had learnt. Subsequent professional development focused on the latter procedures. One school, for example, implemented a student 'knowledge book', in which, at the end of each lesson, students recorded the ideas they had learnt during the lesson and the questions they could now answer.

Across the schools, faculties differed in their application. Each faculty reviewed how it implemented the procedures and modified its focus.

The frequency of teaching the LTPs generally decreased with increase in year level to Year 10. Some teachers believed that the more senior students were using them spontaneously. Surveys asking students to self report their use of reading comprehending strategies indicated that this expectation was not justified. Again faculties could use the data to modify their teaching of the procedures.

More generally, teachers generally reported that the LTPs provided a framework for organising and structuring the content they were teaching and the ways in which they used their teaching time. The LTPs also helped the teachers to track students' change in knowledge.

Link between the innovation and student outcomes. Changes in students' literacy performance across the schools for Years 7 to 10 students was monitored using the Tests of Reading Comprehension (ACER, 1987). At all year levels reading comprehension improved ($p < .05$). The students who made the highest gains were those who were initially the less able readers at all year levels.

The extent of comprehension improvement in particular classes was related the frequency with which the teachers responsible for the class both cued the students to use them, the range of LTPs taught and the extent to which teachers increased student awareness of the procedures as actions the students could use.

Conclusion

The innovation described here was important for the schools involved. Enduring low student literacy meant poor long term academic expectations and outcomes, reduced student focus on learning and difficult teaching contexts. Improving student literacy for many teachers had seemed difficult to do in consistent, systematic ways. Staff in the schools had had little experience engaging in collaborative professional learning to improve the learning-teaching conditions in mutually supportive ways.

The literacy innovation provided teachers with specific, tangible literacy teaching procedures. These procedures allowed them to learn more about literacy education in the context of their subject area.

The literacy innovation is continuing. As learners in any learning community, the teachers are spread along a continuum of knowledge. However, in each school they now feel more of a community in terms of literacy teaching. Every teacher has the goal of helping their students learn optimally. They see that what they know is valued by colleagues and can potentially contribute to the code of teaching practice for their faculty and the school and that their learning can enhance student engagement and learning.

Follow-up information ? All aspects of this innovation have been described in much greater detail in earlier papers. These include (1) more detailed descriptions of the LPDs and activities ; (2) lesson plans showing the LTPs; (3) the professional development activities used for classroom teachers and for training LsLL; (4) research papers reporting the literacy enhancement studies and (5) papers describing the processes involved in establishing schools as active learning communities. Schools and teachers in any aspect of the innovation can contact Dr Munro. His address is : Head of Centre for Exceptional Learning and Gifted Education, Faculty of Education, The University of Melbourne, Vic. 3010, Australia
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