

Learners and Learning

Section One: About this module

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Learners and Learning

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SECTION ONE

About this module

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Introduction

1.1

The problem with learning

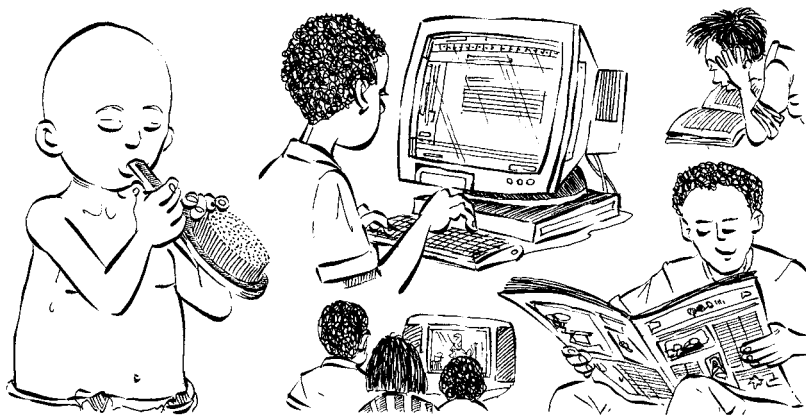
It seems obvious that teachers should be interested in learning. Children go to school to learn; teachers go to school to teach them how to learn. The introduction of outcomes-based education has re-established the importance of learning by emphasizing *learner-centredness* and *lifelong learning*, and by highlighting the importance of creating a *culture of learning and teaching* in our schools.

But learning doesn't belong only in classrooms: learning new things is something that we all do, everywhere and throughout our lives. Long before children get to school they learn about the world by inquisitively exploring their immediate environments, responding to a multitude of colours and sounds, touching, grasping, and putting all kinds of things into their mouths. Perhaps most importantly of all, young children learn to talk, to communicate with others, and to know the world through the language of their mothers and others in their cultural context. As a result, children arrive on the first day of 'big' school with their heads already full of rich learning experiences.

This everyday learning – learning *outside* of the classroom – continues throughout our lives. Even as adults we continue to discover new things about our worlds – through the newspapers we read, the TV we watch, and in our interactions with others in the workplace and at home.



Week 1 begins.



“
The process of learning seems so natural that we often forget to ask important questions about it.
”

None of us doubt that learning to understand the world is a central part of education, but because learning is such an ordinary and everyday thing, we sometimes take it for granted. We don't give a second thought to *how* the people around us are learning, or *why* they are able to remember all the new things they learn. The *process* of learning seems so natural that we forget to ask important questions about it; we often don't bother to learn about learning.

There is a danger in this oversight, particularly for teachers. Precisely because learning is so common and so natural, we need to think about it carefully and understand what it is, and why and how it happens. We need to understand why different kinds of learning are important in different contexts. More significantly, we need to understand why, and under what conditions, learning doesn't happen when we expected it to.

What will you learn in this module?

Not surprisingly, *Learners and Learning* aims to develop your understanding of learning. It seeks to assist you, as a teacher, to be able to analyse learning, and in so doing, to reflect on what you can do to improve it.

We have divided the module into six sections. This first section:

- introduces the module;
- discusses how we'd like you to study;
- explains how we understand learning;
- begins to explore, at a simple level, how learning is initiated.

Sections Two to Six each pose, and provide tools for answering, a critical question about learning:

Section	Critical question about learning explored	
Section Two	How do we, as teachers, enable learners to learn?	This section explains how learners move from the known to the unknown.
Section Three	How is school learning different from everyday learning?	We explore how teachers can implement good school learning in classrooms.
Section Four	What role do texts and literacy (reading and writing) play in learning?	We argue that reading and writing are crucial to good school learning.
Section Five	What role do teachers play in producing and improving learning?	In this section we consider this question in detail.
Section Six	How can teachers use different theories of learning to help them understand learning in their classrooms?	We examine a number of different cognitive theories and consider the relationship between theory and practice.

At the end of each section we consider how the ideas about learning discussed relate to the South African debate about outcomes-based education.

How to work with this module

1.2

The importance of active learning

As you work through the Learning Guide, you will see that we advocate the idea that ***new understandings depend on, and arise out of, action***. Because we firmly believe this, we have designed this Guide to include many activities that we hope you, as the teacher-learner, will complete. Like all good learning materials, the Guide will work best if you ***engage systematically with the activities*** that are set out for you here. If you don't do the activities, you will miss out on the most important part of the learning pathway we have developed for you.

Reading and writing activities

Most of the activities in the Guide are ***reading and writing activities***. It is important that you apply your mind to each one of them and answer the set questions in your workbook.

Follow the instructions given for each activity carefully. You may, for example, be asked to read an article from the Readings, to consider a set of issues raised in the Guide from a particular perspective, or to listen to a specific part of the audiotape. Follow these instructions but also write down any other comments or thoughts that come to mind as you do each activity. In particular, think of how you can apply the new ideas in your teaching.

The activities you are asked to do are designed primarily to help you to learn something new, or to acquire a new understanding about something. As with the readings, we will sometimes ask you to go back to an activity you have done in your workbook and revise it in the light of the new understandings you have developed. Don't skip this step; it is a vitally important part of the learning process.

Thinking activities

At various points in the Learning Guide, we ask you to ***pause*** and take some time to reflect on a particular issue. These thought pauses are designed to help you consolidate your understanding of a specific point before tackling the next section of the Guide. They deliberately try and slow you down!

One of the habits many of us develop through our involvement in a rote recall kind of learning is that we rush through things. Once we have read something, we believe we know it. This isn't true. While we may now recognize the idea, we probably don't really understand it in any detail. Work through this Guide slowly and thoughtfully. Reread and rethink. This is how we develop a depth of understanding and become able to use the ideas we learn.

Try to link the issue raised in each thought pause with what you have read, with what you have already learnt about learning, with your own previous experience, and so on. Think about the problem we have raised. You might want to jot down your ideas in your workbook so that you can be reminded of them at a later stage.

Listening activities

The audiotape (available in 7 audio clips on www.oerafrica.org) contains interviews with South African experts in the field of learning, interviews with teachers, and short excerpts of teaching and learning experiences. The tape serves two key purposes:

- It provides learning variety in that it asks you to listen rather than read. It also dramatizes learning events so that the interactions between teachers and learn-



You will recognise these activities by this kind of icon in the margin next to them. The recommended time you should spend on each activity is also included.



An icon like this will appear in the margin when you need to stop reading and reflect on an issue.



An icon like this will appear in the margin alongside all listening activities that require you to listen to the audiotape.

ers come alive. A learner who used a similar tape in another module said that it offered 'light entertainment' after the heavy reading he had done! This is a good response. Enjoy the tape.

- It illustrates or magnifies ideas presented in the Guide by providing you with examples of how teacher-experts use these ideas in **conversation**. Listen to how they construct arguments, or how they use a concept or idea to analyse an incident in a classroom.

We refer you to the audiotape at specific points in the text and have tried not to use excerpts that are more than about twelve minutes long. You may find it difficult to concentrate at first. Your listening skills will improve, however, if you use the questions in the activities to guide your listening, make notes while you listen, and listen to excerpts more than once. Feel free to listen to the tape ahead of time, but do so **again** when the Guide requests you to do so.



This time management icon will help you to assess how well you are using your time. We have assumed that you will work with this Learning Guide over 20 weeks, spending 6 hours studying each week. Try and make sure you begin sections in the correct week.

How much time should you spend studying?

It is impossible to estimate how long it will take hundreds of different kinds of learners to work through this module. We have written it so that an average, hard-working student who works consistently for six hours a week will finish this module in about twenty weeks (a university semester). In other words, you should set aside about 120 hours of time to study.

We expect that you will spend the 120 hours in the following way:

- Reading time: about sixty hours. This includes reading the Guide as well as readings in the Reader.
- Activity time: about forty hours. This includes the time it takes you to think about your readings, listen to your audiotape, and write your answers in your workbook.
- Assignment writing time: about twenty hours. This is the time you will spend writing the assignments you submit to your tutors.

As we have said, however, different learners learn in different ways and will take different lengths of time to complete this module. Be your own guide. Structure your learning so that it fits with your lifestyle. You could, for instance, complete this module:

- in ten weeks if you are a full-time student and can spend twelve hours a week on this module;
- in a year (or about forty weeks) if you are very busy and can only spend three hours a week studying.

Of course you could also complete this module in a couple of days if you ignore all the activities and simply read it from cover to cover. But this isn't studying and you will probably forget everything within days!

We also know that different students work at different speeds, so you may well find that you need more (or slightly less) than the 120 hours we have estimated it will take learners to complete this module. Again, assess your own capabilities and spend more time on the module if you feel you need to do so.

Assessing your learning

We have designed this module so that it models an outcomes-based assessment style. This means that the book promotes an assessment process that:

- is **continuous** and **formative**;
- assesses your ability to **relate ideas about learning** to **classroom realities and concerns**;
- contributes to your **intellectual development**.



Different students learn in different ways and at different speeds. Assess your own capabilities and structure your learning to fit your lifestyle.



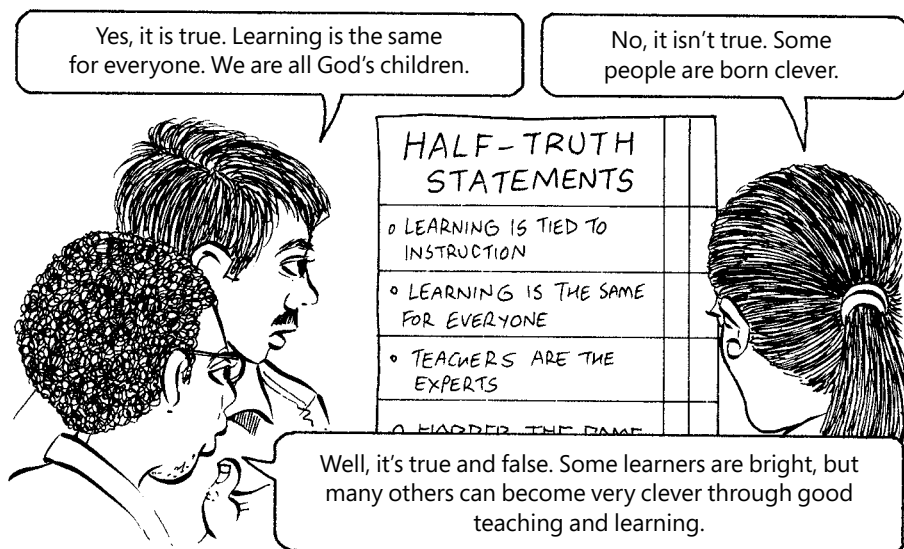
While your institution may still require you to write a final exam, we believe that your **own assessment** of your **consistent engagement** throughout the learning process is just as important as any final 'measurement' of your ability.

So far, this section has set out the different learning media which make up the module (a 'teaching' text, academic articles, and taped discussions which expand and reflect on the text) and has explained what it is that we expect you to do in order to acquire new understandings about learning. This explanation is descriptive in two ways. In one, more obvious sense, it describes all the important components of the module. In another, more abstract sense, it describes a conception of learning (and thus of assessment) that is important for you to understand:

- Firstly, the module as a whole is a **system** of knowledge about learning. Not only do the various sections and parts of each component (Learning Guide, Reader, and audiotape) build on one another; each whole component also builds on and clarifies the ideas in the other components. This means that as you work through the whole module, you are building relationships within and between the different texts.
- Secondly, the section assumes that you need to **do** things in order to learn. It sets out the kinds of **tasks** or **activities** that you need to engage in in order to come to know this system, that is, to learn about learning. You need to engage in action to start to learn something new, and you need to continue with such action in order to gain and consolidate new understandings.

At the beginning of Sections Two to Six, your first action will be to consider a number of **contentious statements about learning**. The aims of doing this are to:

- help you define what you already know about learning;
- establish what you think you may know (but which might be wrong);
- focus your thinking on the central issues of each section.



Spend time considering whether or not you agree with each of the statements, and for what reasons. As you read through them, make notes on your initial response to each (we will ask you to reassess these first responses later). We have tried to formulate the statements so that they are neither obviously true nor false but rather represent half-truths about learning. This means that while they may offer important insights into learning, they tell only **part** of the story and can be misleading or incorrect in some important aspects.

At the end of Sections Two to Six, your last action will be to go back to the statements you considered at the beginning and think about them again in the light of

what you have studied. When you do this, ask yourself:

- How have my views or understandings changed?
- Can I provide better reasons for why I agree or disagree with particular statements? If yes, what are these? If no, why not?
- What are the strengths and weaknesses, or the half-truth, of each statement?

These half-truth statements act as a special kind of *learning outcome*. They direct your attention to the key ideas in each section. By returning to them after studying a section, we are asking you to assess the degree to which your understanding of these key issues has changed. In other words, we are asking you to decide whether or not you achieved the desired learning outcome.

How does learning get started?

1.3

What are half-truths?

In Reading 5, Dwyer argues that a whole range of *common-sense statements about learning* made every day by teachers, are only half-truths. For example:

- He argues that the statement '*learning is a somewhat unnatural activity*' is true to the extent that learning requires hard work, but false in that it is something all children do simply because they grow and develop.
- He suggests that the statement '*learning is the same for everyone*' has some truth in it (because all children have a right to acquire the common body of knowledge that enables them to participate in a democratic society) but is false in another sense (because every child learns differently).

Dwyer suggests that many myths about learning flourish because there is some element of truth in these common-sense statements.



The problem is that the falsehoods in these statements often 'blind' us to very important issues. This blindness often leads us into teaching in ways that are not conducive to good learning.



Most of the statements about learning at the beginning of each of this module's sections can be considered to be *half-truths* rather than entirely true or false. As a learner it is important that you, in each case, think about:

- in what ways they are true;
- in what ways they are false.

We hope that in the process of studying each section you will refine and change your initial understanding of the half-truth statements and find further knowledge and evidence to support particular positions.

Let's read the article by Dwyer to see what he can tell us about half-truths in learning.



You need about 45 minutes to do this activity. Read Dwyer carefully and more than once. Do Activity 1 alone first and discuss it with other teacher-learners when you have finished.

ACTIVITY 1

- 1 Glance through the table below. Then read the article by Dwyer ‘Some half-truths about learning’ (Reading 5). Use the statements in the first column of the table to guide your reading.
- 2 When you have finished reading, and understand what Dwyer is arguing, draw a table similar to the one below in your workbook and complete it.

Statement about learning	What does Dwyer consider to be true about the statement?	What does Dwyer consider to be inaccurate or false about the statement?
Learning is the act of acquiring and retaining information.		
Learning is a somewhat unnatural activity.		
Learning is best undertaken in a structured, orderly manner.		
Learning is tied to instruction.		
Learning is the same for everyone.		
Teachers are the experts.		

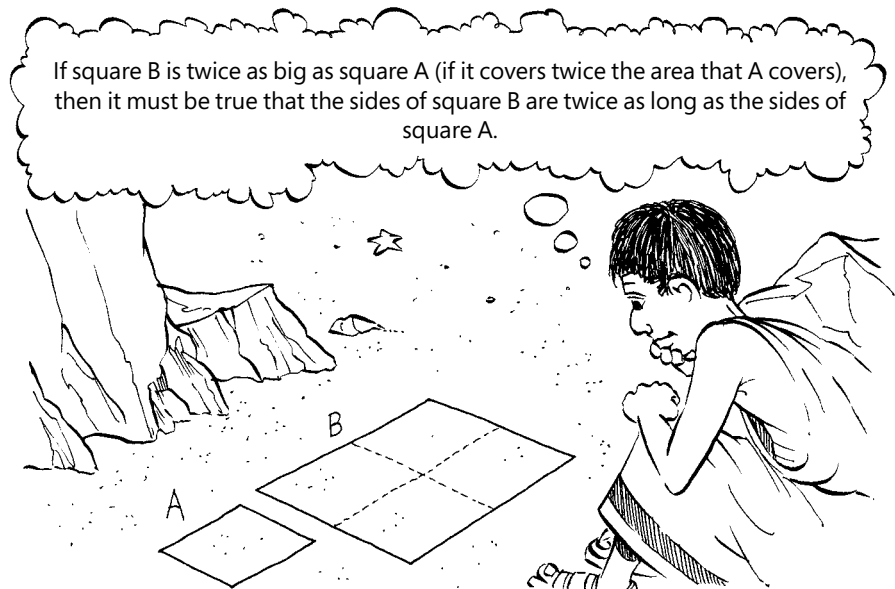
Starting to learn

We won't provide feedback on Activity 1 immediately. As you move through this module, you will work out what half-truths are and why they limit our understanding of learning through your own *action* by doing the half-truth activities regularly.

Let's continue by finding out how *believing that we know the truth* can stand in the way of real learning; of really finding the 'truth'.

An ancient story about learning

There is an ancient and famous story about a slave boy who believed that when you doubled the area of a square, it followed that you doubled the length of its sides. He thought to himself:



STOP. THINK.

Read that again. Is this boy's logic correct? If not, what's wrong with his understanding of space? How would you, as a teacher, correct his thinking?

This reasoning seemed obvious to the boy. He couldn't see that he was wrong. In fact, as far as he was concerned, he was absolutely right, and stated the fact boldly and confidently. As his teacher said at the time, the boy did not know, but he *thought* that he knew. Because he *believed* he was right, he could not see that he was wrong.

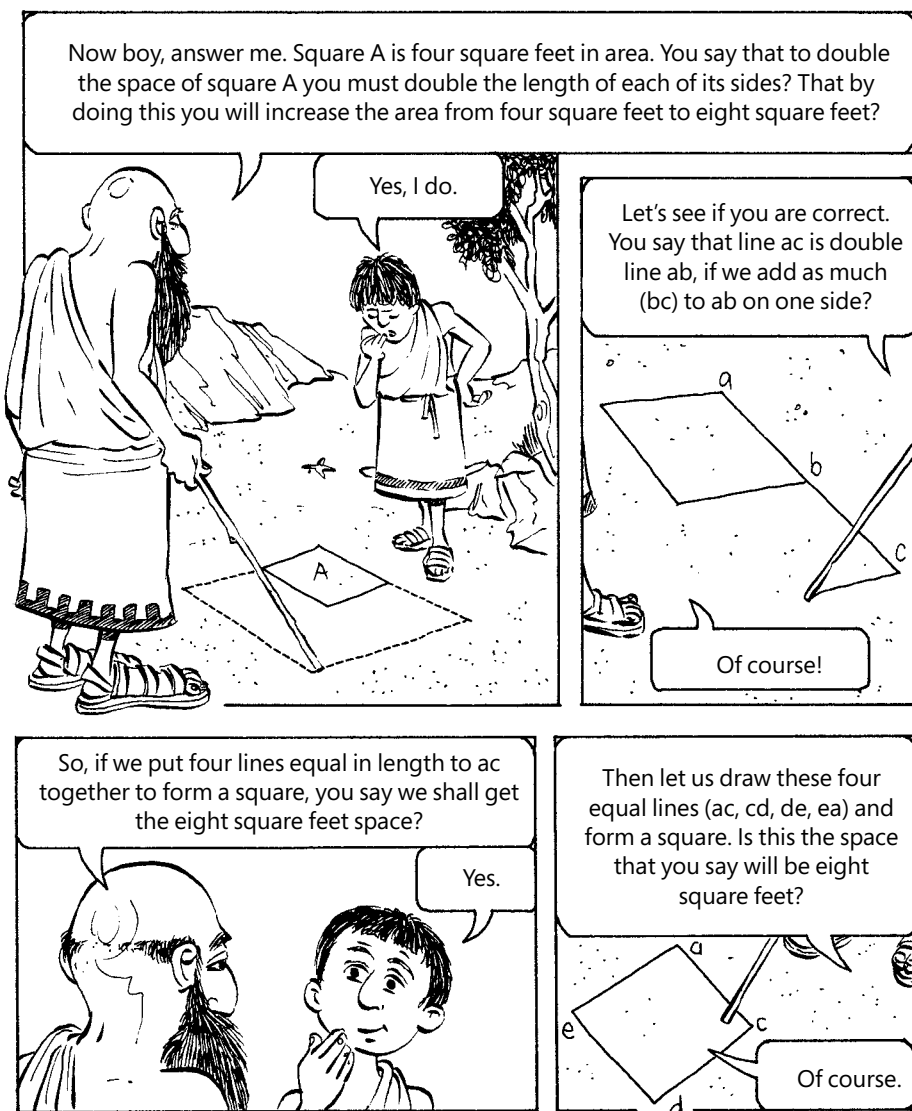
In order to correct his thinking this teacher, the famous Greek philosopher Socrates, asked the boy a series of questions about the two squares. By doing this he led the boy to contradict himself. Suddenly, as he tried to answer the questions, the boy realized that his answers didn't make sense. He suddenly saw that he had been wrong all along. This is sometimes called an 'Aha!' experience. The boy realized that he had not understood and did not know after all, and he felt really uneasy. Socrates called this feeling 'perplexity'.

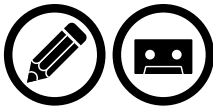
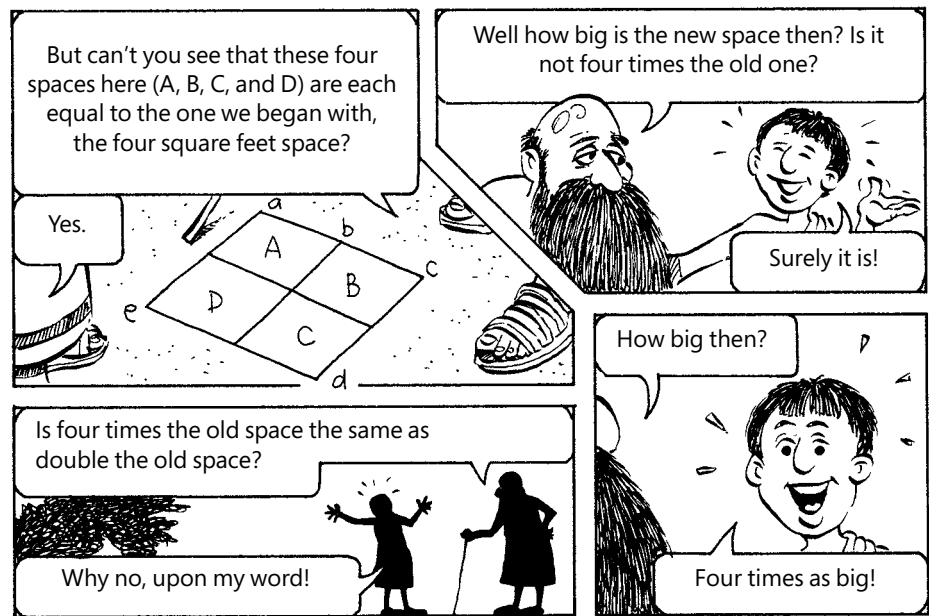
Let's look in on Socrates' teaching. Read through this cartoon.



Take some time to reflect on the issue being raised here.

This story/cartoon is adapted from Plato, 'The Meno' in *The Great Dialogues of Plato* (New York, Plume, 1956), pp. 45–46.





Spend about 25 minutes on this activity. When you have finished the activity, consider discussing your ideas with other teachers before you continue reading.



Week 2 begins.

ACTIVITY 2

- 1 Find and listen to Part 1 of the audiotape. After the introduction there is a 'South-Africanized' version of the Socrates dialogue.
 - a First, listen carefully to the important points we make about how you should learn.
 - b Then, directly after the music, listen to the teaching dialogue between 'Socrates' and a 'learner'.
- 2 As you listen pay particular attention to the questions the teacher asks.
 - a What does the teacher do to help the learner to understand?
 - b What does this story teach us about teaching and learning?

What does Socrates teach us about learning?

At first, the boy *thought* that he knew how long the sides of square B were. He was satisfied and *complacent* in his state of ignorance: there was no reason for him to investigate further or to think more deeply. Socrates knew this, and asked him questions that broke his complacency by making him feel perplexed, confused, and uncertain. The boy began doubting his initial beliefs. He now knew that he did not know, and so began *searching for new understanding*. He was aware that he had misunderstood things and that he now had a problem to solve. He was no longer complacent.

Socrates believed that the learner was now much wiser than before, even though he did not yet grasp the correct *understanding* (he knew that the area was four times as large but did not yet understand *why*). Without his complacency, the boy was better off and much stronger as a learner. Now he would *want* to know, and would *search actively* for knowledge. As Socrates said, 'He will find out by seeking along with me, while I do nothing but ask questions.'

Socrates went on to help the boy discover *mental pathways* (new ways of thinking about the problem) he could use to learn about the relationship between the sides of a square and its area. He did this by asking him further questions about the lines and spaces of the square, and about diagonals that could be drawn in the square.

What role should learners play?

What you have just read is an example of a successful learning and teaching event, but the success is the result of the learner and the teacher being prepared to play particular roles. The boy – the learner – has to think about the problem **actively**:

- He guesses and by so doing reveals his understanding (or misunderstanding) of the problem.
- He makes mistakes and is prepared and encouraged to make mistakes.
- He then corrects them in the light of new information or feedback.
- He is prepared to listen to Socrates and learn from his teacher's understanding, which is different from his own.
- He realizes the contradictions between his existing knowledge and the formal knowledge that others – like Socrates – have of geometry.

By being prepared to enter the learning situation with this kind of attitude, the boy is able to actively come to know something that he did not know before.

What role should teachers play?

Much of this couldn't have happened, however, without a good teacher and good teaching. Let's have a look at the kind of role that Socrates – the teacher – plays. He **deliberately teaches** the boy new knowledge:

- He questions the boy and then identifies the mistakes that the boy is making.
- He is able to pinpoint what the boy needs to know and do in order to correct his mistakes **because he knows more about geometry than the boy**.
- He frames this new knowledge in a way that the boy can understand it and be challenged by it; he teaches well!
- He designs an **activity** which will allow the boy to engage in, and come to understand, the new knowledge and correct his own mistakes. He doesn't simply tell the boy why he is wrong.
- He **guides** and, where necessary, **provokes** the boy through this activity. This ensures that the learner is interested and engaged, and doesn't become too confused.

Another way of thinking about this famous event is to say that Socrates introduced the boy to a **system of thinking** (about geometry) and questioned him about the squares using the **language** and **conceptual tools of this discipline**.

By answering the questions, the boy engaged in a new way of thinking about the square, and eventually completed the 'Aha!' experience. He arrived at a new understanding by participating with Socrates in the activity of questioning even that which seemed obvious. He learnt to see a problem in geometry differently and correctly, and in the end, he knew and understood the principle of how to calculate how much longer the sides of square B were than those of square A.

Most importantly, he would now be able to apply this understanding to new problems independently.

Don't worry if you are not absolutely sure what we mean by 'system of thinking', or 'conceptual tools of this discipline'. These ideas are central to this module and we will teach you more about them as we move through the sections.

The learning paradox

The most interesting question that this story of a boy learning geometry provokes, is one that has troubled psychologists and educators for a long time. It is a question that every teacher asks in some form or another about every learner, every day in a classroom:

Think carefully about the boy. In his initial state, he did not realize that his understanding was incorrect. He therefore **did not realize that he needed to learn** anything.



How can learners come to know something that they do not already know?

He saw no need to learn, and *had no desire whatsoever to learn*. In fact, his misunderstanding, because it was so strongly and confidently held, probably acted as an obstacle to further learning. The fact that he 'knew' meant that he did not seek any further knowledge about the subject.

This problem is often called the *learning paradox* and is very important in teaching. The paradox suggests that:

- If we *know something*, then we don't look any further; we don't feel a need to see whether there is something more to know. In other words, we don't feel motivated to learn because we think we have already learnt.
- Yet, if we *don't know something*, we also don't feel motivated to learn! Why? Well, because we don't know what we need to know, or need to look for. We don't know that there is anything more to learn. And even if we did seek to learn, we would not know when we had found what we looking for (because we didn't know what it was when we started).

This may sound a little confusing at the moment. But this is the tricky problem that confronts teachers over and over again in their classrooms. We will come back to it again and again in this module.

How do teachers deal with this paradox?

The *learning* paradox also translates into a paradox of *teaching*:

By 'paradox' we mean a state of affairs that is at first glance contradictory, but which on closer examination, reveals an underlying truth. The *learning paradox* is such a statement. Kierkegaard described it in this way in *Philosophical Fragments* (Princeton University Press, 1987): 'A person cannot possibly seek what he knows, and, just as impossibly, he cannot seek what he does not know, for what he knows, he cannot seek, since he knows it, and what he does not know he cannot seek, because, after all, he does not even know what he is supposed to seek.' Later, when you listen to your audiotape, you will hear a number of people refer to it.



How is it possible to teach learners something that they do not already know?

The story of the boy learning geometry shows us very well what an understanding of this paradox can reveal about learning, particularly the kind of learning that happens at school.

Socrates had to find a way of getting the boy to understand that, in fact, he *did not know the answer* to the geometrical problem, although he *believed he did*. Then, he somehow had to provide the boy with the necessary learning resources for his understanding to change. In other words, he had to find a way of motivating the boy to move from the *known* to the *unknown*.

As the teacher, Socrates was responsible for ensuring that some kind of **activity** happened which would make it possible for the boy to learn something new. Sometimes learners encounter the unknown with confusion and puzzlement (perplexity) when they recognize that they do not understand it at all. Often, however, they may think that they do understand it – just as the boy thought that he understood the geometry of the area of a square.

In either case, the learner is **unable to use his or her previous understanding** in order to act in solving the problem:

- In the first case, the learner knows that his or her previous understanding is inadequate and doesn't know what to do.
- In the second case, the sense of understanding means that the learner will act inappropriately and be unable to solve the problem correctly.

This is the learning paradox – how can someone learn something new or different either if they feel totally lost, as if they know nothing at all, or if they feel certain that they understand things perfectly? This paradox cannot be resolved by focusing on **understanding** alone.

Rather, the key to learning lies in action.

This is a very important principle for you to understand: in order for children to learn, they must engage in some kind of activity that provides pathways for them to move from the known to the unknown. In the Reader, you will find an article by Craig on page 85 entitled 'Education for all'. In it, Craig expresses this principle as follows:

'For someone to learn, she must first act, in order to discover the limits of her knowledge and the demands of the task, before she can be explicitly taught about the task and ways of engaging it appropriately and successfully.'

Two kinds of learning activity

How will the learner know what kind of action to engage in? There are two important sources of activity:

- The learner herself will spontaneously act to make sense of the world. People are naturally active, curious beings. Although these actions may sometimes be based on misunderstandings, new information from objects and events in the world in response to her actions may cause her to reflect on and change her understanding.
- A teacher or more experienced person may create opportunities for action that will take the individual beyond her own spontaneous activities and in the process, allow her to experience things in a new way.

Both of these sources of action are important for changing old understandings and learning new things. This module will explore both to explain how the **active construction of learning** is possible.

“
In order for children to learn, they must engage in some kind of activity that provides pathways for them to move from the known to the unknown.
 ”

The module's key themes

The central themes that you will find running through the whole module arise from this discussion of the learning paradox. We proceed from the insight that activities involving both *self-generated action and engagement with the knowledge of others* are necessary for learning to occur. Throughout, we emphasize that learning is only possible through action.

Section	Key theme
Section Two	We discuss the spontaneous mental action by which people create connections between ideas using their previous knowledge to understand new information. We also explore the active strategies of guessing, questioning, and imagining as ways to move from the known to the unknown.
Section Three	We identify particular kinds of <i>unknown</i> that characterize the formal schooling context and demand new and different kinds of learning actions.
Section Four	We explore the important role of reading in learning. Through reading we gain access to the knowledge of others (and in particular, disciplinary knowledge) which is probably the most important function of school learning.
Section Five	We explain how teachers can guide and direct learners' actions to effect new understandings.
Section Six	We explore different ways that important theorists have explained the learning process.

Our understanding of learning

This module takes a broadly *constructivist* approach to teaching and learning. Earlier theories of learning tended to view learners as rather passive recipients of knowledge, but contemporary constructivist theories emphasize the active engagement of both learners and teachers. We revisit some of the earlier ideas in the module and redescribe them in theoretical terms. We also make suggestions as to how you as a teacher can use theories of learning.

These ideas about learning having to do with acts of understanding are contentious. Ideas about teaching and learning have changed a lot in the past fifty years. In the context of schools, there has been a shift from the idea that good teaching is like banking (depositing knowledge in the learner in the same way as money is deposited in the bank) to the idea that teaching and learning are active *processes* of making meaning.

The passive learner

If you spoke to education department officials and theorists of learning around the world before the 1950s, you would probably have been told that children learn by having knowledge *given* to them. They would have argued about *how* this knowledge is given. Some would have said that it is given to the learner 'from inside' by different kinds of intelligence and aptitudes that children inherit at birth. Others would have said that knowledge is given to the child by 'inputs from outside', by the influence that the environment has on children's upbringings. But they would not have argued very much about the 'fact' that knowledge is *given* to children.

The reason for this general level of agreement is that we are, to a greater or lesser extent, teachers, learners, and thinkers within the dominant spirit of our times. The debate about learning and teaching that raged up to the end of the 1950s tended to be formulated as the 'nature-nurture debate'.

NATURE - vs - NURTURE



'Nature': Knowledge is given to us from inside. Learning happens when the machine of our mind gets going, when we practise and perfect our innate talents.

'Nurture': Knowledge is given to us from outside. Learning happens when the environment impacts upon us and changes our conduct, when we accumulate experiences.

In education theory, the 'nature' perspective (the belief in the power of innate ideas to determine our learning) was in its time very influential in shaping the schooling system as we know it. The power of the intelligence testing movement is one example. Let's face it, we all find it very hard to shake off the belief that the people who did better than us at school were **born** with a higher IQ than us, no matter how much we are told that IQ tests are culturally and academically biased! As teachers, it is difficult to shake off the belief that some children are **born** more intelligent than others.

The 'nurture' perspective has also been extremely influential. One thing that it has produced is a very narrow focus on the **objectives** of the teaching-learning situation. It has led to a system of teaching where learning objectives (or outcomes) are defined beforehand, and where teachers teach towards the achievement of this final set of predetermined skills, knowledge, attitudes, and values by the end of a particular period of time. Behaviourists, for example, talk of the shaping of 'terminal behaviours' by the careful management of reinforcement systems. The teaching-learning process is recast as a series of technical events concerned with the way that environmental stimuli reinforce learning.

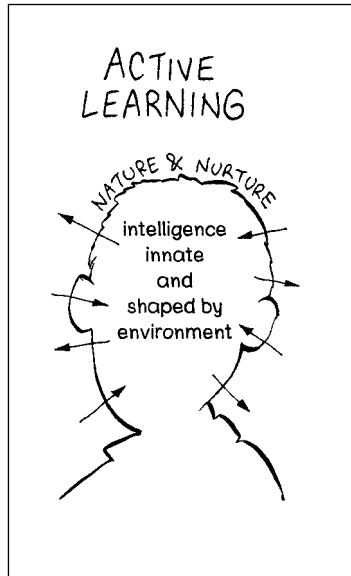
The common assumptions within the nature-nurture dispute have been very influential in education. Up to at least the middle of the twentieth century, teachers and education officials tended to share a view of the learners as **passive** or **static**. Whether knowledge came from inside or outside the child was not considered as important as the underlying idea that the **child passively received knowledge**.

The active learner

In the 1960s and 1970s, a revolution took place around the world in the way in which we think about teaching and learning. Its essence was a shift away from the idea that knowledge is simply **given** to children in favour of the idea that children **create** knowledge. No longer were children to be thought of as passive recipients of knowledge, but rather as **active constructors** of their own knowledge through their interaction with the world and society around them. In order to construct knowledge learners must **both**:

- develop their own novel ways of knowing;
- acquire existing human knowledge (language, cultural wisdom, technical skills, school disciplines etc.).

In other words, learners **construct** (develop their own novel ways of knowing) and **reconstruct** (acquire existing human knowledge) knowledge in order to develop their own **systems of knowing**. The child-centred or learner-centred education movement came about as a result of this emphasis on the way that the learner constructs his or her own knowledge. This revolution in thinking about learning is known as the 'constructivist revolution', and it left the rigid, old nature-nurture debate behind.



Importantly, the concept of activity was central to this whole shift in understanding learning. In the school context, broadly speaking, constructivism came to emphasize the activity of both learners and teachers in the school as they constructed and reconstructed knowledge.

This shift in thinking does not mean that we should throw out all the ideas about learning or methods of teaching associated with the earlier theories. In fact, new ideas often build on older ideas. Think about a child constructing knowledge. The act of constructing new knowledge is an interaction between what is given by **nature** (inborn capacity) and what is given by **nurture** (experience). The learner creates new meanings out of this interaction. This module approaches learning with both imperatives – nature and nurture – in mind:

- In Section Two we set out to understand the immense **inborn capacity** (nature) of individuals to learn. We argue that all of us are **naturally** curious and acquire new understandings by acting on the world in peculiarly human ways. This is a powerful force for learning in the classroom.
- In Sections Three, Four, and Five we explore how schools, books, and teachers can make learning possible. Everything in the world – events, contexts, objects, and people – functions either to produce (nurture) or block learning.

However, learning should not be dissolved into **either** the inside **or** the outside of the learner. In this module we try to develop the principle of the **active construction** of learning out of both human nature and the world.

Outcomes-based education

1.4

Many people have argued that constructivism informs the learning and teaching approaches advocated with the introduction of outcomes-based education (OBE) in South Africa. We'd probably argue that this statement is a *half-truth!*

There is an emphasis on the learner-centred construction of knowledge, skills, values, and attitudes within OBE. A Department of Education document makes the link in the following way:

'One of the characteristics of transformational OBE in South Africa is that it is learner-centred. Learner-centred approaches place emphasis on constructivism. Each of us constructs our own meaning and learning about issues, problems, and topics.'

This quotation is from Department of Education, *Curriculum 2005: Towards a Theoretical Framework* (Pretoria, 2000) p. 11.

We aren't as sure that there is *necessarily* a connection between constructivism and OBE. We also think that many of the advocates of OBE understand constructivism differently to us. But the debate about educational change in South Africa asks us to consider them together. In this module, we will do this.

At the end of each section we include a commentary on OBE and its implementation in South Africa. These discussions will highlight current debates about OBE, and explore it in relation to issues about learning covered in the section. Travel this journey with us. See whether you can work out which parts of the current half-truths in the debate about outcomes-based learning in South Africa are true and which are false!

We end Section One with audiotape 'visits' to a number of learning experts. Many of the ideas raised earlier about the nature of learning – like the learning paradox – are discussed.

ACTIVITY 3

- 1 Find and listen to Part 1 of the audiotape from *What is Learning?*.
- 2 Answer these questions when you have finished listening:
 - a OBE advocates often argue that learning should be fun and relevant. Do Moll and Lazarus agree? In no more than ten lines, explain what they say about the nature of learning. (They may disagree with one another. If they do, note their differences.)
 - b What are the crucial differences between school (formal) learning and everyday (experiential) learning, according to these speakers?
 - c The speakers suggest that content learning and conceptual learning are two important parts of formal learning. What are these? How do they differ from one another?
 - d Miller says that the idea that we can proceed from the known to the unknown, or from the familiar to the unfamiliar, isn't possible when teaching new conceptual knowledge. Why is this so? What does he suggest we do instead? (Note how his argument links back to the work we did on the learning paradox earlier.)
 - e Write down one idea you have learnt in this section which you can apply in a classroom. Explain how you would use it.



You may find it difficult to concentrate throughout this long sixteen-minute excerpt. It is divided into three subsections: First, Ian Moll and Sandy Lazarus, who are both educational psychologists, talk about learning. Second, Gill Adler, a mathematics educator, distinguishes between two types of learning – content learning and conceptual learning. She uses mathematics examples to make her points. Finally, Ronny Miller, another educational psychologist, discusses the different types of learning and then explains why one type – conceptual learning – is so difficult. To improve your concentration, read the questions you have to answer *before* you begin listening. Make notes as you listen. Attempt to relate this conversation to ideas about learning raised earlier in this section. Spend at least 45 minutes on this activity.

1.5

Conclusion and key learning points



We develop national curriculums, ambitious corporate training programmes, complex schooling systems. We wish to cause learning, to take charge of it, direct it, accelerate it, demand it, or even simply stop getting in the way of it. ...

If we proceed without reflecting on our assumptions about the nature of learning, we run an increasing risk that our conceptions will have misleading ramifications. In a world that is becoming more complexly interconnected at an accelerating pace, concerns about learning are certainly justified. But perhaps more than learning itself, it is our conception of learning that needs urgent attention ...



This quotation is from E. Wenger, *Communities of Practice: Learning, Meaning and Identity* (Cambridge University Press, 1998), p. 9.

Reassessing the half-truths

This is the point at which you should review what you have learnt (or not learnt) in this section. Begin by turning back to the half-truth activity on page 10. Dwyer argued that the following statements are half-truths about learning:

- Learning is the act of acquiring and retaining information.
- Learning is a somewhat unnatural activity.
- Learning is best undertaken in a structured, orderly manner.
- Learning is tied to instruction.
- Learning is the same for everyone.
- Teachers are the experts.

Now that you have learnt a whole lot more than you knew when you began this module, have your views about what is true and false about these statements changed?

Key learning points

- We all learn all the time; we are 'sense-making' machines.
- However, everyday (spontaneous) learning and school (formal) learning are different in important ways, and we need both.
- School learning requires that we break away from our concrete and familiar worlds. In order to do this we need to learn to think abstractly and conceptually.
- Learning isn't always fun. The best learning asks us to move out of our comfort zones – it is difficult, and it will cause some level of anxiety.
- One of the biggest hindrances to new learning is what we already know. Although this is sometimes a useful starting point for new learning, it can also block new understandings.
- In order to help learners 'unlearn' we need to create some conflict or contradiction in their thinking. We can't talk new ideas or understandings into people's heads; we can only provoke them through some form of action or activity.
- Conceptual learning is particularly difficult. Once one understands the **concept** of, for instance, a game, then the teaching of new **content**, like the rules of cricket, is relatively easy (one can link it back to the idea of a game). But if a learner has never played any kind of game and needs to learn this concept, then one can't draw on the familiar to teach it!
- Learning is paradoxical: those who **know** aren't challenged to learn further while those who **don't know** don't know that there is more to learn.

We will come back to many of these ideas, especially the last two, throughout the module but particularly in the next section.