Contents

I give credit for much of my learning success to my year-seven English teacher, Mr Buccini. Early in the year, he had a discussion about studying for an upcoming quiz and talked about different ways to study. As he was talking, I was thinking about how I liked to learn. I thought that rather than just reading my notes over and over, I would tape-record them and listen to them instead. This studying technique worked so well that I have used it ever since.

From my own personal experiences as a learner and from watching students in the classroom, I became interested in examining and using learning preferences to improve learning. When I first heard the term *differentiated instruction* used and described, I thought to myself, "Hey, I do that!" I know that as you read this book, you will have many of those moments, too. This book will offer a variety of ways to think about differentiating instruction by learning preferences.

A Step Back: What is Differentiated Instruction?

Through our experiences with people of all ages, we can say with confidence that people differ in the ways in which they learn. This is very apparent in a classroom, where a teacher is responsible for ensuring that subject-matter outcomes are met while dealing with an extremely diverse group of students. Differentiated instruction provides a way of thinking about teaching and learning that helps teachers not only recognise differences but also offers a framework in which to respond.

One model that is often used in planning for differentiated instruction is one that was conceptualised by Carol Ann Tomlinson of the University of Virginia (Figure 1.1). It is certainly not the only model or the only way to think about differentiated instruction; however, it is used and well accepted by many educators. The graphic makes it quite easy to see the different components and how they are interrelated.

Tomlinson (2001) says that teachers can differentiate three things: the content, which is the *what* of teaching; the process, or the *how* of teaching; and the product, which is how students *demonstrate understanding* of their learning. In order to determine what to differentiate, teachers must first determine how *ready* students are for a particular concept, what their *interests* are and what their *learning profile* is.

Figure 1.1. Differentiated Instruction Model (Tomlinson 2001)

Teachers can differentiate

| Content | Process | Product |

According to students'

| Readiness | Interest | Learning Profile |
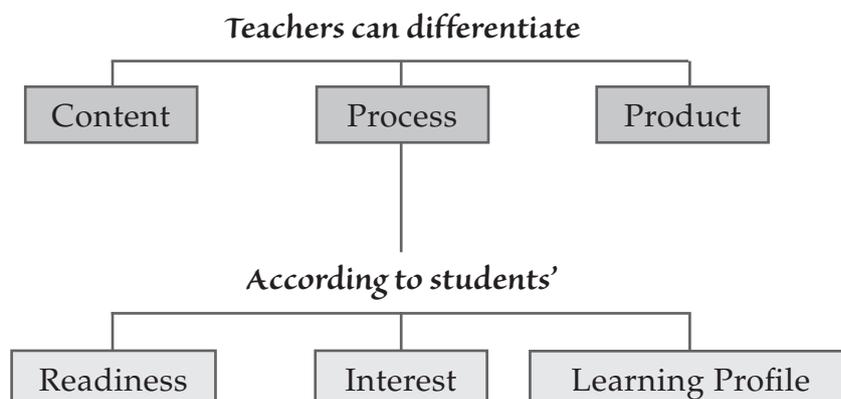
This Book Series

This series of books, all available from Hawker Brownlow Education in Australia, has been designed to help teachers focus on one particular aspect of differentiation at a time. The components of differentiated instruction cannot be completely separated from each another, but by exploring in depth, teachers may be able to get a picture of what differentiation might look like in the classroom without being overwhelmed. The three books: one focusing on student interest; one on readiness; and this one on learning profiles, are all interrelated, and they can give teachers practical strategies and lesson plans in each area so that they can study and adapt for their particular group of learners, and together they can help teachers develop a comprehensive view of differentiation.

What Are Learning Preferences?

Tomlinson defines a *learning profile* as a composite of the "ways in which we learn best as individuals" (2001, p. 60). It can include things such as learning styles, personality styles, culture, gender, intelligences and learning environment preferences. These terms have been used and interpreted differently in literature. In this book, the term *learning preference* will be used in a broad sense to include student learning styles, intelligences and preferences, and other factors that influence how students respond to learning experiences. Moving beyond the definitions and theories, the purpose of this book is to present practical ways to recognise and celebrate differences and to provide a variety of experiences that can positively influence students. It is a hopeful way of thinking – it recognises that students are different, but that we can use their strengths for personal development and to accomplish meaningful learning.

Research Connections

Learning can be described as a highly personal process in which each person absorbs and retains information and skills (Dunn, 1984; Teele, 1999; Williamson & Watson, 2006). Sparks and Castro (2006) write of a necessary paradigm shift from learning new information to understanding the process of learning itself. Helping students discover how they learn best and using this information to their advantage can help them to "learn how to learn" for a lifetime.

Thomas Armstrong, in his book *Multiple Intelligences in the Classroom* (2000, p. 17), describes some of the factors that can affect the ways in which we learn. They include biology (including heredity, genetic factors and brain injuries), personal experiences (including interactions with parents, teachers, friends and other people of significance and access to resources) and culture or history (including time and place of birth and cultural influences).

Learning Preferences Are Not Stagnant

A frequent misconception about learning preferences is that they are set early in life and never change. In fact, they develop over time with our previous and continuous experiences (Armstrong, 2004; Silver, Strong & Perini, 1997; Sparks & Castro, 2006; Sternberg & Grigorenko, 2004; Sternberg & Zhang, 2005). Some key ideas include the following:

- Our preferences are not "good" or "bad"; rather, what may influence the experience is the fit between the student and the material or the student and the method of learning.
- The way in which we respond can vary across tasks and situations.
- People differ in the strength of their preferences. Some people prefer certain styles very strongly, whereas others have weaker preferences.
- Some learners can switch easily between different ways of learning and others cannot (Sternberg & Zhang, 2005, pp. 245–246).

It is important to share these key ideas with students so that they are encouraged to experiment with different kinds of tasks, which will help them develop different ways of learning. They must also understand that learning preference does not equal ability.

Students Have the Capacity to Develop Balance in Learning Preferences

People do not have just one type of learning preference. Often they have several types that work well for them. In fact, some learners have a degree of balance between learning preferences, and many everyday tasks require different kinds of thinking at the same time. Most people are not equally adept in all areas, but greater balance can be developed over time (Sternberg, 2000; Williamson & Watson, 2006). It is not important to label students as certain kinds of learners but rather to help them work toward balance. When working on unfamiliar and challenging tasks, or when learners are feeling discouraged, it is certainly beneficial to have them work in their areas of strength. They need to work in different ways over time so that they can work in ways that feel comfortable, as well as in less comfortable ways that challenge them to develop as learners (McCarthy, 1985).

Is There an Impact on Student Achievement?

Teaching using student learning preferences can seem complex; it is important for teachers to be confident that their efforts will make a difference for students. Over the years, there have been a number of studies that support the idea that teaching using learning preferences can positively influence learning (Gardner, 1999; Geimer, Getz, Pochert & Pullam, 2000; Gens, Provance, VanDuyne & Zimmerman, 1998; Greenhawk, 1997; Kuzniewski, Sanders, Smith, Swanson & Urich, 1998; Mettetal, Jordan & Harper, 1997). Research has shown that regardless of how they are assessed, students who are taught in a way that is a better fit with their preferences

Creating a WebQuest

Before creating an original WebQuest, check to see whether a similar WebQuest already exists. If there isn't an exact match to your relevant standards, it is certainly possible to take an existing WebQuest and adapt the activities for your particular group of students. If nothing is suitable, a WebQuest can be created. The components are as follows:

- Introduction: This first section introduces the focus of the project or topic, which often provides a real-life scenario.

- Task: This section outlines the general idea of the task in which students will engage. It should outline the learning outcomes that students will achieve by the completion of the project.

- Process: Step-by-step instructions are described so that students are able to complete the task independently. Handouts, checklists or guiding questions may be provided.

- Evaluation: Evaluation tools and processes are made clear to the students. They should have these criteria prior to beginning the task.

- Conclusion: These activities help students bring some closure to the activity and often suggest ways in which their findings can be shared.

Maths

Basic Facts Choice Board (Visual Auditory Kinesthetic)

Learning goals: Students will –

Know: Basic facts of maths.

Understand: Recall of basic facts can help with estimation, mental maths and speed of computation.

Do: Work on one of the choice board tasks to learn a set of maths facts.

Make up a rap or song to help remember a set of facts.

Create a customised set of flash cards using large pictures to remember a set of facts.

Create a game to play with a friend to help remember a set of facts.

Create a poem or jingle to help remember a set of facts.

Create a play or dance to help remember a set of facts.

Look for patterns and create a way to help use them to remember a set of facts.

5. Practise with students. Have students practise the routine two or three times so that they understand what it will look like in the classroom. This active practice will help to reinforce the routine with kinesthetic learners.

6. Display the chart on a wall in the classroom. Once the routine has been practised, display the chart with the routine at the front of the classroom so that it can be revisited as needed. As it becomes habit and you teach a new routine, it may be placed in a less prominent spot and replaced with a chart for a new routine or one you wish to review.

7. Reinforce the routine. As students perform the routine the way you would like, reinforce this behaviour. This can be done with verbal praise or with other reinforcement.

8. Reteach as often as necessary. This might be one of the most often forgotten, yet important steps. Teachers do a fine job of establishing rules and routines early in the year. The difficulty seems to start after students have been together for a while and they may not have the routines firmly in their minds – they may test to see whether they still apply. If you find that the routines are not working well, put the poster with the steps of the routine back up in a prominent place and go through Steps 1–5 again. Revisiting routines as soon as they seem to be less effective is an excellent way to maintain a sense of order in the classroom.

Avoid teaching several routines at the same time, as students might become confused. Start with those that are most crucial to the effective running of the classroom and then add new ones as they are needed. The age and characteristics of the students in the classroom will determine what kinds of routines you will need to establish and reinforce.

Ideas to Create Opportunities for Active Learning

Another way to support student learning and help them stay on task is to have them actively involved in their learning. Incorporating active learning strategies helps to provide a variety of tasks and movement. The following is a list of cooperative learning activities that could be used. A compilation of these strategies can also be found on Reproducible 54.

- **Card Sort:** The teacher (or students) prepare two sets of cards. One set should have terminology and the second set should contain corresponding definitions. Students work in teams to find matches. It can be helpful if the terms and definitions sets are done on two different colours of paper.

- **Carousel Brainstorming:** The teacher puts poster paper on the wall with key questions or ideas at the top. Groups are formed and one person scribes for the group and adds to the chart as they brainstorm. When prompted, groups move to a new chart, read other groups' responses and add to the ideas. Teams may use a different colour of texta so that it is easy to ask questions of groups if ideas are not clear.

- **Find the Expert:** The teacher polls the class to see which students have special knowledge to share on a topic. Those students become the experts and stand in different parts of the room. The remaining students are divided evenly into groups and sit around an expert. They listen as the student explains his or her special understanding of the topic and then ask questions of him or her. They could also take notes, if appropriate. Groups rotate around the room until they have had an opportunity to hear from each expert.

- **Four Corners:** The teacher poses a question and gives four potential responses and points to a corner for each one (or the teacher might want to put a visual cue in each corner in advance). Students move to their chosen corner and discuss the topic with those who also chose that corner. The students then come together for a whole-class discussion.

- **Gallery Walk with Docent:** After teams have generated ideas on a topic using a piece of poster paper, they appoint a "docent" to stay with their work. Teams rotate around, examining other team's ideas and asking questions of the docent. Teams then meet together to discuss and add to their information so that the docent also can learn from other teams.

- **Graffiti:** Groups receive a large piece of paper and textas of different colours. Students generate ideas and write them quickly as if they were creating graffiti on a wall. Groups can move to other pieces of paper, carousel style, and discuss or add to the ideas of other groups, if desired.

- **Human Continuum:** The teacher poses a question or problem and students line up according to their opinion on the answer. The teacher can then discuss the distribution of the group or prompt students to discuss their reasoning for choosing their spot on the continuum with one or two people nearby.

- **Inside/Outside Circles:** The teacher divides class in half. One group forms a circle and then turns to face outward. Those from the remaining group find one person in the circle to stand opposite (so there are two circles of people facing each other). Information can be shared and reviewed, and the outer circle can move easily (e.g. The teacher could call, "Outside circle people, move three places to the right.") to generate more responses or discuss new information.

- **Jigsaw:** "Home groups" using a small number of students (i.e. three to six students) are formed. Each home group member is assigned a number. Students then move to an "expert group" containing others who have the same number (e.g. All "number ones" together). They read a short section of information from a textbook (or other material) independently and then work together to decide what is important. After discussion in these "expert groups", everyone returns to his or her "home group" and each expert teaches his or her portion of the material. The teacher may want to provide a graphic organiser so that each student leaves the home group with a set of notes that covers all of the important points.

- **Line-ups:** Students line up according to a prompt by the teacher. Examples might be to line up by house number, birthday month, etc. They then discuss with an elbow partner (someone they can touch elbows with without changing their place in the line) or in a small group.