Integrated Curriculum:
Designing Curriculum in the Immersion Classroom[*]

Helen Warnod, Bilingual Program Coordinator, Camberwell Primary School, Camberwell, Victoria

Using an integrated curriculum approach in Primary Immersion programs responds to such questions as: Why integrate curriculum? How can curriculum be best designed to cater for all learners? Is there enough time? Can we extend the range of language learning experiences by differentiating curriculum? How can we widen opportunities for learning when teaching and learning content in a second language (L2)? How proficient in L2 do children need to be?

Many more questions have been considered in the context of Camberwell Primary School where children's initial L2 acquisition is based largely on learning in the mathematics content area. Comparison of vocabulary/language acquisition and concepts in the first levels of the Languages Other Than English (LOTE) and the Mathematics documents in the Victorian Curriculum and Standards Frameworks (CSF) show a remarkable similarity. This adequately supports "...designing a language teaching/learning syllabus is to match what is being taught in the form of concepts and structures with the cognitive and linguistic readiness, needs and interests of the students." (Rado, 1991). But is it enough to deal in one or two Key Learning Areas (KLAs)?

Integrating Curriculum

Theorists "… argue that skills, values and understandings are best taught and assessed within meaningful, 'connected' contexts."(Murdoch, 1998). If we consider broadening the KLAs such as Mathematics, Studies of Society & Environment, Arts, Science, Technology, Health and Physical Education we use to deliver curriculum, we need to ensure that outcomes can be achieved through the delivery of a 'big picture idea' topic, rich in concepts which will provide many opportunities for 'life experiences.'

Designing curriculum in this way can provide opportunities for students to see or identify 'big picture' ideas in an overcrowded curriculum by transferring knowledge across curriculum areas. Students can then achieve outcomes in meaningful contexts and reflect between their learning and aspects of the real world. Different learning styles and divergent thinking can be catered for whilst encouraging students to control their own learning through group or independent activities and tasks. But, one asks, is this curriculum design really conducive to L2 learning?

Planning to Integrate

Student learning acquired through integrating curriculum can also be enhanced by structuring learning experiences into a framework. By including the learning objectives of Bloom's Taxonomy into this framework both teachers and students become more aware and develop better understandings of the cognitive level and effort required to achieve specifics tasks. The framework or matrix then can include Gardner's Multiple

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Intelligences, which foster an understanding by both teachers and students of their own strengths and weaknesses in different learning styles, promoting metacognition. Integrating Bloom's Taxonomy and Gardner's Multiple Intelligences into the organizational framework of curriculum can then be further supported by second language learning strategies and mnemonic techniques.

An integrated approach requires quite a deal of reflection and research. There are considerations, such as the teaching/learning context, language learning strategies, time immersed in the L2, responsibility for students' acquisition of concepts in the KLA and certainly providing tangible, positive experiences for students.

Bloom's Taxonomy of Learning Objectives

Many of O'Malley and Chamot's (1990) metacognitive and cognitive strategies such as evaluating a task and summarising information can be addressed using Bloom's Taxonomy of Learning Objectives. Bloom developed six terms to describe levels of cognition. Bloom's Taxonomy may be used to plan tasks on a particular topic to cover a broad range of cognitive levels found within a normal classroom. Below is a table listing each level with a short description, a list of certain processes by which each level may be achieved, and suggested student products.

LEVELS	PROCESSES	PRODUCTS
Knowledge Rote memory, learning facts	List, tell, describe, draw, timeline	Lists, description, fact sheet
Comprehension Understand or interpret information, make use of the idea in a similar situation	Rewrite, summarize, explain, discuss	Essay, diagram, drawing
Application Use ideas, concepts etc. in a new situation	Dramatise, demonstrate, translate, calculate	Models, role plays, map, journal,
Analysis Breaking down the big picture into its components, examining components closely for better understanding	Analyse, examine, compare/contrast, group, survey, classify	Survey, graphs, interviews, book review
Synthesis Bringing together parts to create a whole, original thought or original product	Rearrange, invent, predict, improve, combine, plan	Invention, story, song, play, poem
Evaluation Judge against criteria or develop/apply standards	Judge, evaluate, debate, recommend, prove, criticise	Conclusion, summary, report, jury, review, evaluation form

***Figure 1:** Bloom's Taxonomy (Coil, 1996)*

Multiple Intelligences

The use of Bloom's Taxonomy in planning can promote the cognitive processes of the student whilst addressing certain learning strategies, but learning styles also need to be considered. Gardner's Theory of Multiple Intelligences used in conjunction with Bloom's Taxonomy can provide for all learning styles. Gardner (summarized in Coil, 1996) identified the following seven main intelligences.

Bloom's Taxonomy of Learning Objectives originally appeared in C. Coil (1996), Tools for Teaching and Learning in the Integrated Classroom *and is reprinted here with permission from Hawker Brownlow Education*

Language-Related Intelligences:
- a person with Verbal/Linguistic intelligence can use language to communicate effectively and persuasively, to solve problems, to memorise, entertain and to acquire knowledge, and

- a person with Musical/Rhythmic intelligence can perceive, communicate, understand and express emotion through music (rhythm, pitch or melody).

Object-Related Intelligences:
- a person with Logical/Mathematical intelligence can use numbers with facility; is able to recognise patterns, categories and relationships and explore them in a logical or sequential way, and

- a person with Visual/Spatial intelligence can perceive, create and change visual objects mentally; can navigate or orientate well in an environment.

Personal-Related Intelligences:
- a person with Intrapersonal intelligence knows and understands one's hopes, emotions, strengths and weaknesses; possesses a capacity to self discipline, and

- a person with Interpersonal intelligence can sense feelings, intentions and moods in others, build relationships with ease and is a good team member.

Body/Kinesthetic Intelligence:
- A person with Kinesthetic Intelligence can use mind and body to perform physical tasks showing coordination, speed and flexibility.

Technological Intelligence:
This area is not one of Gardner's intelligences, but I feel should now be considered when planning an integrated curriculum catering for all learners.
- A person with Technological Intelligence can think logically and laterally when using computers and related technologies, can solve problems, and can navigate in an abstract environment.

Putting It All Together

Once all of the aforementioned areas have been considered, we can design a comprehensive integrated curriculum unit of work using Bloom's Taxonomy and Gardner's Multi-intelligences by combining them into a matrix.

Setting Standards
Prior to designing this kind of matrix care needs to be taken with classroom management and preparing students as independent thinkers/learners when working both in groups and on independent tasks. The use of this matrix can create very exciting content learning and language learning opportunities but standards need to be set before commencing. Students need to be aware of
- required standards of oral and written presentation,

- certain tasks that will be completed as a class activity and will most likely be a teacher-directed lesson (opportunities for teacher assessment),

- the requirement to choose both independent and group tasks and activities,

Figure 2: Integrated Unit Matrix: Minibeasts (Year 3)

	A Word	B Logic & Math	C Space & Vision	D Body	E Music	F People	G Self
1 Knowledge	Make a list of 15 mbs. Illustrate 4 different types. ■	List 20 mbs then group them in as many ways possible. Eg habitat, body covering. ☺	Que suis-je? Select a mb and write down 5 facts about it in French, then read to the class. f→	In groups of 3-4, rehearse and perform a short story about a mb. ☺→	List all the songs that have a mb in them. Rehearse and perform one song. ■☺→	Help collect cartoons and pictures for a class book featuring a mb. ◆	On the 5 points of a star, write or draw either 2 skin patterns of a mb you like or a mb you like to be. ■
2 Comprehension	Make up a word search or a crossword using names of mbs and words to describe their movements. ■	Why are mice seen to be pests when they look cute and are often in films & books? Write 10 lines. ■	Draw the life cycle of a mb and label each stage. ■	In groups of 2, create a sequence of movements to show how 4 mbs move. ☺→	With a partner, make an audio tape of different sounds of 8 mbs. Play guess the sounds with 2 friends. ☺→	In groups 2-4, create a banner with one clear, strong message about one endangered mb. ☺→	On a cardboard cube, select 6 mbs who share a similar characteristic. Draw & label them. ■
3 Application	Report on 10 facts, in French about one mb and illustrate your report. f■	Collect &/or draw 15 mbs. Cut out, paste and label into 3 categories eg fur, feathers, skins. ■	Make a mb with cardboard, boxes, string etc. Clearly label body parts in French. f■	Make a mobile out of clay, plasticene or playdough. Label in French. f■	In groups of 2-4 think of and vocally make the different sounds of 8 mbs ☺→	Rehearse and prepare your biography for a grade performance. ☺→	Write or draw a wild dream about a mb that you would like to own or a mb you would like to see kept in its natural habitat. ■
4 Analysis	Write a days account in the life of a mb. ■	Create a survey with 5 questions and record the results of 5 children. ☺	Draw an aerial (bird's eye) view of a mb in its natural habitat. ■	In a group, mime 4 different ways mbs defend themselves. ☺→	Develop a 1 minute performance in a group of 4 by imagining the sights & sounds in a mb environment. Use your voices as instruments. ☺→	Find an author who has mbs as characters in their story. Write a 10 line biography about the author, e.g Graeme Base who wrote Animalia ■	Write/memorise a poem about a mb and perform it. ☺
5 Synthesis	Write a cartoon about a mb in French. f■	Predict what a zoo for mb will be like in 2020. Draw, make or write your answer. ■	Design and make a mb hat or mask and write in French a message about the mb that will attract attention. f■	In groups of 3, make up a 2 min. dance where you become a different mb when a magician points at you. ☺→	Write, rehearse and perform a rap song about any mb. ■☺→	In groups of 3, plan & record you ideas for an advertising campaign to encourage people to sponsor a mb. ☺	Make a business card for yourself in French which mentions the area of expertise you have about mbs. f■
6 Evaluation	Write & present 4 points why dangerous mbs should not be destroyed. f■	Write 3 reasons why mbs should or shouldn't be put in a zoo for display. ■	In groups of 3, find pictures of famous art works with mbs and list them in your order of most to least favourite. Report to the grade. ☺→	Choose 10 mbs, rank them in order from 1-10 by 1. How graceful they are 2. How easily you can mime their movements and 3. How easily you can mime their shape. ☺	In groups of 2-4, discuss then rank mbs by 1. how quietly to how loudly they move 2. how loudly they call out 3. how musically appealing they sound. ☺→	In groups of 4, find & record as many ways as possible, a solution to the following problem. Your parents say you cant have a mb as a pet, because you live in a small flat. ☺	On the Web of feeling sheet, write minibeast in the middle; different mbs names in the next ring & words that best describe your feeling about each mb in the outer ring. ■

KEY:

mbs – minibeast   f – French   ◆ – class task   ■ – individual work   ☺ – group work   → – performance

- the possibility of longer periods of time for one-to-one interaction with the classroom teacher,

- where to access information and support materials,

- areas designated for different activities, and,

- the need to complete a contract for each task listing the task, materials required, a clear outline of the procedure for the task and an estimate of the time the task will take to complete. This contract is to be negotiated with the teacher before commencing work and is to contain an evaluation of the task upon its completion.

Developing a Matrix

Figure 2 presents a sample integrated unit matrix. This unit of work on Minibeasts was devised for a Grade 2 or 3 level. Students define Minibeast at the beginning of the unit. Often the classification is any beast smaller than a mouse. Certain blocks of time are required for classes to work specifically on the matrix for the Integrated unit, although understanding should also be integrated throughout all other classes such as English and Mathematics. Technology is also integrated and permeates throughout the unit rather than becoming specific tasks. For example students may choose to publish a task such as G3 'Write or draw a wild dream about a Minibeast' and present the completed task as a PowerPoint slideshow with sound and movies filmed in class.
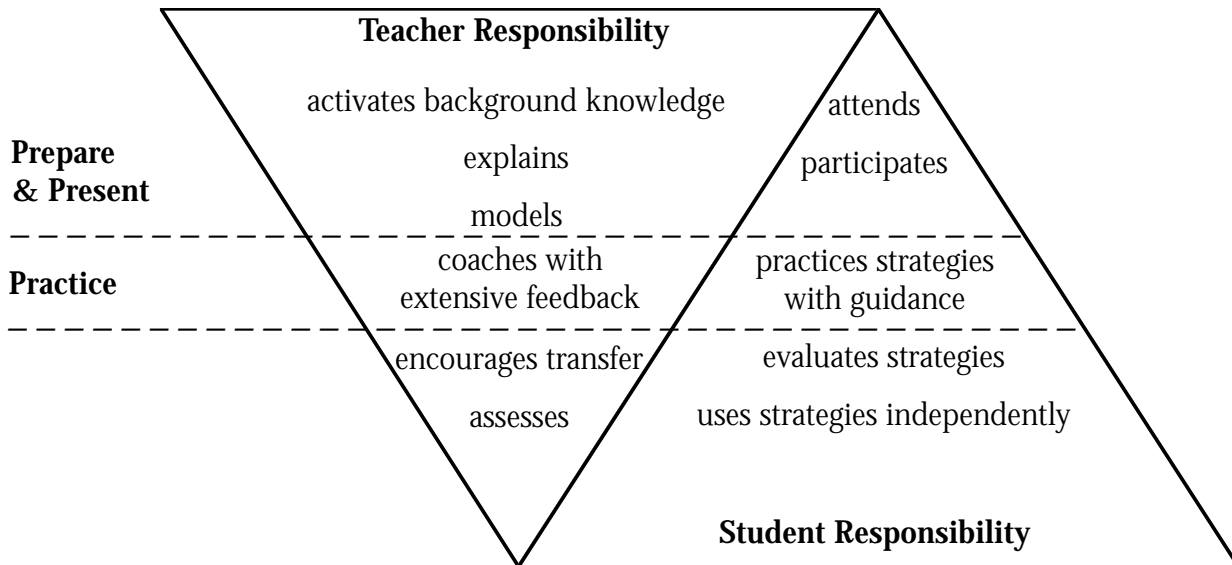
Other Considerations

Language Learning Strategies

Whilst planning an integrated approach it is important to be mindful of language learning strategies. Learning strategies for L2 acquisition may be divided into three main areas: metacognitive, cognitive and social/affective. These three areas are important and are similar to the three important areas of integrated unit organisation: thinking and reflecting, researching and producing the finished product, and working in groups and interacting within the structure of a classroom. "…metacognitive strategies for planning, monitoring and evaluating a learning task; cognitive strategies for elaboration, grouping, inferencing and summarising the information to be understood and learned; and social/affective strategies for questioning, cooperating, and self-talk to assist in the learning process." (Chamot, et al, 1996). These learning strategies directly affect L2 learning but processes, such as providing opportunities for practice, and production tricks (Ruben, 1981), such as mnemonics, must also be considered. These strategies will be further elaborated when I discuss maximising learning.

Teacher/Student Responsibility

The focus throughout the unit of work should be on the students understanding themselves as learners. Students should be encouraged to reflect on and to discuss their success and non-success in task completion through their evaluations at the end of the contracts and be encouraged to develop a growing awareness of themselves as learners and what kinds of Intelligences they use best to learn. Student and teacher responsibilities are well explained in the framework for language strategies instruction (see figure 3).

Figure 3: Framework for Strategies Instruction (Chamot & O'Malley, 1993)

Mnemonics

The last of the considerations before planning the integrated unit are mnemonic techniques or memory in language learning (see figure 4). The learning strategies of mnemonics bear a remarkable similarity to Gardner's Intelligences and need to be considered when planning teacher directed lessons, activities or tasks for inclusion on unit matrices as outlined previously.
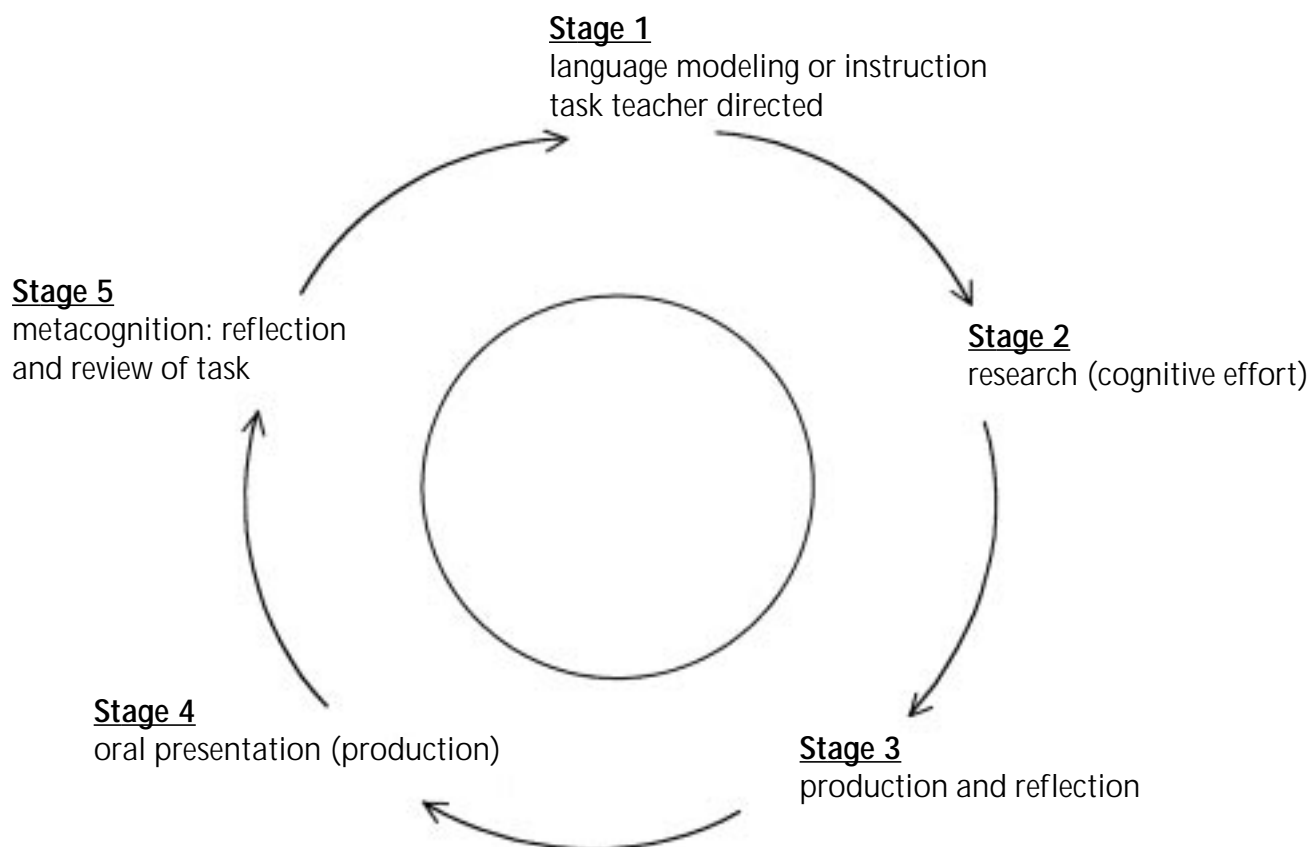
MNEMONIC TECHNIQUES	7 INTELLIGENCES
Linguistic **Peg Method:** One is a bun **Keyword:** Ei egg acoustic link with eye	Verbal/Linguistic
Spatial **Loci:** Location, retrieve vocabulary in rooms **Spatial:** Arranging words in patterns **Fingers:** Words associated to certain finger	Visual/Spatial
Visual **Pictures:** Pairing pictures with words **Visualisation:** Word or content visualised	Visual/Spatial
Physical Response Physically enacting information	Body/Kinesthetic
Verbal Elaboration **Grouping:** Organising data **The Word Chain:** Words following on rather than a peg method. **Narrative Chain:** Linking words with a story	Verbal/Linguistic
Other **Self Testing:** Practising retrieval **Spaced Practice:** Short, spaced retrievals **Real-Life Practice:** Participation in real-life communicative situations. Best at all levels of proficiency ensuring better links between encoding and retrieval.	Intrapersonal/Interpersonal

Figure 4: Mnemonic techniques compared with Gardner's Intelligences

Maximising Learning

Maximising language acquisition parallel to learning of content (see figure 5) can be enhanced by focusing on student presentation by:

- presenting independent learning to peers – opportunities for structured content lessons or structured language lessons or presenting models etc.

- presenting and sharing of accumulated knowledge tasks – students gain ownership of content and create an atmosphere of a community of learners. They will improve not only their presentation and language skills but become more involved and more judicious researchers.

- promoting interaction between audience and presenter – language learning occurs when students have the opportunity to negotiate understanding using the L2 (Pica, et al, 1983). By creating a structure whereby students presenting content are questioned on the content and meaning of their presented facts, all students remain engaged and the benefits of language learning then flow both ways.

- having to present content to peers in the early stages of the unit students tend to think in L1 when researching and/or thinking and tend to believe they can present their learning in L2. When students commence their presentations they have a degree of difficulty expressing themselves, usually due to a lack of critical vocabulary, and tend to translate unsuccessfully. My findings are that students address this situation and begin to inquire about critical vocabulary and language structures throughout teacher-directed task introduction discussions (Stage 1), during researching or cognitive effort (Stage 2) and most particularly during researching and production (stage 3) of the presentation. As students become more accomplished at presenting they spend more time researching language between Stage 3 and Stage 4, present more successfully and think through the production of the task in L2 rather than L1.

Stage 1
language modeling or instruction
task teacher directed

Stage 5
metacognition: reflection
and review of task

Stage 2
research (cognitive effort)

Stage 4
oral presentation (production)

Stage 3
production and reflection

Figure 5: Production of Oral Presentation

Conclusion

In conclusion, integrating content areas (KLAs) into 'big picture' topics rich in concepts and 'real life' learning situations, coupled with a communicative approach in a partial-immersion context, can give students opportunities to maximise their learning of both language and content. The Bloom/Gardner matrix (Coil, 1996) affords learners the opportunity to take responsibility for their own learning and to know themselves as learners whilst learning/teaching both independently or as part of a group.

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