# Evidence Based Teaching and Curriculum Shifts

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It is clear that specialists and specialist teachers can have an effect on changing the curriculum. The curriculum *is* changing, and the students *are* learning. The teachers in mainstream classes perhaps need more assistance in professional development than their counterparts in specialist and special developmental schools, and this assistance would be received positively in most of the schools.

Most teachers are aware of the broad developmental level of their students, and have additional information about their discrete skills and abilities. Synthesis of information about the students' levels of development and their discrete skills, and assistance for teachers to use developmental progressions and described developmental scales can provide important pieces of data to guide teachers' knowledge and understanding about ways to support the learning of every student. Change to the curriculum involves, at a minimum, three approaches, as illustrated in Figure 1. In the ***education*** programme, there is a need to change the teaching and learning strategies, the assessment and reporting procedures and the curriculum and resources. If these are not changed, the chance of introducing sustainable improvements in the classroom is minimised. In the SWANS (Students with Additional Needs) programme, emphases are placed on teaching and learning and on curriculum and resources. There needs also to be a shift in the assessment and reporting procedures, but perhaps this applies to the entire education system. Regardless, reporting of student development must emphasise proficiency rather than discrete skills or test scores. Then, once the change in reporting is achieved, the five step procedure outlined in Figure 2 can be implemented.
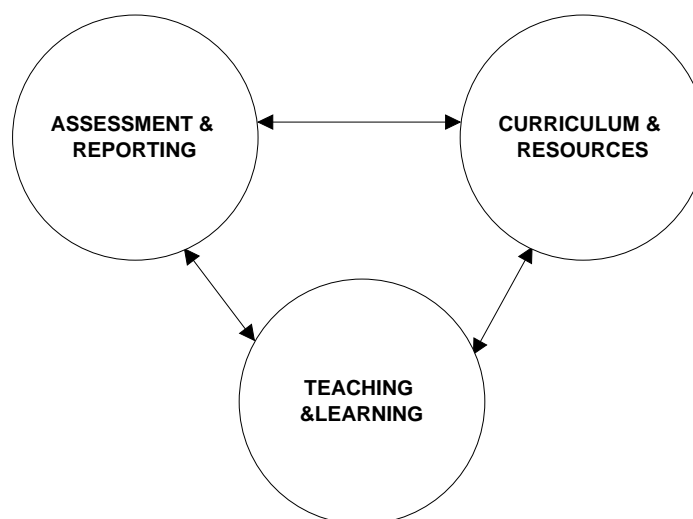


*Figure 1*. Approaches to curriculum change.

Attempts to reform the curriculum have been littered with failures. New curriculum documents can contain the best of information and a major shift in thinking about learning and development, but the shift is difficult to achieve in the schools and classrooms. This is especially true when the shift is from a process or content approach to teaching and learning, to an outcomes approach. In Victoria, this has been largely successful over the past decade and the contributions of assessment and resources need to be acknowledged. However, the emphasis of teaching and assessment has been upon scores and letter grades. Unless the curriculum change is accompanied by an assessment and reporting change that demands that skill levels and outcomes are reported, teachers will interpret the change in idiosyncratic and unintended ways. Reporting grades and scores simply emphasises the importance of grades and scores. By contrast, reporting skills and developmental levels emphasises that skills are what really matters, not just a grade or score, and encourages teachers to focus on generalised developmental learning for their students. However, unless a change in assessment and reporting procedure is also accompanied with help for teachers to change teaching and learning strategies, emphasis on the reporting of skills and development and changes in curriculum towards an emphasis upon outcomes and developmental learning will not and cannot be fully realised.

Thus, a shift towards developmental learning outcomes involves both a change in thinking about curriculum and developmental learning and a method for implementing change across multiple levels of development. There are five steps involved, as shown in Figure 2. The first step is measurement using any form of assessment. Measurement addresses and monitors what a student needs to learn. In most cases, this does not and should not differ across students. Identifying necessary skills and knowledge is an important aspect of developmental learning. It is not always possible, and certainly not necessary to identify everything that all students need to learn, but a systematic sample of these skills and knowledge is essential. In this project, the teachers will be provided with a rigorous set of rubrics for a set of observational domains.

We are not identifying everything all students need to learn, and so we need to be careful not to list the discrete skills assessed as a definitive catalogue of mandatory achievements that must all be demonstrated. It is important to understand that the discrete skills and knowledge that we acquire are not isolated, discrete entities. They are best learned when they are conceptualised and introduced as sets of cohesive and interrelated skills, attitudes and knowledge. Then cohesion can aid in development and reinforcement. The observable skills and knowledge that are assessed are pointers to the underpinning generalised learning that is needed to act as the glue for the cohesion of the discrete skills. The more generalised learning we have, the better we are able to perform or demonstrate the discrete skills. The more and the better we can demonstrate the discrete skills, the more of the generalised learning can be inferred. Thus, we need to document the discrete skills that are observable and find a way to blend them into a cohesive skill set so that strategic planning can be undertaken for teaching and learning. It is from the identification of the extent and quality of the performance of the discrete skills that we can infer the generalised development, and this is the role of ***measurement***.
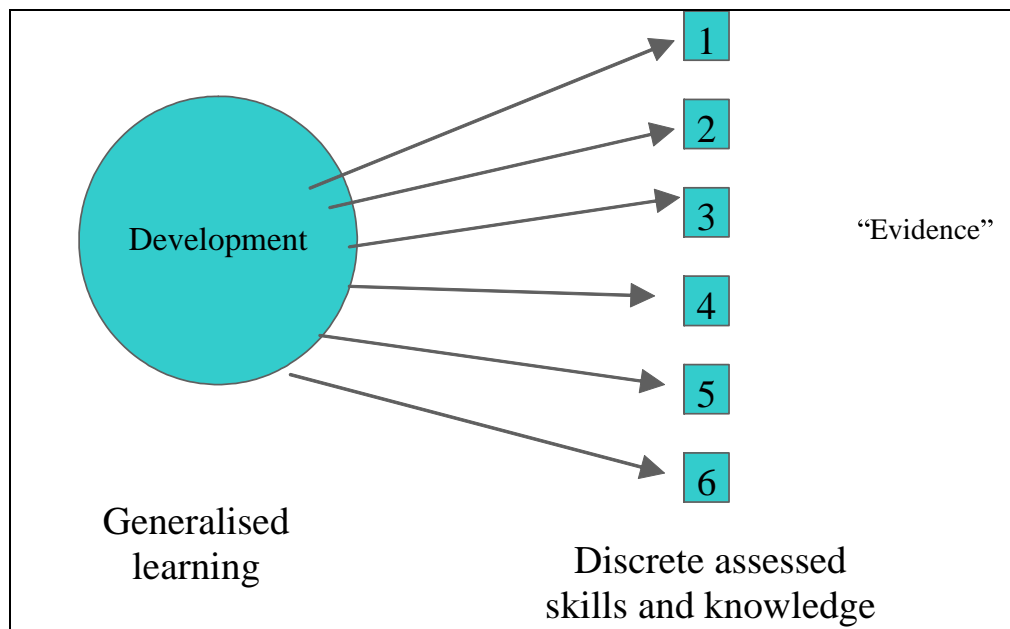
*Figure 2:* Identifying the generalised learning and underpinning development

From measurement, it is important to identify the generalised level and not simply a score or a list of deficit skills. This means that the teacher can identify a zone of proximal development (in Vygotsky's terms) for each student, the high achievers as well as the lower achievers. This is the identification of the 'ZPD' in the domain of learning that the assessment addressed.

Observations that students may be working at different levels on an overall developmental progression more than likely mean there is a need for different teaching strategies. If this is not recognised, teachers can fall into the traps of teaching to the test or teaching to the middle of the class. If the teacher teaches to the 'test', each test item represents a specific skill. Incorrect or unsuccessful demonstrations of skills on a checklist can also be listed as a deficit model and then practice sessions used to help students answer similar test questions of checklist items. This strategy might improve the score of a student on a test and it might show some rote learning for additional skills on the list, but it does not necessarily improve ability or generalised development. (For example, coaching for an intelligence test may improve the IQ score, but not the person's intelligence).

Developmental learning demands that an underlying and cohesive generalised pathway is identified. Of course every student is different and no one follows a generalised pattern exactly, but it is possible to identify the typical *generalised* developmental path. This gives the teacher a framework within which to work but it never ever replaces the judgment of the teacher about where to start, how to proceed or how to teach. Rather, it becomes the framework within which teaching decisions can be made. It is better if levels, as described in the three theories paper (Griffin, 2007) are identified as well. This is the generalisation phase.
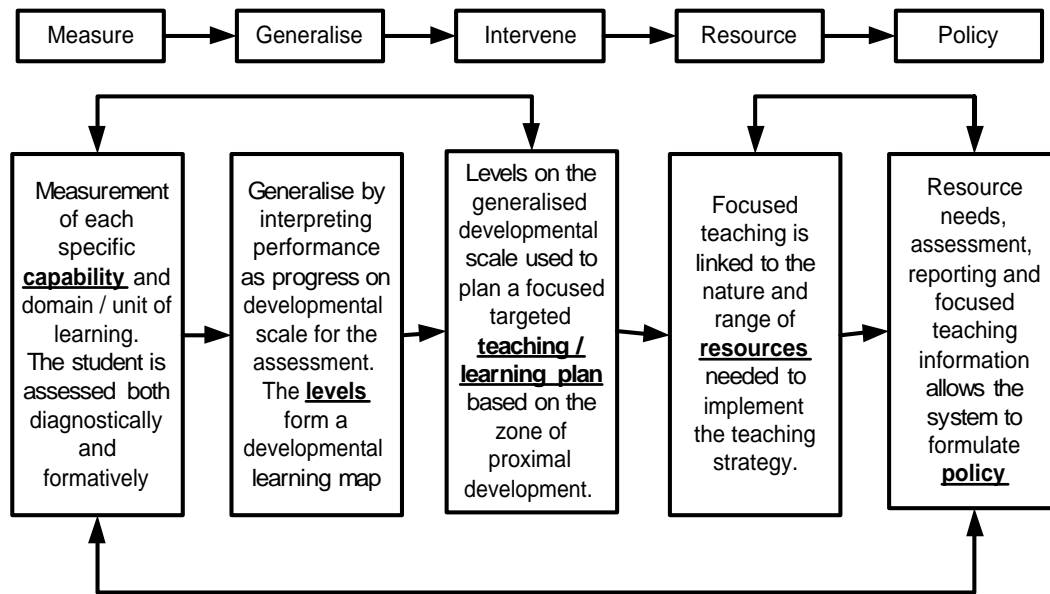
This procedure represents changes in curriculum. If a child's level of proficiency is known by the teacher, it makes little sense to teach the child at another level, to target teaching to the average level of the class. If teaching intervention is focused at the level of students' learning readiness, then the SWANS programme and associated resources can be matched to readiness to learn. The specialist teacher and advisors

play an important role in this strategy. The provision of resources and demonstrations of how to use resources and materials need to be targeted to the developmental level of students. Different interventions, even with the same materials, will be needed for children with different learning styles and different levels of proficiency. If this is not recognised, the overall average achievement of students may rise but this will be because of more able students developing over time and through maturation. Less able students will continue to lag behind. There are many indications and much anecdotal evidence that this is what is happening in many schools and especially in the mainstream classes. The more able students are confident to approach the teacher and are actively benefiting from interaction with the teacher. The less able students are not able to take similar advantage of educational opportunities afforded to them.

Once a generalised level of development in a skill domain is approximated for a particular student, the teacher's decision-making changes from WHAT the student needs to learn to HOW the student can best learn at that level of development and within their ZPD. This then involves the teacher in making decisions about the teaching *strategy* that is best for that student at that generalised level of development or *readiness to learn*. When confronted by a range of students at differing levels of development and with differing learning needs and styles, the teacher is likely to be confronted with a need to use a range of teaching strategies even with small groups of students. Deciding on teaching and intervention strategies is then informed by the measurement and generalisation stage as well as the characteristics of the pupils, their learning styles, learning needs and readiness to learn.

Because there will inevitably be a range of intervention strategies, just as there are a range of students at different levels of development and with different learning needs, it is also necessary to consider the resources needed by the teacher attempting to target instructional strategies. Different interventions need different *resources* and the resources need to be identified, acquired, used and evaluated. It may be that the same resource can be used for different levels of development; it may be that the same level of development and the same skill acquisition needs different resources for different students with different learning needs. Matching resources to the students' learning readiness and styles is a complex professional skill that the teacher has to develop and one which needs considerable training in classroom management and resource use. These are the professional decisions of the teacher when faced with a range of students with differing developmental needs, differing learning styles and sometimes limited or mismatched resources.

It does mean, however, that once these professional decisions are made, there is an obligation to identify and to obtain the appropriate resources, implement them and evaluate the effectiveness of their use. This involves *policy* decisions at the class, school and system levels. As information emerges and is understood about what works for each of these steps, resourcing decisions at each level involve an understanding of the role of time, personnel, materials and space allocation to the appropriate intervention. These can be expected to lead to higher levels of generalised learning because of the acquisition of an increasing range of discrete skills that themselves belong to a cohesive set, which in turn defines the generalised levels of developmental learning. These steps can be seen in Figure 3.

| Measure | → | Generalise | → | Intervene | → | Resource | → | Policy |

| Measurement of each specific **capability** and domain / unit of learning. The student is assessed both diagnostically and formatively | Generalise by interpreting performance as progress on developmental scale for the assessment. The **levels** form a developmental learning map | Levels on the generalised developmental scale used to plan a focused targeted **teaching / learning plan** based on the zone of proximal development. | Focused teaching is linked to the nature and range of **resources** needed to implement the teaching strategy. | Resource needs, assessment, reporting and focused teaching information allows the system to formulate **policy** |

*Figure 3.* A model of change from measurement to policy.

Most assessment programs stop at the first step – measurement - and report in terms of scores. The zone of intervention is rarely identified, and subsequent teaching tends to focus on what the students cannot do in a deficit model; resources are not matched appropriately and critics of testing programs charge that testing does not improve learning. Why would we expect it to, when we ignore the information that tests or other forms of assessments can provide? If resources are needed at different levels and for different strategies then a method of identifying these resources and, more importantly, policy decisions can be based on learning with measurement as the genesis of the policy development.