This chapter begins with an exploration of the meaning of learning and the concept of best practice pedagogy in a constructivist classroom. You are introduced to a new model—the Best Practice Integrated Pedagogy (BPIP) model—to help you better understand how the learning process, how students learn and how we teach are all interrelated. The chapter then provides a brief discussion of the historical development of models of learning and how these have informed the understanding of effective pedagogy over the years. The social constructivist model is identified as the contemporary dominant model with incursions of the digital pedagogy model for twenty-first-century learning.

Many learning style models, cognitive processing taxonomies and instructional frameworks have been developed to facilitate teaching and learning. The chapter outlines some of the most popular of these. The concept of active learning is elucidated with a supporting hypothetical model and examples of many strategies that you can use to apply active learning in your teaching. The chapter ends with an outline of the nine Values for Australian Schooling that should guide your best practice pedagogy.

**LEARNER OUTCOMES**

Studying this chapter should enable you to:

- explain the meaning of learning and best practice pedagogy
- understand the historical development of the foundational models of learning
- describe taxonomies that help us understand cognitive processing
- understand the links between best practice pedagogy and active learning
- appreciate the range of Australia’s values and their relevance in an integrated pedagogy
- plan a lesson for a primary class in which you could use your understanding of learning styles, taxonomies, instructional models and active learning strategies.

**KEY TERMS**

- active learning
- behaviourist model
- best practice pedagogy
- cognitivist model
- connectivist model
- learning
- model
- multiple intelligences
- social constructivist model
THE CONCEPT OF BEST PRACTICE PEDAGOGY

The history of pedagogy is awash with a plethora of scholarly attempts over 2000 years to answer three questions: What is learning? How does it happen? and, How can we facilitate it? The Greek philosophers Socrates (469–399 BC), Plato (427–347 BC) and Aristotle (384–322 BC) were among the well-known pioneers of the search for answers to these questions (Monroe, 1925), which have continued to exercise the minds of great philosophers, psychologists, neuroscientists and educationists over the centuries. This search has led to the development of a multitude of models or theories of learning, designed to explain how people learn and the best approaches to teaching. These models shed light on the meaning of best practice pedagogy.

Quite often assessment and reporting are posited as separate from teaching and learning (pedagogy). This book asserts that teaching, learning, and assessment and reporting need to be treated as the three pillars of curriculum in an integrated pedagogy. In an integrated pedagogy, best practice pedagogy can be defined as teaching, learning, assessment and curriculum, which produce superior results among learners. Best practice pedagogy has been formally defined as ‘a program, process, and/or procedure that continuously and regularly produces superior results when compared with other strategies’ (USDHHIS, 2003). It is pedagogy that challenges learners to excel at their personal best, learning in their different styles and equipping them with the knowledge, skills and competences that they will need as productive citizens in the twenty-first-century digital economy. Such pedagogy helps learners develop their critical-thinking and problem-solving skills, to be self-directed learners, and to reason without taking things for granted. It discourages rote learning and encourages students to develop higher quality learning and a deep understanding of what they learn through analysing, evaluating and creating new ideas and applying what they learn in authentic, real-life contexts beyond the classroom and school. What these children learn sharpens their curiosity and imagination.

Best practice pedagogy puts students at the centre of the teaching, learning and curriculum processes, and utilises assessment for formative purposes with immediate constructive feedback loops. It seeks to maximise student involvement and engagement and employs strategies that promote active learning, deep level learning and mastery of fundamental concepts by the students. It is based on well-developed theories, applies relevant principles and strategies and meets the expectations of different stakeholders. Its foundational philosophical stance is that what happens in the classroom is only of value if it benefits the children and...
children are the primary focus of teaching. It sets high expectations for all the students and expresses the belief that every child can succeed. It tries to make learning challenging and interesting, particularly with the use of technology and active collaborative learning strategies. In best practice pedagogy students and teachers are both learners and teachers continually learn from their experiences through reflective strategies, collaborative activities with their peers and ongoing professional development as lifelong learners. They are always seeking answers to the three questions posed at the start of this section. The answers to these questions enable us to implement a pedagogically sound pedagogy; hence best practice pedagogy. They represent the core of best practice in an integrated pedagogy, which is represented in my model for best practice pedagogy (the BPIP model) in Figure 1.1.

![Figure 1.1: The Best Practice Integrated Pedagogy (BPIP) Model](image)

The BPIP model is designed to help you better understand the meaning of best practice pedagogy by creating a synthesis of what each of the three questions involves, and how the interactions among the variables of the three questions constitute the core of best practice pedagogy. In the model, each of the questions is represented by a circle. The first question, What is learning?, is represented with the letter [L] in the top left-hand circle of the model. To the right of that, the second question, How does it happen?, is represented with the label [H₁] in the circle. And the third question, How can we facilitate it?, is represented with the label [H₂] in the bottom circle.
As these three primary circles intersect, they create segments of pedagogical relationships among the questions, which need to be understood to appreciate the meaning of best practice pedagogy. The intersection of circles L and H₁, shown as LH₁, represents the need for us to know learning as a process and the theories that help us to understand how this process happens in the construction of knowledge. The intersection of circle H₁ and H₂, shown as H₁H₂, emphasises the need to align our understanding of theories of learning with models, principles and strategies for effective quality teaching and assessment, as well as professional teaching standards and curriculum. The intersection of circles H₂ and L, shown as H₂L, represents the teacher's understanding of learning and the attributes of the learners involved in learning. What learning is (L), how students learn (H₁) and how we can help them learn (H₂) are the heart of creating best practice in an integrated pedagogy as represented by LH₁H₂ or the heart of the BPIP model. This model is thus consistent with Fink’s (2003) systematic learning-centred design model, which postulates that what and how students learn is at the heart of creating significant learning and that investigating these questions helps us to implement an effective pedagogy (Bell and Kahrhoff, 2006).

In a study that investigated ‘good practice’ among undergraduates, Chickering and Gamson (1987) identified seven principles for good practice and their multiple effects, which improve education. As shown in Table 1.1, their findings lend support to the BPIP model.

<table>
<thead>
<tr>
<th>TABLE 1.1 THE SEVEN PRINCIPLES OF GOOD PRACTICE AND THE BEST PRACTICE INTEGRATED PEDAGOGY MODEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOOD PRACTICE PRINCIPLE (CHICKERING AND GAMSON, 1987)</td>
</tr>
<tr>
<td>Encourages contacts between students and faculty</td>
</tr>
<tr>
<td>Develops reciprocity and cooperation among students</td>
</tr>
<tr>
<td>Uses active learning techniques</td>
</tr>
<tr>
<td>Gives prompt feedback</td>
</tr>
<tr>
<td>Emphasises time on task</td>
</tr>
<tr>
<td>Communicates high expectations</td>
</tr>
<tr>
<td>Respects diverse talents and ways of learning</td>
</tr>
<tr>
<td>Multiple effects</td>
</tr>
</tbody>
</table>

(continued)
Each of the questions that comprise the BPIP model to elucidate the meaning of best practice pedagogy is examined below.

**What is learning?**

Whether you are still at university training to be a teacher, or whether you are in your early years or advanced years of teaching, this is a question that is central to your pedagogical practice. It is represented in circle L in Figure 1.1. An understanding of what *learning* is and the processes it involves helps us to gain a better understanding of how children learn and informs how we can facilitate their learning. However, as Knud Illeris (2009, p. 18), internationally acknowledged as an innovative contributor to learning theory, warns, ‘learning is a very complicated matter and there is no generally accepted definition of the concept’ … The concept of learning includes a very extensive and complicated set of processes, and comprehensive understanding is not only a matter of the nature of the learning process, … (but also of) all the conditions that influence and are influenced by this process’. Let’s try to simplify this rather slippery and very complex concept, by taking a careful look at what learning really is.

Ambrose et al. (2010, p. 3) define ‘Learning (as) a *process* that leads to *change*, which occurs as a result of *experience* and increases the potential for improved performance and future learning’ (italics in original). You can see from this definition that learning is an experiential process involving action whose consequence is the improvement of performance. The experiential process involves changes in knowledge, understanding, attitude and ability to apply skills to a task in a given context. Because the change brings about improved performance at the time it occurs and in the future, the learning process is seen as leading to permanent changes in behaviour and attitudes. It is this permanency that makes Barry and King (2001, p. 18) use Shuell’s definition of learning as

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**Table 1.1**

<table>
<thead>
<tr>
<th>Good Practice Principle (Chickering and Gamson, 1987)</th>
<th>Element of Our Best Practice Pedagogy Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooperation</td>
<td>$H_1,H_2$</td>
</tr>
<tr>
<td>Interaction</td>
<td>$H_1,H_2$</td>
</tr>
<tr>
<td>Diversity</td>
<td>$L_1,H_2$</td>
</tr>
<tr>
<td>Responsibility</td>
<td>$L_1$</td>
</tr>
</tbody>
</table>

'an enduring change in behaviour, or in the capacity to behave in a given fashion, which results from practice or other forms of experience'.

Illeris (2007, p. 3) agrees when he defines learning as, ‘any process that in living organisms leads to permanent capacity change and which is not solely due to biological maturation or ageing’. He explains that whereas learning has traditionally meant the acquisition of knowledge and skills, our understanding now is that it covers much more than just knowledge and skills and includes emotional and social, as well as societal dimensions. You can gather from these definitions that learning is not passive; that it is a fundamentally constructivist process in which learners actively build or construct their understanding of the information they come into contact with, which we call learning. Wilson and Peterson (2006, p. 1) sum up well when they say, ‘learning is a process of active construction; it is a social phenomenon, as well as an individual experience’. This understanding leads us to ask the second question, How does learning happen?

**How does learning happen?**

In answering this question we can examine the links between circle L and circle H1 in Figure 1.1. Brain research, such as that conducted by Williams and Dunn (2008), has shed light on how learning happens (H1) and how we can improve learning (H2L). The learning process involves our brain taking information, filtering it, organising it to make sense of it and storing into memory what is understood as meaningful to the learner, to be used in the future. Williams and Dunn’s (2008) research identifies nine brain processes that help us to answer the question, How does learning happen? The first process is contextualisation. This step requires that the new information learners receive relate to the learners’ real-life context. The new information makes meaning through personal context. The personal context does not mean isolation. That wouldn’t be ‘real life’. It includes how learners interact and relate to those around them, taking into consideration aspects of culture like language and social interactions.

Second, learning requires motivation to happen. If learners are not motivated, they make no effort to commit the new information to memory and so no permanent change occurs as a result of exposure to the new information. Third, learning happens when it is reinforced with hands-on experience. The hands-on experience gives learners the opportunity to examine the new information and see how its parts link together to make sense as a whole.

The fourth process in which learning happens is through extending learners’ schemas. Learners do this by linking new information to their prior knowledge. As we shall see in answering the third question (H2), this is the step where
you, the teacher, can help your students make connections between what you have already taught them and what is new, so as to facilitate their making this connection.

The fifth process is the ‘chunking’ stage in which the brain groups data according to themes or concepts and assigns meaning to the chunks. The chunks contain information that is conceptually related and by grouping it, the brain is better able to assign meaning. The sixth process is reflection. In this phase, the brain thinks about what has been learnt and allocates the newly acquired useful information to long-term memory.

In the seventh process, the brain looks for associations between what is being learnt and the learner’s emotions. Williams and Dunn say that emotions interact with reason to support learning. Learning happens faster and is retained for longer periods when the prevailing senses and emotions are positive or supportive.

The eighth process relates to multiple intelligences. Learning happens more readily when the new information aligns better with the learner’s ways of being smart. Howard Gardner (1983; 2013) has identified ten multiple intelligences, representing different ways learners can be smart, as we shall discuss further in this chapter. The final understanding of how learning occurs, according to Williams and Dunn, is that it requires a lot of energy for the brain cells to function well. This energy is provided by repetitive stimuli or messages, which give the brain a chance to rehearse the new information and learn it before it fades. Thus we can conclude, that learners learn through a process of actively constructing knowledge from the experiences they encounter, building on their existing fund of knowledge and organising new information in the light of prior knowledge to make their own meaning.

**How can we facilitate learning?**

We have already seen in the BPIP model that learning is an active process, that it needs to be contextualised in the learner’s real-life situation and that it is reinforced by hands-on experiences. Informed by this understanding (LH1), an effective way to facilitate learning (LH1H) is by creating a learning environment which gives learners opportunities to be actively engaged in real-life hands-on activities. In the real-life context, the learner does not learn alone. This understanding helps us facilitate learning by giving learners opportunities to work collaboratively with others. We can do this, for instance, by organising for the children to work in pairs or in cooperative learning teams in which they can work in special structures to maximise the benefits of cooperative learning (Kagan, 1994).
We also know from H2 that repetitive stimulation enhances learning. We can therefore facilitate learning by giving learners projects in which they integrate cross-curricular knowledge from different key learning areas (KLAs) to maximise the positive effects of repetitive stimuli to the brain.

H1 (how learning happens) is informed by Williams and Dunn’s (2008) learning process number four that prior knowledge is crucial in the learning process. We can use this understanding (LH1) to introduce what we teach (H1H2) by linking it to what we know the children have already learnt (H2L).

Learning process five of the Williams and Dunn model tells us that learning happens better when the brain can organise data into ‘chunks’ or concepts and themes of related meanings. This informs H1 of the BPIP model. Also taking this into account enables us to facilitate learning H2 by structuring the information we give to learners in an orderly manner, which shows how ideas are related to concepts and how the concepts can be grouped into themes to provide relational analysis (Miles and Huberman, 1994) of the meaning embedded in the data. For example, a new topic can be introduced by asking children to design a concept map of what they already know about the topic. This is usually called ‘brain-storming’ and helps learners to see the small and big ideas and how these relate to each other to make meaning. It helps them to see gaps and it gives you the opportunity to facilitate learning by providing a scaffold that helps them to organise the information into knowledge and understanding.

How learning happens in H1 informs us that motivation plays an important role in children’s learning. Creating a motivational learning environment (H2L) is therefore a big facilitator of learning. Much as we know that motivation (defined as ‘an internal state that arouses, directs and maintains behaviour’; Woolfolk, 2008, p. 336) is a very complex concept, this understanding that children need to be goal-oriented and with a desire to learn helps us plan and apply strategies which will encourage students to want to participate and to achieve learning outcomes, thus improving chances for effective teaching and learning (LH1H2).

Also helping us to understand H1 is Williams and Dunn’s (2008) process number eight, which informs us that children learn more easily when the information they are required to learn (L) aligns well (H2) with their way of learning. Therefore, we can facilitate learning by capitalising on our understanding of Howard Gardner’s (2006) multiple intelligences, in which he sees intelligence as comprising ‘many different and discrete facets of cognition, … and people have different cognitive strengths and contrasting styles’ (p. 5). This means planning teaching (LH1H2) to allow for multiple approaches to learning and not using only one strategy for teaching or assessment in facilitating learning by all students.
The final learning process in Williams and Dunn’s (2008) model informs \( H_1 \) of how learning happens, as well as our teaching \( (H_2) \) to allow for reflection and to provide formative feedback to students so as to move our practice towards becoming a Best Practice Integrated Pedagogy \( (L_1H_1H_2) \) as represented in Figure 1.1.

**Role of models in understanding best practice pedagogy**

A **model** is a conceptual structure that represents a way of thinking of or understanding relationships involved in a process. It postulates on the relationships involved, the principles that underpin those relationships and the structural and cultural dynamics responsible for causes and effects of what happens in the model. For example, the BPIP model helps us to understand relationships between learning, how it happens and how we can facilitate it. If we can facilitate learning efficiently and effectively, as postulated by this model, then we are utilising best practice pedagogy. This important idea will be considered further, after discussing the major foundational models of learning.

1. Learning is not an easy concept to define and has been defined in many different ways. How do the definitions given in this section align with your own understanding of the meaning of learning? Which one do you prefer? Why?
2. Critically reflect on a lesson you have completed with one of your classes recently. To what extent would you say it reflected best practice?
3. If you had the opportunity to conduct the same lesson again with the same class, how could you make it a better reflection of best practice in an integrated pedagogy?
4. What is your understanding of an ‘integrated pedagogy’?
5. Why do you think it is important to treat the different components of pedagogy as a holistic whole rather than independent units?
6. To what extent does the BPIP model help your understanding of best practice in an integrated pedagogy?
7. Does this model reflect your own views about the learning and how you can facilitate it? What suggestions can you make to improve on it?

**FOUNDATIONAL MODELS OF LEARNING**

This section will focus on those models agreed on by most scholars as providing the basis for a primary understanding of how learning happens and how we can facilitate it.
The empty vessel model

One of the earliest theories of learning was founded on the belief that effective instruction takes place when a teacher transfers or transmits objective knowledge to the learner. This is why this conceptualisation of learning was popularly referred to as the ‘transmission’ model of learning and the process as the ‘transmission mechanism’. According to the transmission model of learning, the learner played no active role in the learning process and was simply a passive recipient of knowledge. The model was thus often characterised by the metaphor of an ‘empty vessel’, which played no role as it was being filled with knowledge, or as knowledge was being ‘poured’ into it. Similar conceptualisation also used the metaphor of a ‘sponge’ that simply absorbed whatever liquid was poured onto it.

Examples of teaching guided by the transmission model abound in the early Catholic Church, around 500 AD, within its churches, monasteries, schools and even universities through to around 1500 AD. In the churches, parishioners sat quietly while the priest literally filled them with the word of the gospels. In the Middle Ages, Benedictine, Cistercian and Carthusian monks received instruction from high priests and bishops without even uttering a word. In turn, the monks taught in schools where again, transmission of information to passive learners was the modus operandi (Monroe, 1925). This model guided instruction throughout the Western world for many centuries. For example, in a study of teaching and learning in the USA from 1890 to 1990, Cuban (1993) noted that teachers talked and students were directed to listen and take down notes in order to learn. Unfortunately, as Smith et al. (2005, p. 2) pointed out, in this ‘Pour it in model, the information passes from the notes of the professor to the notes of the students without passing through the mind of either’. However, notwithstanding the deficiencies of this model, the transmission model remains foundational to pedagogical practice even today, as represented, for instance, in the orthodoxy lecture method of instruction in universities from Harvard to Oxford and from Cambridge to Sydney.

The blank tablet model

This model is attributed to John Locke (1632–1704), who theorised that the mind of a child before it receives the impressions gained from experience is a blank tablet. According to Locke, the child’s blank slate (tabula rasa) received impressions from the child’s own experiences. This model originated from the work of Aristotle who as a student of Plato proposed that knowledge is found,
not inside people’s minds, but outside, using their senses. This gave rise to the *empiricism model of learning*, that is, the theory that knowledge comes only or primarily from sensory experiences.

Following Aristotle’s model, Locke proposed that the way to help children learn was to design instances which gave them experiences (Monroe, 1925). This model gave birth to the scientific method which is characterised as a method of inquiry in which knowledge is gained through a systematic methodology of experimentation and making observations which enable the learner to answer key questions, and thus know the truth. It followed, therefore, that exposing learners to different experiences would enable them to develop understanding and expertise in different areas of knowledge. This premise gave birth to the discipline-based liberal arts education taught in many universities.

To the extent that the tabula rasa model provides for experimentation, questioning and observation on the part of the learner, it represents a significant departure from the completely non-participatory nature of the transmission model. Because it introduces the idea that stimuli experienced by a child influence the child’s learning or behaviour, it can be seen as a humble precursor to the behaviourist model.

The *behaviourist model* of learning is attributed to American behaviourist and social philosopher, Burrhus Frederic Skinner (1904–90). In his seminal book, *Science and Human Behavior*, Skinner (1953) postulated that learning occurs through a process of events happening at the same time, with one being the stimulus and the other the conditioned response. He focused primarily on the relationship between the environment and behaviour, and saw learning as the result of forming connections between stimuli from that environment and related responses.

It was similar to the learning by conditioning theory, developed by Russian physiologist Ivan Pavlov (1849–1936) on his work with dogs; and even closer to Edward Thorndike’s (1874–1949) theorisation that for children to learn, we should structure learning environments that send specified stimuli designed to produce the desired learning. It was Skinner, however, who developed and popularised the behaviourist model in educational contexts. In the behaviourist model, motivation to learn was driven by rewards and punishments (Bransford, Brown and Cocking, 2000). This theory was foundational to several behavioural instructional models in education, such as that developed by Gagne (1977), which consisted of the following nine steps:

1. Gaining attention
2. Expectancy: Informing the learner of the objective