13

DAVID KOLB

EXPERIENTIAL LEARNING THEORY

LEARNING OUTCOMES

Having read this chapter you should be able to:

- understand Kolb's Experiential Learning Theory and his notion of learning styles
- recognise and appreciate each of the four stages of his Experiential Learning Theory
- use and develop his notions of learning through experience in your practice
- critically evaluate his theories.

KEY WORDS

experiential learning; concrete experience; abstract conceptualisation; reflective observation; active experimentation; diverger; assimilator; converger; accommodator

INTRODUCTION

American psychologist and educational theorist David Kolb is probably best known for his research on **experiential learning** and learning styles. Building on the theories of Dewey, Lewin and Piaget and influenced by Carl Jung and Carl Rogers, Kolb looked to ways in which learning in informal situations could be optimised and identified those mechanisms by which experience could be transformed into knowledge, skills and attitudes (Dennick, 2008).

While Kolb's work is underpinned by theories of cognitive development, his links to adult learning are clearly identifiable and the application of his theory sits most comfortably in the professional working environment – the learner either shadowing a more experienced colleague or being engaged in some form of educational programme while in work. Kolb saw learning as 'the process whereby knowledge is created through the transformation of experience' (Kolb, 1984: 38), and in this respect he saw learning as proceeding through **concrete experiences** which were then transformed into **abstract conceptualisation** through the processes of **reflective observation** and **active experimentation** (Dennick, 2008).

Kolb is most renowned for his learning cycle, which Elkjaer describes as being 'one of the most cited in educational research' (2009: 84). This may in part be due to its holistic, integrative perspective on learning which combines experience, perception, cognition and behaviour (Kolb, 1984), rather than one which focuses on either behaviourist or cognitive theories of learning. Within his learning cycle there are two key aspects: firstly, the concrete or immediate experiences which are used to create meaning from a learning experience, and secondly, this is followed by feedback from these experiences which forms the basis for goal-directed actions and subsequent evaluations.

Kolb's experiential learning cycle also formed the basis for his identification of four different learning styles which he saw as being fundamental to the grasping and transforming of experiences, as typified in his learning cycle. Each of his learning styles was characterised by particular strengths in two of the four major steps in the learning cycle. Kolb postulated that the learning experience could be maximised if both learner and facilitator made a conscious effort to play to an individual's unique learning style. However, even at this early stage of the chapter a word of caution is required regarding his experiential theory and, in particular, his learning styles. These concepts have attracted considerable criticism for being, among other reasons, too simplistic, problematic and even misleading; these criticisms are explored in greater depth further on in the chapter (Huddleston and Unwin, 2002: McLay et al., 2010). Nevertheless, it is the application of such theories, predominantly in higher and further education institutions, which may explain why Kolb's model has influenced many of the discussions around the practice of adult education.

DAVID KOLB, THE PERSON

David Kolb was born in 1939 and at the time of writing he holds the position of Emeritus Professor of Organizational Behavior in the Weatherhead School of Management at Case Western Reserve University, Cleveland, Ohio. Kolb has had a long and illustrious academic career. He gained an undergraduate degree in psychology from Knox College in 1961, which was followed by a PhD in social psychology from Harvard University in 1967.

Kolb's work has predominantly centred on his Experiential Learning Theory, which he first began to develop in the 1970s. This was later expanded to incorporate his Learning Style Inventory. Kolb undertook extensive research into experiential learning, culminating in his 1984 book, *Experiential Learning: Experience as the source of learning and development*. Here he set out the model for his Experiential Learning Theory (ELT) and introduced his Learning Style Inventory (LSI). Through the LSI he explained how learning can be categorised into four individual learning styles: diverging, assimilating, converging and accommodating. He expressed the notion that each individual had an orientation towards one of these learning styles, and by identifying a particular learning style it was possible to tailor learning to meet the needs of each individual.

Unlike for many of his contemporaries, Kolb's career has been situated in academia where he has held a number of high-profile positions, including Assistant Professor of Organizational Psychology and Management at the Massachusetts Institute of Technology (1965–70), Senior Associate, Development Research Associates (1966–80) and Visiting Professor at the London Graduate School of Business Studies in 1971. He joined the faculty of Case Western Reserve University as Professor of Organizational Behavior in 1976, where he remains today, as noted above, serving as Emeritus Professor of Organizational Behavior. Alongside his current role, Kolb is also the founder of Experience Based Learning Systems Inc. (EBLS), a company which continues to develop research into experiential learning with a focus on self-directed change and learning, achievement motivation, professional development and leadership and management development. He also holds the position of learning partner at the Institute for Experiential Learning, which is 'a global service organization committed to empowering individuals, teams and organizations to reach their full potential through experiential learning' (Institute for Experiential Learning, 2021). The institute promotes Kolb's experiential learning cycle in a range of sectors, including education, professional development and research.

Kolb's work has received much recognition through the awarding of four honorary degrees between the years 1984 and 1996, alongside numerous awards and citations, the most recent being the Distinguished Paper Award of the Decision Sciences Institute in 2011. He was also the recipient of the Educational Pioneers of the Year Award from the National Society for Experiential Education (with Alice Kolb). His list of publications, including books and monographs, journal articles, interviews and tests, and

educational materials, is vast, and spans from the 1960s to the present day. This is a testament to his passion for his subject and dedication to the field of adult learning.

Kolb continues to research in the field of experiential learning and is dedicated to the concept of learning through experience, which he sees as being one of the most important processes by which learning occurs. His current work examines some of the different aspects of experiential learning, specifically those related to cultural determinants of learning styles, learning flexibility and experiential learning in conversation. His most recent works (with J.A. Simy and A. Kolb) reflect these aspects of experiential learning and include 'Are there cultural differences in learning styles?' (Simy and Kolb, 2008), 'Learning styles and learning spaces: Enhancing experiential learning in higher education' (Kolb and Kolb, 2005) and 'The learning way: Meta-cognitive aspects of experiential learning' (Kolb and Kolb, 2008).

Kolb co-founded EBLS Inc. in 1981, the website he now uses to disseminate much of his recent research into experiential learning. The company goal as stated on the website is to 'provide ongoing quality research and practice on experiential learning' (http://learningfromexperience.com) and its mission reflects a desire to share good practice and provide a forum by which research can be disseminated and advanced. In the Foreword to Kolb's book *Experiential Learning*, Bennis writes:

> Kolb's achievement is providing the missing link between theory and practice, between the abstract generalization and the concrete instance, between the affective and cognitive domains. By this BIG achievement he demonstrates conclusively – and is the first to do so – that learning is a social process based on carefully cultivated experience which challenges every precept and concept of what nowadays passes as teaching. (1984: ix)

It is perhaps this practical application of Kolb's theory which makes his work so accessible to the field of higher and further education today.

KOLB'S EXPERIENTIAL LEARNING THEORY AND LEARNING STYLE INVENTORY

Kolb's theory of experiential learning determines that people learn best when they are engaged in first-hand experiences, which can later be reflected on through thinking about the details of the experience alongside the feelings and perceptions which emerged during the experience (Harkin et al., 2001). Working alongside his colleague Roger Fry, Kolb theorised that learning occurred by way of progression through a four-stage cycle, which he referred to as the Lewinian experiential model, a name derived from his use of Lewin's work on group dynamics, action research and organisational behaviour. Dennick (2008) points out that the terms used by Kolb to describe the phases of the learning cycle are indeed taken directly from Lewin's work on action research.

Within the cycle developed by Kolb and Fry, learning is seen as an integrated process in which each stage is 'mutually supportive of and feeding into the next' (Harkin et al., 2001: 40). Kolb suggests that it is possible to begin the cycle at any stage, although for effective learning to proceed it is necessary to follow the cycle through its natural progression with no stage of the cycle being sufficient on its own. The learner, then, needs to be involved in the experience but must follow this with some form of reflection, for example as an observer analysing the experience and creating their own concepts based on their observations. In addition, the individual must also have the capacity to move between the interpretation of data collected from their experience, and the testing of theories and subsequent adaptations made as a result of reflections. It is only through this process that the learner might gain new experiences, perspectives, understanding and knowledge (Harkin et al., 2001). Kolb and Fry see the process as a continuous spiral, since on completion of one cycle the learner will then move on to the next stage of the process, being informed by the preceding stage, and so learning develops.

As seen in Figure 13.1, Kolb's learning cycle is constructed through four stages or learning modes, subdivided into the two dialectically related modes of grasping experiences: concrete experience (CE) and abstract conceptualisation (AC), alongside a further two dialectically related modes of transforming experiences: reflective observation (RO) and active experimentation (AE) (Segers and Van der Haar, 2011). According to Kolb and Fry (1975) learners should possess all four of these abilities in order for

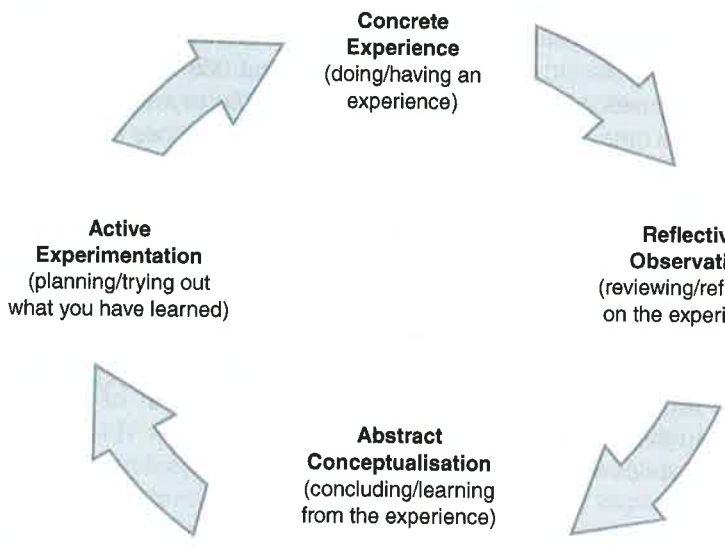

Figure 13.1 Kolb's learning cycle

Source: Kolb, D.A. (©1984) *Experiential Learning: Experience as the source of learning and development* (First Edition). Printed and electronically reproduced by permission of Pearson Education Inc., New York.

effective learning to take place; however, since few people can become experts in all four modes, the tendency is for learners to develop a particular strength or orientation to one mode when engaged in a learning experience.

As indicated in Figure 13.1, the immediate or concrete experiences (CE) which a person has forms the basis for subsequent observations and reflections (RO). Following, the learner can form general principles from the effect of the actions, which then allows new implications for actions to be drawn. Once assimilated and distilled, abstract concepts (AC) are formed. In the final stage of the cycle, implications can be tested in a range of circumstances leading to the creation of new experiences (AE) (Segers and Van der Haar, 2011).

The abilities identified by Kolb and Fry can be seen as polar opposites, thereby requiring learners to choose which set of learning abilities will best fit the situation or their particular needs. People who favour the CE ability tend to grasp experiences by taking in new information through hands-on experience, relying on their senses and feelings. Segers and Van der Haar (2011) refer to this approach as sensational. On the other hand, those favouring the AC ability perceive and grasp information through more symbolic representation, thinking, analysing and planning rather than relying on feelings. Similarly, when applying this to the horizontal continua, a learner who tends to the AE ability will likely transform or process a new experience through immediate action, while those with RO ability tend to observe others and reflect on what they have seen before acting.

Segers and Van der Haar (2011) observe that it is not possible to use the modes of grasping and transforming simultaneously, that is it is not possible to engage in activities which are at opposite ends of the continuum. According to Kolb, learners will then have a propensity to either feeling versus thinking (CE versus AC) or watching versus doing (RO versus AE), and since it is not possible to watch and do or think and feel at the same time, it is necessary for the learner to choose one over the other, therefore categorising the learner into one domain over the other.

Segers and Van der Haar (2011) suggest that the development of a preferred way of choosing can be influenced by 'individual genetics, past life experiences and how they [the learner] perceive the demands of the present environment'; they go on to observe that there is a need to 'resolve the conflict between concrete and abstract, and between active and reflective in some patterned, characteristic ways' (2011: 57). Kolb and Fry (1975) referred to these patterned ways as 'learning styles', of which they identified four distinct styles, typified by a combination of preferred styles based on the four-stage learning cycle.

These learning styles are then defined as:

- **Diverger** – combining CE and RO: Kolb and Fry (1975) saw this learning style as one whereby concrete situations should be viewed from many different angles; they suggest that divergers work best in brainstorming situations in which a range of ideas can be generated.

- **Assimilator** – combining AC and RO: Kolb and Kolb (2005) suggest that assimilators are able to understand a wide range of information and are adept at condensing this information and putting it into a concise and logical format. Assimilators favour ideas and abstract concepts over a more person-centred approach.
- **Converger** – combining AC and AE: people who fit into the converging learning style enjoy problem solving, and decision making tends to be based around finding practical solutions to problem solving. Like the assimilator, those who demonstrate this learning style prefer technical tasks and problem solving rather than engaging in social interactions.
- **Accommodator** – combining CE and AE: the accommodator prefers a hands-on approach, and in contrast to the converger and assimilator they rely on social networks and interactions for information.

Kolb's theory suggests that people will naturally form preferences for a particular learning style, largely because these have proved successful in past experiences. As a result, a particular approach to learning will naturally be adopted. However, Kolb and Fry also saw benefits to a learner in being able to identify their own learning style, which led to the development of the Learning Style Inventory (LSI). Kolb (1976) referred to this as a self-descriptive inventory which measures different learning styles along the process continuum and enables an individual to determine their own learning preference. The original LSI has been adapted and developed by Kolb and Fry and has also been used as a basis for work by Honey and Mumford (1992) in order for individuals to gain self-knowledge about their individual learning style, as well as a means by which facilitators and educators might design curriculum content and programmes to better meet the needs of their learners.

Moreover, Kolb proposed that by recognising the specific qualities of learners through their individual learning type it was possible to tailor learning in order to play to an individual's strengths. In the 'Applying Kolb in the classroom' section of this chapter we will explore further how the defining qualities of each learning style might impact on how a learner engages in study or how the teacher might help to facilitate learning.

LINKS WITH OTHER THEORISTS

As we have already noted, Kolb's work on ELT evolved from the ideas of Dewey, Lewin and Piaget; indeed he called his model the experiential learning cycle to stress the links with these three, and to highlight the importance experience played in the learning process (Jarvis et al., 2003). He was further inspired by Carl Jung and Carl Rogers. Dewey felt that true learning was a democratic and dynamic process which was based upon experiences. He argued that learners should not be inactive observers but fully involved in the 'process of active engagement [which] allows a learner to

become immersed in experience, an undertaking that can form the basis of reflection' (Harkin et al., 2001: 39). Similar to Dewey, Lewin also believed in the importance of experience in successful learning, in particular the remodelling of experiences based on the feelings and reflections that transpired from experiences. Indeed, as we have seen, Kolb's learning cycle was based upon Lewin's ideas. These ideas were developed from his research on group work where learners not only encountered differences of opinion but also formed a collaborative and problem-solving consensus with others. These ideas form the basis of the small-group teaching activities now used in schools, colleges and universities (Dennick, 2008).

Piaget also had an impact on Kolb's theories, especially ELT. Piaget argued that knowledge is constructed through interaction with others and with the environment. His cognitive theory, which is comparable to Kolb's concepts, entails learners gaining new information which then allows them to develop and reshape their current knowledge in order that it can be re-formed and applied to new situations – an ongoing process of cognitive development. Even though Piaget's work is mostly concerned with the stages of children's cognitive development, his ideas are also of significance for adults since his theory states that adults have reached an established stage in their intellectual development (Armitage et al., 1999).

Many of Kolb's ideas have emerged from his work with groups, which include their dynamics and organisation. This can be closely aligned with Lave and Wenger's notion of situated learning which concerns learners as active participants within a community of practice. There is a direct connection with Kolb's ELT, although Lave and Wenger's ideas are even more uncompromising, as Armitage offers:

> Here is experiential learning in its most direct form, or rather learning-as-experience since Lave and Wenger would quarrel with the notion of learning as a discrete activity occurring independently of other activities. (2003: 37)

Teaching methods employed in education generally now involve interaction and the use of learners' experience advocated by Kolb. These ideas are also very evident in the thinking of eminent adult education thinkers: Malcolm Knowles, Paulo Freire and Jack Mezirow. Knowles promoted the notion that teachers should start the learning process from the basis of the adult's existing experience and knowledge, while Freire argued against the traditional view of teaching, which he termed the 'banking concept' where education is considered as a means of 'depositing' knowledge on a passive learner. As such, Freire, like Kolb, called for a more interactive and 'problem-posing' process of teaching based on the needs and experiences of the learners. Jack Mezirow, on the other hand, saw the process of reflection as a means by which personal change could be seen in individual students; this he defined as transformative learning. Moreover, like Kolb, Mezirow stressed the importance of critical reflections as key to these transformations, with teachers and mentors supporting the reflective process and encouraging students to develop their own points of view and ideas.

Reflection as an instrument of cognitive and professional development is also a valuable part of Schön's reflection-in-action and reflection-on-action. Gibbs also emphasises reflection following group work and problem-solving activities. In addition, Carl Rogers highlights the significance of learners being able to construct meaning from their learning through their feelings and reflection from experience.

Kolb's LSI, which emerged from his notion of a learning cycle, has a number of links with others who promote the idea of separate and preferred learning styles. Kolb was influenced by Carl Jung's psychotherapeutic work that found individuals had inherent ways of behaving and learning: some preferred to be active (extrovert) and others more thoughtful and reflective (introvert). This in turn was further developed and used in the Myers–Briggs psychometric test. A closer connection with Kolb's LSI is Howard Gardner's concept of multiple intelligences (MI). Although these differ from Kolb's, Gardner contested that successful teaching should involve all the intelligences identified and not just the learner's preferred intelligence (Williams, 2004). As we have discovered, Kolb's LSI directly informed Honey and Mumford's (1992) learning styles questionnaire, although a fundamental difference between the two ideas of learning styles is that Honey and Mumford saw the learning style as an objective product of what individuals do, while for Kolb it was a 'holistic interpretation, which also counts subjective elements of thoughts, feelings and perceptions of experience' (Harkin et al., 2001: 42). These differences will be evident later when considering the application of Kolb's LSI.

CRITIQUING KOLB

Gould writes that 'Kolb's model of experiential learning has been the subject of considerable criticism' (2009: 103). Most of these criticisms appear to be levelled at the LSI, which Kolb himself acknowledges has its limitations, predominantly due to the fact that results are based solely on the learner's view of themself with some of the terminology being open to interpretation (Kelly, 1997). In accord with this, Tennant (1997) also questions the validity of the four learning styles. He suggests that the close ties between the learning styles and the experiential learning cycle require all situations to be applicable to the experiential learning model, and he posits that this is not always the case, arguing that there are alternatives, such as information assimilation and memorisation, which Kolb has failed to acknowledge.

A report by Coffield et al. (2004) questions whether learning styles should be used at all, and while this related to a wider critique of learning style theory we cannot discount Kolb's model in this criticism which questions the reliability and validity of the LSI. Coffield et al. (2004) also suggest that the notion of a learning cycle is seriously flawed, with no tangible evidence of its pedagogical impact being found. This is supported by Jarvis (1987) and Tennant (1997), who suggest that the initial research base into the application of the model was too small to form generalisations. There is

also a danger of assuming that a learning style is a fixed entity which remains with the learner, and then the learner becomes 'labelled' as such for the rest of their studies. This has the further potential to adversely affect an individual's learning development, as the method used to identify their particular learning style 'may be specific to culture, gender or age and can lead to the incorrect assessment of learners from different backgrounds' (McLay et al., 2010: 96). Furthermore, Sharp and Murphy provide a thought-provoking observation regarding the juxtaposition between the impact of learning style and performance:

> The difficulty of establishing whether an individual's preferred learning style affects performance or an individual's performance affects learning style should not be overlooked. (Sharp and Murphy, 2006: 44)

Segers and Van der Haar (2011) elaborate further on the challenges presented by assuming a predetermined perspective on the way people learn, and propose that research from Saljo (1979) and Entwistle et al. (2001) determines that the way people learn is more strategic than simply applying inherent styles. They believe that learning styles are more context driven, with people adopting a different approach depending on what they are doing and the context in which their work is set.

A further criticism of Kolb's experiential learning cycle relates to the scant regard for cultural experiences and conditions, which in today's multicultural society must be seen as a limitation. The inventory has been used with a limited range of cultures and could therefore be seen to be underpinned by Western assumptions. Tennant (1997), citing Anderson (1988), suggests this could be an oversight, since cognitive and communication styles are often culturally based. Jarvis et al. argue that the experiential learning cycle 'is fundamentally weak in that it is over-simple, it also implies that experience is cognitive and omits both the physical and the emotional' (2003: 58).

Jarvis (1987) suggests that Kolb fails to fully explore the nature of knowledge in any depth, and given that the experiential learning cycle seeks to explore the relationships between learning and knowledge, this could then prove to be problematic. Jarvis (1987) also criticises Kolb's failure to connect with debates around the acquisition of knowledge and suggests that Kolb fails to grasp the different ways of knowing. Interestingly, Jarvis sees Kolb's emphasis as on the production of knowledge, with a focus on the individual mind, rather than through situated learning (Lave and Wenger, 1991). In this respect Kolb's vision of experiential learning should be viewed with caution. Moreover, it is argued that there is further research needed for ELT and in particular learning styles. As such, and in light of the previous criticisms, it is advocated that educators and educational establishments are judicious in the over-dependence of these models in practice (McLay et al., 2010).

Nevertheless, despite such criticisms we should not discount the practical application of Kolb's work, since, as Tennant points out:

> ... the model provides an excellent framework for planning teaching and learning activities and it can be usefully employed as a guide for understanding learning difficulties, vocational counselling, academic advising and so on. (1997: 92)

APPLYING KOLB IN THE CLASSROOM

So, it is with caution that we suggest that the experiential learning cycle and learning styles can be employed by teachers to appraise the types of learning and teaching undertaken by students so that they can then enhance the quality of provision in the future. This is achieved in the first place by teachers knowing their group of learners and understanding their learning preferences. This understanding can then be used to offer opportunities for learning where the students feel at ease and have a sense of achievement in a way that fits their learning preference. The next step is to discover their less preferred ways of learning and give them opportunities to strengthen these through each stage in the experiential learning cycle. Finally, and most importantly, teachers should consider the influence their own preferred learning style has on their students and from that start to reflect on ways that will further improve the quality of the students' learning. This in turn should result in the teacher creating and using classroom activities and resources which take into account all stages of the experiential learning cycle and avoid teaching which concentrates on one particular learning style over others. This can be achieved by the teacher promoting reflection after activities and by encouraging and supporting students to try new experiences – through each stage of the learning cycle (Harkin et al., 2001).

The general idea of experiential learning is not new, but Kolb's theory has allowed teachers to create learning experiences for their students which are sequential, progressively developmental and give opportunities for reflection on their experience. Using the experiential learning cycle does not require a radical change in learning and teaching methods. However, because teachers are encouraging students to try new activities and then to reflect and honestly acknowledge their errors, the teaching does require a thoughtful and receptive approach. What makes the application of ELT even more interesting is that teachers themselves, through attempting new methods (some of which may result in emotional outcomes) and reflecting on these experiences, are also developing their own learning and professional practice (Petty, 1998).

To explore specific examples of how Kolb's ideas can be put into practice it is fitting that we follow the sequence of each stage of the learning cycle, then consider how learners learn best in relation to Kolb's LSI. In the first stage, CE, the activity should where possible be a real-life experience, such as carrying out an experiment or workshop task. Although they are of less value, other non-real-life activities could be used, such as case studies, role play, projects, simulation and demonstration. It is a period for trying and testing out new ideas. The experiences should be challenging in their nature and the use of social interaction and discussion encouraged.

Activities could be cognitive, but they could also involve the development of practical skills. Preferably, the actual concrete experience used should be as a result of the active experimentation stage of the previous learning cycle (Petty, 1998).

The RO stage is where students undertake an objective and honest appraisal of their CE. This can also include their feelings during their experience. At first, this will need to be done with the help of the teacher, but the aim is that the student will eventually be able to complete this on their own. It is anticipated that this in turn will lead to honest attempts at self-assessment, rather than always relying on the teacher's evaluation of their efforts. The goal at this stage is to trust the students to self-appraise their experiences. This in effect will help create reflective practitioners who will have the confidence to learn, and continue to learn, from their experiences. The promotion of self-assessment can take a number of forms. Asking open questions following activities allows the students to take ownership of their own feelings. Encouraging them to construct a self-assessment checklist before activities begin is a way of stimulating reflection and ensuring they remain on task. Using diaries to record their reflections directly following experiences is particularly helpful in reflecting on emotional events and experiences. The recording of reflections is an important aspect of the RO stage where portfolios could also be used. What is considered paramount at this stage is the need for a trusting relationship between the students and teacher, as the students will need to have the confidence to be open about what they think they did well, and what did not go so well, during the experience. Therefore, it is argued that this stage should be free from any assessment processes with the students (Petty, 1998; Dennick, 2008).

The purpose of the AC stage is for the students to link their concrete experience with the theory. It is at this stage where, after reflection, students endeavour to connect their own experiences to the experiences of others. This can involve talking over their experiences and their resultant reflections (what went well and not so well) with teachers or other students, or referring to textbooks and other associated literature. This stage offers the students a chance to test their ever-increasing skills, knowledge and feelings with others. This in turn may convince them to alter the way they think about what they have experienced. Equally, this stage may just validate their ideas about the theory. This then leads to the fourth and final stage of the learning cycle: AE. Students have reflected on their CE and tried to correlate this with theory. From this they now need to make sense of the process and ask themselves how they will improve next time they begin the learning cycle at the CE stage. This can be helped by feedback and discussions with teachers, but students should take ownership of this stage by again using written documents, such as action plans, portfolios, targets and goals for future development (Petty, 1998; Dennick, 2008).

There are four distinct learning styles relating to the stages of the learning cycle. Although it is imperative that students experience all four learning styles for a deep and meaningful learning experience, Table 13.1 sets out a description for each learning style as it relates to the learning experience.

Table 13.1 Practical application of learning styles

Learning style	Description
Accommodator	Learns best by doing things; from short here-and-now tasks; in carrying out plans/experiments; through trial and error/taking risks; with other people.
Diverger	Learns best when standing back, listening and observing; from collecting information and thinking it through, through different perspectives and grasping the bigger picture; by sharing and discussing ideas with others; through searching for meaning; with others.
Assimilator	Learns best when reviewing things in terms of systems, concepts, models, theories; when absorbing ideas and providing integrated explanations/theories; solving problems; by data collection; planning and organising work; through critical evaluation; working alone.
Converger	Learns best when integrating theory and practice; in the workshop or laboratory using skills/learning and testing theories and applying common sense; with clear goals and rewards; with things rather than people.

(Adapted from Harkin et al., 2001: 42)

OVERVIEW OF APPLICATION: KOLB'S IDEAS FOR CLASSROOM PRACTICE

Despite the criticism of Kolb's work, particularly in relation to his LSI, there are many aspects of his theories which can be applied in certain learning situations. This is especially the case for the further and higher education sectors and in adult learning. Key to the successful application of ELT is building a trusting relationship between student and teacher, promoting reflection, valuing students' previous experiences, and giving them the opportunity of experiencing 'real-life' learning. Following are some suggestions as to the practical application of Kolb's work.

Applying the four stages of learning

- Concrete experience - allow learners to actively engage in a task, either new or reimagined.
- Reflective observation - give the learner time to step back and reflect on the task, encourage questions and provide opportunities for discussion with peers. Allow the learner to reflect on any discrepancies between understanding and experience.
- Abstract conceptualisation - make sense of the events through drawing on prior knowledge and familiar ideas; compare responses with peers. Encourage learner to classify concepts and draw conclusions, which illustrates the shift from reflective observations to abstract conceptualisation.

(Continued)

- Active experimentation – return to active participation in a task but utilising the conclusions from the previous task to demonstrate a development in thought. Encourage learners to make predictions and develop plans to show how their new knowledge has informed thinking.

Addressing the learning styles

- Divergers
  - Provide opportunities for group activities and collaborative projects
  - Brainstorming activities
  - Hands-on, opportunities to explore
  - Practical demonstrations of how things work.
- Assimilators
  - Provide opportunities to design their own experiments
  - Ensure they are given the time to see tasks through to completion
  - Independent exercises and activities
  - Use of instructional video or audio.
- Convergers
  - Provide problem-solving activities
  - Opportunity to work independently
  - Computer-based and interactive activities.
- Accommodators
  - Use of trial and error – seek to find answers for themselves and independent discovery
  - Actively engage them in activities
  - Ask 'what if' or 'why not' questions.

SUMMARY

David Kolb has had a significant influence on the thinking behind educational practices over the last half century. His ideas on experiential learning and individual learning styles have evolved from theories of the eminent educationalists and psychologists Dewey, Lewin, Piaget, Jung and Rogers. Furthermore, his ideas have been influential in developing the concepts of more contemporary thinkers, such as Knowles, Lave and Wenger. The main driver of his work has been his enthusiasm for adult learning and his

experiential learning cycle has had an important role to play in the way teaching and learning are approached in the further and higher education sectors.

Central to Kolb's standpoint on experiential learning is that students learn best when they are actually engaged in first-hand experiences, which they then reflect upon, along with the feelings and emotions which came with this experience (Harkin et al., 2001). From this premise he, along with Fry, created the four-stage sequential learning cycle, encompassing CE, RO, AC and AE. What was important for Kolb was that it did not matter at which stage the student started on this learning cycle as long as the cycle was completed. He identified that each of these stages related to a particular preferred way (style) of learning by individual students as they engaged in the learning experience. These learning styles embodied in his LSI are diverger, assimilator, converger and accommodator.

Kolb's concepts have generated a considerable amount of criticism, especially his ideas on learning styles. Negative comments regarding his LSI focus on the narrowness of his research sample alongside criticism that there is little evidence of the learning cycle having an impact on teaching and learning practices (Jarvis, 1987; Tennant, 1997; Coffield et al., 2004). Furthermore, ELT has attracted criticism because as a concept it is too simple, as well as suggesting that experience is cognitive while ignoring emotional and physical aspects (Jarvis et al., 2003). Nevertheless, his work provides a positive structure which is embedded by reflection and the opportunity for both students and teachers to continually develop their knowledge, skills and attitudes.

GLOSSARY OF TERMS

Abstract conceptualisation

The third part of Kolb's four-stage learning cycle. Having concrete experience and the opportunity for reflective observation the learner then refines these experiences, reflections and observations in the light of their understanding of associated theory, producing new ideas and plans.

Accommodator

One of four learning styles proposed by Kolb. Learners develop best by working with others in doing things, by carrying out plans and learning from their mistakes.

Active experimentation

The final part of Kolb's four-stage learning cycle following abstract conceptualisation, which creates new experiences which are once again reflected upon, and the learning cycle is repeated over and over.

Assimilator

One of four learning styles proposed by Kolb. Learners develop best when working on their own by reviewing things in terms of systems, concepts, models and theories. They absorb ideas and provide their own concepts/theories. They also solve problems through data collection, planning and organising work, and critical evaluation.

Concrete experience

The first part of Kolb's four-stage learning cycle. The learner needs to be actively involved in the learning experience.

Converger

One of four learning styles proposed by Kolb. Learning develops best when working with things rather than people, and by integrating theory and practice in a workshop or laboratory environment, using skills/learning, testing theories and applying common sense as well as working to clear goals.

Diverger

One of four learning styles proposed by Kolb. Learning develops best through working and sharing ideas and solutions with others, by listening and observing to understand the bigger picture.

Experiential learning

The concept of learning through practical experience rather than being taught by the teacher, with a stress on the significance of practice over theory. This process is reinforced by learners reflecting on their practice and the feelings and insights they developed as part of the experience.

Reflective observation

The second part of Kolb's four-stage learning cycle. Once a learner has been involved in a concrete experience it gives them the foundation for reflective observations of their experience.

FURTHER READING

Kirschner, P.A. and Hendrick, C. (2020) *How Learning Happens: Seminal works in educational psychology and what they mean in practice*. Abingdon: Routledge.

Part VI, Chapter 26, 'Did you hear the one about the kinaesthetic learner …?', draws from a research paper which looks specifically at the challenges associated with educating from the premise that the learner knows best. The article seeks to disprove the notion that learning is improved when specific learning styles are addressed, drawing attention to Kolb's learning styles among others.

Kolb, D. and Kolb, A. (2017) *The Experiential Educator: Principles and practice of experiential learning*. Upper Saddle River, NJ: Experienced Based Learning Systems.

A practical text showing how the principles of experiential learning can be applied in a range of settings. The book introduces the reader to the philosophy behind experiential learning drawing from research and practice in the field.

Moon, J. (1999) *Reflection in Learning and Professional Development*. London: Kogan Page.

This is a comprehensive and useful book with detailed links between reflection and professional practice. Chapter 3 – 'Reflection in experiential learning' – explores the wider application of Kolb's ELT, including action research.

Schön, D. (1983) *The Reflective Practitioner: How professionals think in practice*. New York: Basic Books.

This is an important and practical text which emphasises the significance of reflection in developing professional practice and introduces the reader to Schön's concepts of reflection-on-action and reflection-in-action.

REFERENCES

Armitage, A. (2003) In defence of vocationalism. In: Lea, J., Hayes, D., Armitage, A., Lomas, L. and Markless, S. (eds) *Working in Post-Compulsory Education*. Maidenhead: Open University Press.

Armitage, A., Bryant, R., Dunhill, R., Hammersley, M., Hayes, D., Hudson, A. and Lawes, S. (1999) *Teaching and Training in Post-Compulsory Education*. Buckingham: Open University Press.

Bennis, W. (1984) Foreword. In: Kolb, D.A. (ed.) *Experiential Learning: Experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice Hall.

Coffield, F., Moseley, D., Hall, E. and Ecclestone, K. (2004) *Should We Be Using Learning Styles? What research says about the practice*. London: Learning Skills and Research Centre. Available from: www.itslifejimbutnotasweknowit.org.uk/files/LSRC_LearningStyles.pdf [accessed 10 March 2018].

Dennick, R. (2008) Theories of learning: Constructive experience. In: Matheson, D. (ed.) *An Introduction to the Study of Education*. Abingdon: Routledge.

Elkjaer, B. (2009) Pragmatism: A learning theory for the future. In: Illeris, K. (ed.) *Contemporary Theories of Learning: Learning theorists ... in their own words*. Abingdon: Routledge.

Entwistle, N., McCune, V. and Walker, P. (2001) Conceptions, styles, and approaches within higher education: Analytical abstractions and everyday experience. In: Sternberg, R.J. and Zhang, L.-f. (eds) *Perspectives on Thinking, Learning, and Cognitive Styles*. Mahwah, NJ: Lawrence Erlbaum.

Gould, J. (2009) *Learning Theory and Classroom Practice in the Lifelong Learning Sector*. Exeter: Learning Matters.

Harkin, J., Turner, G. and Dawn, T. (2001) *Teaching Young Adults*. Abingdon: Routledge.

Honey, P. and Mumford, A. (1992) *The Manual of Learning Styles*. Maidenhead: Peter Honey.

Huddleston, P. and Unwin, L. (2002) *Teaching and Learning in Further Education* (Second Edition). London: RoutledgeFalmer.

Institute for Experiential Learning (2021) *About IfEL*. Available from: https://experientiallearninginstitute.org/about/ [accessed 19 July 2021].

Jarvis, P. (1987) *Adult Learning in the Social Context*. London: Croom Helm.
Jarvis, P., Holford, J. and Griffin, C. (2003) *The Theory and Practice of Learning* (Second Edition). London: Routledge.
Kelly, C. (1997) David Kolb: The theory of experiential learning and ESL. *The Internet TESL Journal, 3*, 9. Available from: http://iteslj.org/Articles/Kelly-Experiential/ [accessed 19 October 2021].
Kolb, A. and Kolb, D.A. (2005) Learning styles and learning spaces: Enhancing experiential learning in higher education. *Academy of Management Learning and Education, 4*(2), 193–212.
Kolb, A. and Kolb, D.A. (2008) The learning way: Meta-cognitive aspects of experiential learning. *Simulation and Gaming*. Available from: https://journals.sagepub.com/doi/10.1177/1046878108325713 [accessed 19 October 2021]
Kolb, D.A. (1976) *The Learning Style Inventory: Technical manual*. Boston, MA: McBer & Co.
Kolb, D.A. (1984) *Experiential Learning: Experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice Hall.
Kolb, D.A. and Fry, R.E. (1975) Toward an applied theory of experiential learning. In: Cooper, C. (ed.) *Theories of Group Processes*. New York: Wiley.
Lave, J. and Wenger, E. (1991) *Situated Learning: Legitimate peripheral participation*. Cambridge: Cambridge University Press.
McLay, M., Mycroft, L., Noel, P., Orr, K., Thompson, R., Tummons, J. and Weatherby, J. (2010) Learning and learners. In: Avis, J., Fisher, R. and Thompson, R. (eds) *Teaching in Lifelong Learning*. Maidenhead: Open University Press.
Petty, G. (1998) *Teaching Today* (Second Edition). Cheltenham: Nelson Thornes.
Saljo, R. (1979) Learning about learning. *Higher Education, 8*(4), 443–51.
Segers, M. and Van der Haar, S. (2011) The experiential learning theory: D. Kolb and D. Boud. In: Dochy, F., Gijbels, D., Segers, M. and Van den Bossche, P., *Theories of Learning for the Workplace: Building blocks for training and professional development programmes*. Abingdon: Routledge.
Sharp, J. and Murphy, B. (2006) The mystery of learning. In: Sharp, J., Ward, S. and Hankin, L. (eds) *Education Studies: An issues-based approach*. Exeter: Learning Matters.
Simy, J.A. and Kolb, D.A. (2008) Are there cultural differences in learning styles? *International Journal of Cultural Relations, 33*(1), 69–85.
Tennant, M. (1997) *Psychology and Adult Learning*. London: Routledge.
Williams, J. (2004) *Great Minds: Education's most influential philosophers* (A Times Education Supplement Essential Guide).