Chapter 2

Learning: Basic Concepts and Principles in Museum Context

The previous chapter adopted a theoretical approach and discussed various aspects related to the development of children. It focussed on the definition, meaning, principles, domains and contexts of development which serve as the basis for the present study. The current chapter continues the theoretical approach and elaborates the concept of 'learning' which is an integral aspect of development. It begins with the definition of learning, explains it's meaning using perspectives given by some prominent authors, and proceeds to discuss the principles and domains of learning. It then discusses learning from two perspectives: learning as a means to develop various abilities, and learning as a social activity. This is succeeded by the learning outcomes and the chapter ends with Constructivism—the latest approach in learning. The discussions in the chapter are supported by relevant museum examples and their implications are presented in museum context.

LEARNING AND DEVELOPMENT

Learning and development are interlinked concepts. Development, as discussed in the previous chapter, is a broad concept that includes a number of sub processes: growth, maturation and learning (Gabriel, 1968; Hurlock, 1997; Lefrancois, 2001).

Growth includes physical changes which are observable and arise due to hereditary influences. Maturity also includes physiological changes due to biological forces but these occur at peculiar times and intervals such as crawling, sitting, walking, talking, and puberty. Gabriel (1968: 20) describes these maturational changes as 'ripening of genetic potentials'. The authors (Gabriel, 1968; Hurlock, 1997; Lefrancois, 2001) assert that though these changes are independent of the environment, they are aided by stimulation from it and depend on practice and training. In other words, maturity and learning are related. Learning includes permanent changes in behaviour due to experience, practice and training (Gabriel, 1968; Hurlock, 1997). Development, thus, is an umbrella concept that relies on the processes of growth, maturation and learning.

The relationship between development and learning is also emphasised by NAEYC (2009) which puts equal emphasis on both the concepts and describes twelve principles of learning and development for children under the 'Developmentally Appropriate Practice in Early Childhood Programs'. The principles reflect NAEYC's core knowledge and understanding about how children (from birth through age eight) learn and develop. These principles serve as guidelines for teachers in early childhood centres in USA and are being adopted widely in similar organisations across the world. Some of the relevant principles were discussed earlier in Chapter 1.

LEARNING: MEANING AND NATURE

Learning has held multifarious contentions. While some psychologist believe learning to cause a change in behaviour—Behaviourist perspective, others believed it to be bring a change in cognitive ability—Cognitive

perspective. Woolfolk (2004) remarks that the behavioural psychologists stress on the impact of external events or experiences on the individual, while the cognitive psychologists believe learning to be an internal mental activity that results in changes in the knowledge or cognitive ability of the individual. However, the most recent beliefs about learning expand and build on the principles of these two early schools of thought and rely on the social cognitive views and constructivist approach.

To crystallise our understanding of the term 'learning', some representative definitions given by well-known scholars are analysed here.

R. Murray Thomas (1999: 67) defines learning as a 'process of acquiring knowledge and new behaviours as a result of encounters with the environment'.

Woolfolk (2004: 232) defines learning in a similar manner. According to her learning is a 'process through which experience causes permanent change in knowledge or behavior'.

Mathew H. Olson and B. R. Hergenhahn (2010: 6) present a comprehensive view of learning and define it as 'a relatively permanent change in behaviour or in behaviour potentiality that results from experience and cannot be attributed to temporary body states such as those induced by illness, fatigue or drugs'.

Knud Illeris (2007, quoted in Illeris, 2009: 7) also emphasises on the permanency of change as an outcome of learning and gives the following definition: '*any process that in living organisms leads to permanent*

capacity change and which is not solely due to biological maturation and ageing'.

Gagne´ in his book *'The Conditions of Learning and Theory of Instruction'* (1985: 2) presents a comprehensive view of learning. In his words:

> *Learning is a change in human disposition or capability that persists over a period of time and is not simply ascribable to processes of growth.* The kind of change called learning exhibits itself as a change in behavior . . . The change may be, and often is, an increased capability for some type of performance. It may be an altered disposition of the sort called *attitude* or *interest* or *value.*

From the above definitions it can be inferred that learning is a process as well as an outcome. As a process, it involves engaging in activities, interacting with environment and experiencing something (Thomas, 1999; Woolfolk, 2004; Illeris, 2009). The end product of these processes is also considered learning which implies a change in increased capability and tendencies (Gagne´, 1985; Olson and Hergenhann, 2010). Gagne´ considers this change as increased qualities and abilities that are exhibited in improved performance. The performance can be in various forms such as discussions, summarising, describing, exemplifying, paraphrasing, and interpreting, analysing, critiquing, experimenting, and synthesising, which involve demonstrating an understanding of the learnt concepts. Gagne´ mentions that the learning changes can also be in the form of modification of attitude, interest, or value of the learner. Attitude is a tendency to act in a certain way to a stimulus or a situation; interest is a feeling that makes a person to pay attention, exhibit concern or have curiosity in something;

value signifies worth, usefulness or importance of something. It is certain that the learning changes are qualitative in nature that enhance the potential of an individual to act in any situation.

It is important to note that all changes cannot be considered as learning. As pointed out by Gagne´, learning is not caused due to growth. This means that the occurrence of physical changes must not be mistaken for learning. Physical changes such as increase in height and weight mainly depend on biological forces while learning changes arise due to external sources or influences from the environment. These changes are not even apparent while those brought about by physical growth or maturation are. Moreover, the changes caused by temporary body states such as fatigue, drugs or illness (Olson and Hergenhann, 2010); or biological maturation and ageing (Illeris, 2009), or both, cannot be attributed to learning. Such changes do result in some kinds of momentary alterations in the body but these are not positive in nature and create a transient effect. In fact, they retard the performance of the individual and do not lead to any kind of development.

Gagne´ further explains the permanence of learning. According to him, changes brought about by learning 'persists over a period of time'. This means that the effect of the changes can be either short term or long term. Even if the impact of learning lasts for five minutes, it is believed that learning took place for that particular time. Olson and Hegrehann (2010: 3) describe this aspect of permanency as: 'learning lingers until forgetting takes place over time or until new learning displaces old learning'. Implicitly, the impact of learning continues either till there is a loss of memory, or some new experience occurs that replaces the effect of the old learning.

On the basis of the above discussion, it can be concluded that learning is both a process of change as well an outcome. As a process, activities and experiences become paramount for learning, while as an end product, the result of these reciprocations between the learner and the surroundings are perceived as learning. In either form, learning results in improved behaviour and knowledge or as increased capability, attitude, interest, quality or value. The effect of these changes can be gauged through improved levels of performance. Ultimately, all learning brings a qualitative change in human potential and abilities that contributes to overall development.

PRINCIPLES OF LEARNING

Learning, being an integral aspect of living, has been extensively studied by numerous education psychologists. These experts have given some general principles which offer deeper insights into the process of learning. The principles are also referred as the 'laws of learning'. Edward L. Thorndike (1874–1949), perhaps the greatest learning theorist of all time (Olson and Hergenhahn, 2010: 50) proposes three 'laws of learning': law of readiness, law of exercise, and law of effect. The underlying concepts of these laws coincide with the five principles of learning given by Alvin C. Eurich (1962, quoted in Davies 1971: 21). Eurich summarises these principles in the context of school children but they can be commonly applied to all kinds of learners. His principles are enumerated below and explained under the light of 'laws of learning' given by Thorndike.

1. Whatever a student learns, he must learn for himself – no one can learn for him.

2. Each student learns at his own rate, and, for any age group, the variations in rates of learning are considerable.
3. A student learns more when each step is immediately strengthened or reinforced.
4. Full, rather than partial, mastery of each step makes total learning more meaningful.
5. When given responsibility for his own learning, the student is more highly motivated; he learns and retains more.

Point 1: Whatever a student learns, he must learn for himself – no one can learn for him.

The principle emphasises on the significant role of the learner in the process of learning. It rests on the belief that learning is self-initiated, self-guided and self-motivated process. Thorndike refers to this concept as the 'law of readiness' which means a state of physical, psychological, and emotional preparedness that facilitates learning. This inner preparedness or what Gabriel (1968) and Gagne (1985) define as 'disposition', prepares an individual to act to achieve a predetermined goal. Gabriel (1968: 36) further explains the relationship between learning and disposition: 'children learn more easily and more readily if the teacher creates within them a 'need', an 'interest', a purpose'—if, in other words, a favourable disposition is engendered.' This means that for learning to happen, it is vital that the educator or facilitator motivates the learners by creating an urge, a desire in them, and explains the benefits that can be accrued from learning. The principle also points out to the theory of 'Constructivism', discussed later in the chapter, which prioritises the role of the leaner in constructing knowledge and meaning making in the process of learning.

Point 2: Each student learns at his own rate, and, for any age group, the variations in rates of learning are considerable.

The principle states that the rate and pace of learning of each individual differs considerably. Some learners are slow while others are fast. The differences, as discussed previously under the principles of development, are attributed to both hereditary and environmental factors. Eva L. Essa (1999: 51) refers to the latter group of children as 'gifted children' and defines them as 'children who perform significantly above average in intellectual and creative areas'. Such children, in comparison to the slow learners, are par excellent in performance on several fronts. They catch concepts quickly; possess great linguistic, problem solving, or artistic skills; or may show many other such distinguishing traits. Besides, each individual possesses a unique style of learning. Hence, in a group of children with varying capacities the diversities become more challenging. Gardner's theory of 'Multiple Intelligences' which defines eight unique styles of learning throws light on this aspect and is discussed under the next heading.

Point 3: A student learns more when each step is immediately strengthened or reinforced.

The third principle emphasises on the vital role of 'reinforcement' in learning. Thorndike refers to this principle as the 'law of effect' which means that the connection between a stimulus and a response may be strengthened or weakened due to the consequences of the response. That is, positive or satisfactory consequences of a response may strengthen the connection, or vice versa (Olson and Hergenhahn, 2010). This

strengthening or weakening of the connection between a response and its consequence is called ‘reinforcement’. The Business dictionary, (0000) defines reinforcement in psychology as ‘consequence of a behaviour that increases the chances of the occurrence of the same behaviour. In contrast to feedback (which is almost always external), reinforcement can be both internal (intrinstic) and external (extrinsic)’. In children, the response is likely to be repeated when positive behaviour is likely to be reinforced when rewarded; while the negative behaviour that might involve punishment, may lead to removal of that behaviour. This is also the underpinning philosophy of ‘Behaviourism’ in learning.

Point 4: Full, rather than partial, mastery of each step makes total learning more meaningful.

This principle focuses on mastery of each step involved in learning process for effective and meaningful learning. Woolfolk (2004: 251) refers to this step-by-step learning approach as ‘mastering learning’. She defines it as a ‘teaching approach in which students must learn one unit and pass a test at a specified level before moving to the next unit.’ The approach rests on the assumption that any learner can learn any task or skill, provided the learning environment is conducive. It involves breaking down the task into small achievable steps with clearly defined objectives and criteria for achievement. Further, for each step to be mastered, practice and repetition become essential. Thorndike refers to this principle as the ‘law of exercise’ which states that ‘we learn by doing and forget by not doing’ (Olson and Hergenhahn, 2010: 57). In other words, retention and learning is most when the task is done repeatedly. This eventually leads to mastering the skill. As George E. Hein (1991) points out: ‘It takes time to learn: learning

is not instantaneous'. That is, learning is a cumulative process that blooms through repeated practice, exposure and encouragement.

Point 5: When given responsibility for his own learning, the student is more highly motivated; he learns and retains more.

The last principle reflects the centricity on the learner in the process of learning and emphasises that learners should be allowed to engage in learning and take decisions independently, to motivate them and to enhance the impact of learning. It means that learners enjoy great autonomy and play a crucial role in learning. Falk and Storksdieck (2005: 119) define this learner-centric concept in the context of learning in museums as 'free-choice' learning. They state that learners in museums can 'very selectively pick and choose what they want to learn more about, and these decisions are very strongly influenced by what they already know and are interested in'.

The principles of learning by Eurich and Thorndike's 'laws of learning', given almost half a century ago still find place in the current times. They include Dewey's progressive ideas on education that are widely applied in educational institutes. In the context of museums, the principles reflect the current most constructivist conception of learning, described later in the chapter.

DOMAINS OF LEARNING

All learning happens in three different domains or areas namely: cognitive, affective and psychomotor. A brief description of each of these domains is given here.

Cognitive Domain

Cognition, as elaborated in the previous chapter, deals with the mind and involves all the thought processes such as recalling, memorising, analysing, reasoning, interpreting and synthesising. Learning in this domain aims to cause a shift in the knowledge or thinking capacity of an individual, or create awareness or understanding that assists in getting attuned to the surroundings. However, this acquisition of knowledge happens gradually in a hierarchical manner involving an interlinked sequence of sub processes based on simple to complex approach. This means that most learning begins at the basic level and proceeds to higher levels gradually. Moreover, each level builds on the achievement of the previous level. The most significant educationist to highlight this hierarchical arrangement of thinking processes was Benjamin Bloom, an American Educationist, who has given the theory of 'Bloom's Taxonomy of Learning Objectives' in 1956, which was later revised by other scholars. The various levels of this taxonomy are illustrated in 'Chapter 3: Development of Children: Learning Approaches and Strategies in Museums' under table 3.2 with storytelling as a method of learning in museums.

In museums, like other learning institutions, most of the learning occurs in the cognitive domain. Mostly, the learning experiences centre on imparting facts or information related to the museum collections on various aspects such as history, origin, making, composition, use, or significance of objects. The statistical data included in the case studies under Chapters 4 and 5 of the thesis contains evidences for the highest preference for this domain.

Affective

Affective signifies emotions and feelings. In the words of Lord (2007: 16): 'Learning is primarily affective when it is focused on our feelings about things—when it affects our attitudes, interests, appreciation, beliefs, or values'. He emphasises, in the context of museums that though all learning experiences in museums always focus on cognitive goals, but they all possess some element of affection. For example, an individual who attends or participates in an educational activity will either enjoy it or not enjoy it, like it or dislike it, or feel satisfied or dissatisfied. Since affections exist in all kinds of learning experiences, Lord (2007: 16–17) describes the nature of museum learning as 'primarily affective' and 'transformative'. He thus defines museum learning as a 'transformative, affective experience in which we develop new attitudes, interests, appreciation, beliefs, or values in an informal, voluntary context'.

Just like Bloom gave a classification of learning objectives in the cognitive domain, David Krathwohl, Benjamin Bloom, and B. B. Masia (1964) have given taxonomy of affective domain (Davies 1971: 74–80; Woolfolk, 2004: 470). It is also hierarchical with increasing levels of complexity and

each level incorporating the achievements at the previous level. It primarily focuses on instilling and subsequent strengthening of feelings whose presence and degree of intensity can affect in shaping 'attitudes, interests or values' and ultimately behaviour and performance (Gagne, 1985). The taxonomy includes five levels of affective objectives: receiving, responding, valuing, organisation and characterisation. All learners can be at different levels at different times. When at the lowest level of 'receiving', learners merely receive stimuli and passively attend to it. Through encouragement, they gradually start feeling motivated, willingly respond to stimuli and thus feel satisfied with their performance. Further, at the third level, they begin to internalise the contents or ideas received, sense their worthiness, accept them but might respond voluntarily to the same stimuli as they may now try and seek new ways and means of participation in learning. At the penultimate level of 'organisation', learners organise and conceptualise the values to which they were responsive. Finally, at the highest level of 'characterisation', these values are evaluated and integrated into learners' own system. Affective learning reaches 'zenith' as by now the learners are highly motivated, participate wholeheartedly in learning and have learnt to conceptualise new knowledge or ideas considering the emotions of others and one's own self.

Psychomotor

The word psychomotor consists of two words: 'psycho and motor'. The Merriam-Webster's Ninth Collegiate dictionary (1988: 951) defines the word as 'of or relating to motor action directly proceeding from mental activity'. Therefore learning in this domain relates to both the mind as well as acquiring of manual or physical skills to perform any coordinated

physical tasks. Davies (1971: 74) reflects on the significance of this domain and states that 'psychomotor objectives involve muscular and motor skills, or manipulation of materials or objects, or some activity which requires neuromuscular coordination'. Learning to operate equipment or doing an activity that involves neuromuscular coordination is an example of working in the psychomotor domain. This implies that there is both a mental activity as well as skill learning involved. Learning is cognitive when the learner assimilates and accommodates the steps involved mentally; it is motor where there is a coordinated physical movement to perform the task.

Simpson (1969, cited in Davies, 1971: 74; 1972, cited in Woolfolk, 2004: 470) has given taxonomy of the psychomotor domain. The taxonomy includes seven categories of psychomotor objectives beginning from the basic lowest level, and proceeds to the highest level of complexity in skill learning. These objectives mainly focus on acquiring of physical or manual skills that can be applied to any task involving psychomotor activity (fine and gross motor activities). The levels of the taxonomy are: perception, set, guided response, mechanism, complex overt response, adaptation and origination. Here the lowest level is 'perception' which involves the learner getting prepared physically as well as mentally to learn the skill. Following this readiness, the learner makes an attempt to learn the skill through imitation, repetition, practice and trial-and-error. Gradually the task can be performed skilfully with heightened confidence, precision and accuracy. Lastly, a final point in learning comes when the learner adapts to the developed skills, utilises them in novel contexts and is empowered to create new skills.

Learning can occur in all the three domains simultaneously and no domain can be completely isolated from the other. Therefore, understanding of interrelatedness of the three domains becomes essential so that activities along with their underlying objectives can be planned in the context of the specific domain. This can be illustrated by a hypothetical activity 'Make Your own Papier-mâché Mask'. In this activity, children make face masks using paper pulp. As the learners perform the hands-on task, they develop skills of: preparing paper pulp, converting a 2D drawing into a 3D form, imitating different facial expressions, sculpting a papier-mâché mask, moulding pulp into the facial features, and using hands and fingers to work physically with the material. While working in the psychomotor domain to develop skills involved in mask making, learning also takes place simultaneously in cognitive and affective domains. Cognitively—learners develop the abilities to think, imagine, observe, understand, recall, demonstrate, critique, and synthesise; affectively—the activity fosters expressing emotions, creativity, enjoyment and satisfaction, which may lead to change of attitudes, emotions and values. Thus an activity can have multiple goals and can work in all the three domains with focus on one. Museum educators should combine elements of the three domains to make learning experiences more effective.

LEARNING ABILITIES

Intelligence is generally defined as the inherent ability of an individual to learn about, learn from, understand and interact with its surroundings including people or society at large and the situations that are encountered. This general ability can include a number of specific behavioural characteristics:

- Adaptability to new environment or to changes in current environment
- Capacity for knowledge and ability to acquire new knowledge
- Ability to reason and think in abstract terms
- Ability to comprehend relationships
- Ability to evaluate and judge
- Capacity for original and productive thinking
- Ability to apply knowledge appropriately

Thus intelligence can be perceived to be a combination of a wide range of attributes. Howard Earl Gardner, an American developmental psychologist proposes a view of intelligence in his theory of 'Multiple Intelligences' (Howard Gardner, 1993; Northern Illinois University, n.d.; Scholastic Ltd., April 2003; Berk, 2013). Gardner uses biological as well as cultural research and formulates a list of seven intelligences, suggesting that all individuals possess multiple intelligences or mental abilities in varying degrees. Gardner later added an eighth intelligence 'Naturalist Intelligence' which is also included in the chapter. He also mentions about the possibility of a ninth intelligence 'Existential Intelligence' which is likely to be added to the theory. This intelligence is being developed and checked for its practical applications, and is hence not discussed here. Gardner defines intelligence as '*the capacity to solve problems or to fashion products that are valued in one or more cultural setting'* (Gardner and Hatch, 1989: 5). His eight intelligences are discussed below. The implications of these intelligences are explained with Eilean Hooper Greenhill's account of the theory in her book *'Museums and their Visitors'* (1994) in which she presents the applicability of the theory in museums through examples. The description also includes a few examples from first-

hand museum visits which were made during the course of the present study.

1. LOGICAL-MATHEMATICAL INTELLIGENCE: This intelligence consists of abilities of scientific and logical thinking which comprise: analysing and solving problems rapidly, constructing solutions to problems before they are articulated; using numbers to perform mathematical calculations; detecting patterns in thought, visual and numerical associations; understanding relationships between cause and effect to achieve a tangible result. Gardner (1993: 20) states that this type of intelligence along with linguistic skills forms the basis of most IQ tests, is heavily investigated and is also well documented by Piaget and other psychologists.

The intelligence includes skills of abstract and concrete thinking, solving puzzles and complex numerical operations, performing computer programmes, conducting scientific experiments, systematic and organised way of living, and the ability to analyse behaviour of people. Such individuals can perform the roles of mathematicians, bankers, computer programmers, engineers, statisticians, researchers, arbitrators and analysts.

In museum context, Greenhill (1994: 150) states that use of computer programmes and some interactive exhibits are based on logical-mathematical intelligence. She cites examples of Geffrye Museum, London which produced ‘two booklets in 1991 entitled ‘Maths at the Geffrye and Science at the Geffrye’ which show teachers how to use the English Domestic interiors in the development of numeracy and problem-solving’.

Similarly, the Victoria and Albert Museum, London conducts a number of learning programmes for school children based on their Islamic tiles collection that teach children mathematical concepts based on the geometrical patterns and arrangements on these tiles. Greenhill mentions that such initiatives in museums were taken after the introduction of the National Curriculum in 1988.

2. VERBAL-LINGUISTIC INTELLIGENCE: This intelligence involves possessing the ability to read, write and communicate verbally, and to effectively manipulate language to express oneself theoretically and poetically, or to use language as a means to remember information. People with strong verbal-linguistic intelligence are good at reading and creative writing, playing word games and puzzles, writing poetry and stories, debating and comprehension. They can perform the roles of writers, poets, speakers, linguists, copywriters, journalists, voice-over artists, teachers and professors, TV and radio presenters and translators.

Greenhill (1994: 148) cites examples of writings and poetry by children in museums post their visits. *'This Fitz Me Fine'*, a book of poetry by children on Fitzwilliam Museum, Cambridge, is one such example. She suggests that museums can use strategies of clever marketing, public prize giving, and invite adult literacy class or students studying literature and language to write on selective museum objects or their visits.

One recent example is *'Hello Hubmarine'* a booklet of short stories co-produced by visitors and members of the museum staff of Museum and Art Gallery, Derby Museums. The stories in the booklet are based on six specimens from the natural history collection of the museum. They are

created by the ‘Creative Writing Group’, a group of poets and writers who are regular visitors to the museum (figure 2.1).

Figure 2.1: *‘Hello Hubmarine’* a booklet of short stories, Museum and Art Gallery (MAG), Derby Museums

3. VISUAL-SPATIAL INTELLIGENCE: This means being able to ‘perceive the visual-spacial world accurately, to perform transformations on those perceptions, and to re-create aspects of visual experience in the absence of relevant stimuli’ (Berk, 2013: 325). The intelligence includes the abilities of strong imagination and creativity. It is represented through skills of: good visual memory, knowledge of colours, shapes, patterns and textures, designing, sculpting, drawing and painting, reading maps to navigate places, solving jigsaw puzzles, and interior designing. Individuals holding these skills are suitable to perform roles of: artists, architects, navigators, cartographers, photographers, graphic designers, inventors, sculptors, city-planners and landscape architects.

Greenhill (1994: 150) suggests that museums can adopt a number of ways to develop the spacial ability and knowledge accessibility of visitors such as ‘making reconstructions of historic sites or houses, working from collections to evolve a personal statement in the form of a sculpture [or illustration], producing map of sites with marked features and giving special information on these features’.

In general, several museums across the world conduct a variety of activities to promote this intelligence. The National Gallery of Modern Art (NGMA), New Delhi conducts the ‘Sunday Art Classes’ for people of all ages. Their sessions include: painting, creative painting, model drawing and sketching, and sketching and painting with still life and composition drawing (figures: 2.2 a, 2.2 b, and 2.2 c).

Figure 2.2 a: ‘Painting’ session (Sunday Art Classes), NGMA, New Delhi

Figure 2.2 b: 'Model Drawing and Sketching' session (Sunday Art Classes), NGMA, New Delhi

Figure 2.2 c: 'Sketching and Painting with Still Life and Composition Drawing' session, (Sunday Art Classes), NGMA, New Delhi

The Tate Gallery, London, has 'Start Guide' on the theme of 'colours'. The guide suggests ways of exploring art works displayed in the museum

galleries. It shares ideas and questions on colour, recommends artworks which employ them in unique ways, and gives few general ideas and questions that can be used to explore any artwork on display. The theme guide mainly aims to promote colour sensitivity and knowledge of contemporary art in visitors.

4. MUSICAL INTELLIGENCE: This encompasses the ability to compose musical pitches, tones and rhythms; appreciate the aesthetic qualities in musical expressions, recognise tones and sounds, and comprehend the relation between music and emotions. It includes skills of: playing or listening to musical instruments and sensitivity to catch nuances in pitches and tones in musical compositions. Individuals possessing this intelligence can perform the role of music composers, singers, voice coaches, DJs, environment and noise analysts, music performers, instrumentalists, and acoustic engineers.

Greenhill cites the example of the Horniman Museum in South London which has a Ugandan Lyre, a musical instrument that was collected as a part of the handling collection which visitors can play. Besides, the museum also has a ‘music room’ in their musical instruments gallery which contains a range of instruments. Here children and families can enjoy playing theme, have fun and create their own musical compositions (figure: 2.3).

Figure 2.3: Children creating musical compositions in the 'Music room', Horniman Museum and Gardens, London

5. BODILY-KINESTHETIC INTELLIGENCE: This intelligence involves the ability to make skilful use of one's mental abilities to coordinate the body movements such as 'eye and body coordination, manual dexterity, and physical ability and balance' (Northern Illinois University, n.d.). Individuals possessing this intelligence learn well by way of 'doing', enjoy physical activity and possess a dynamic personality. They portray skills of: dancing, body balancing, role playing or miming, and mimicking. They can perform the roles of dancers, instrumentalists, theatre actors, craftspeople, surgeons, athletes, physical therapists, and sign-language interpreters.

According to Greenhill, museums offer a range of activities that promote bodily-kinesthetic intelligence such as various art and craft demonstrations or workshops. She gives the example of Victoria and Albert Museum,

London, where children visiting the Indian Art Galleries were asked to adopt the posture of gods and goddesses.

6. INTERPERSONAL INTELLIGENCE: Interpersonal intelligence is the ability to understand and discern the feelings, behaviour and intentions of others. Gardner (1993: 23) explains it as, 'a core capacity to notice distinctions among others; in particular, contrasts in their moods, temperament, motivations, and intentions'. He further explains that '[i]n more advanced forms, this intelligence permits a skilled adult to read the intentions and desires of others, even when these have been hidden'.

Presence of this intelligence in individuals can be sensed through social skills, sensitivity to comprehend other's feelings and ideas, and ability to conduct good team activities. Gardner (1993: 23) further explains that this 'skill appears in highly sophisticated form in religious and political leaders, teachers, therapists, and parents'. He also points out that this intelligence does not rely on language; and that social interaction is an important factor for nurturing of interpersonal intelligence. Therefore, he emphasises that 'the need for group cohesion, leadership, organization, and solidarity follows naturally from this' (1993: 24).

Museums can promote this intelligence through a vast range of initiatives that encourage people to work in groups and interact with each other. Working in groups allows them to discuss and observe each other's culture, preferences, likes, dislikes, thoughts, emotions, and promotes greater tolerance, understanding and acceptance. Examples of group activities that promote interpersonal intelligence abound. To cite one example is the 'Fort Building Competition' an annual activity at the Maharaja Fatehsinh

Museum, Vadodara (figure 2.4). The activity marks the festival celebrations for Diwali. In this activity children replicate a miniature model of the fort selected as the theme. They work in groups of two to four members and create their models using mud and bricks. However they can be creative to add any eco-friendly embellishments such as trees, warriors, or other props for decoration. As children work in collaboration, they learn to cooperate, interact, discuss, and understand each other. They also develop an understanding of self and others, patience, acceptance, tolerance, time management, and ability to form relationships and converse socially. This kind of group initiative by the museum is an appropriate example to develop interpersonal intelligence.

Figure 2.4: 'Fort Building Competition', Maharaja Fatehsinh Museum, Vadodara

7. INTRAPERSONAL INTELLIGENCE: Unlike interpersonal intelligence which is determined by the ability to interpret and understand others, intrapersonal involves the ability to understand one's own feelings and

motivations. In other words, interpersonal intelligence means looking out while intrapersonal means looking within. Gardner (1993: 24–25) describes it as:

> [K]nowledge of the internal aspects of a person: access to one's own feeling life, one's range of emotions, the capacity to effect discriminations among these emotions and eventually to label them and to draw upon them as a means of understanding and guiding one's own behavior. A person with good intrapersonal intelligence has a viable and effective model of himself or herself.

Individuals possessing high degree of intrapersonal intelligence demonstrate skills of self-reflection, self-awareness, self-efficacy, and self-motivation. They have strong will power, and possess accurate self-knowledge. Gardner (1993: 25) further writes that '[s]ince this intelligence is the most private, it requires evidence from language, music, or some other expressive form of intelligence'.

Greenhill states that museums possess great potential to encourage intrapersonal intelligence. As both Greenhill and Gardner point out, intrapersonal intelligence is linked to interpersonal intelligence. Intrapersonal intelligence requires deeper sensitivity and understanding of oneself. It implies being able to comprehend one's range of emotions, discriminate and be able to regulate them, and eventually guide behaviour. This real image of oneself gains clarity when individuals try to look at themselves in light of others. In other words, they try to reflect on their own similarities and compare the differences.

The implications for museum educators are twofold: one, to make children think and feel, and to make them express their personal thoughts and feelings. For making children express their thoughts and feelings, which they are otherwise hesitant to do, educators must employ interrogative approach in learning activities in which 'questioning' acts as a tool that stimulates children to constantly think about certain things and not just passively receive information. Jain (1994: 9) emphasises on using questions and explains its benefits in museum education. According to him: 'Questioning promotes learning by stimulating people to think and participate actively in the educational process. Questions provide opportunities to pupils to demonstrate their knowledge so that the museum educator is not always the one who alone knows'. The approach can be adopted for any activity such as talks, story-telling, demonstration, activity sheets, treasure hunt and educational games. Children can be made to express their thoughts and feelings through activities such as miming, mono-acting, role-playing, writing or drawing and painting. Children must be encouraged to choose any medium of expression; to speak, write, draw, act, or dance as per their liking.

8. NATURALIST INTELLIGENCE: This intelligence involves the knowledge of natural world (flora and fauna), how nature develops and how the world works. It includes affinity and love to understand the natural world including aspects such as climate, different kinds of minerals, species of plants and animals. Such people are suitable to perform the roles of a biologist, mineralogist, zookeeper, gardener, or veterinarian.

An innovative example is the 'Block by block', an activity trail created by the Museum and Art Gallery, Derby Museums. Children, after studying the

different geological samples in the ‘Notice nature Feel Joy Gallery’ of the museum, can go on a geological walk and use this trail to identify and discover a variety of stones used in the public buildings around the Derby City Centre.

The central tenet of the theory of multiple intelligences is that all intelligences are present in all human beings but in varying intensities. Gardner also notes that these intelligences are often confused with diversity of learning styles. He says that both are different; learning styles are denoted by the way people choose to learn while intelligences are the mental abilities that determine these choices. Gardner also believes that if one ‘intelligence’ is weak, the others might be strong and mentions that each intelligence is marked by an identification symbol such as writing, words and sentences for linguistic; songs for musical; dance forms and other physical body movements for bodily-kinesthetic.

The theory of ‘Multiple Intelligences’ has made a remarkable contribution in broadening the general idea of constituents of intelligence. Against the conventional belief, where only a few handful of people were valued and recognised as ‘intelligent’, Gardner’s theory, by expanding the notion of intelligence, includes almost everyone. The implication of the theory in museums is that the educators need to recognise the range of intelligences and provide a variety of options for learning with the aim of using and developing various intelligences. The fact that each intelligence can be identified through its representative symbol makes the task of tapping the potentials of the learners easy for the educators. Moreover, the educators need to broaden the avenues of learning and be innovative in their strategies to acknowledge learners with varying mental abilities. However,

it may not be practically possible for them to cater to all learning styles in a group of learners through one activity at the same time, they must still attempt to structure learning programmes in a manner that engages as many intelligences as possible.

LEARNING AS A SOCIAL ACTIVITY

The Russian psychologist Lev Vygotsky propounded the socio-cultural theory of cognitive development that 'holds that the individual's development is a product of his or her culture' (Vasta, Hath and Miller, 1999: 19–20). The theory believes that culture mediates development of cognitive abilities of children which comprises development of thoughts, language and problem solving and other processes of reasoning.

According to the theory, cognitive development in children is a 'co constructed' process. Co construction is a 'social process in which people interact and negotiate (usually verbally) to create an understanding or to solve a problem. The final product is shaped by all participants' (Woolfolk, 2004: 79). Thus development in children results from shared knowledge and shared experiences with others in a cultural setting.

Ross Vasta, Marshall M. Hath and Scott A. Miller (1999: 32) assess the relevance of culture in Vygotsky's cognitive constructivist perspective and state that 'culture teaches children both what to think and how to think'. That is, it influences them in two ways: first, it provides the content of thinking through knowledge; second, it provides 'tools for intellectual adaptation' which means children adapt to the thought processes to utilise the acquired knowledge. In other words, children develop a 'cultural

toolkit' (Woolfolk, 2004). The kit includes ideas, beliefs, practices of that culture; physical tools such as computers, books, internet; symbolic tools such as language, numbers, art symbols, signs; psychological tools such as strategies for problem solving, decision making, and reasoning. The variants of the toolkit are received by children, internalised, modified and reconstructed to form new meanings and representations, support thinking and further used in a personalised manner for social interactions.

Social interactions or socialisation rests on 'dialogues' between children and other social agents, mostly including parents, teachers, other adults from that culture; all of whom have more knowledge and experience. According to Vygotsky, these 'dialogues' are a strong medium for development of complex thinking in children. While children engage in day-to-day learning activities with adults or more capable peers, they engage in conversations to exchange ideas and knowledge; develop processes of thinking and ways to represent ideas.

To Vygotsky, another important factor in children's cognitive development is language. Language includes verbal symbols, meanings, concepts, and sounds which children receive through dialogues between children and adults. For children, language is a crucial medium of learning and social communication. It helps them to generate thoughts, express, clarify doubts and acquire knowledge. Language also has a role to play in exchange of cultural needs and values. Children internalise the knowledge and cultural tools received from adults and other members of the cultural group during conversations to think, contemplate and regulate cognitive functions within themselves.

Vygotsky values language in the form of private speech for cognitive development in childhood. 'Private speech' is the speech which children employ for self-talk and guides their thinking and action. Private speech is audible mostly in the preschool years (around 4–5 years), peaks around 5–7 years and gradually disappears and becomes silent by 9 years (Woolfolk, 2004). Woolfolk (2004: 82) further mentions that 'Vygotsky identified this transition from audible private speech to silent inner speech as a fundamental process in cognitive development'.

Besides identifying the crucial role of adults and peers in cultural settings, Vygotsky highlights another significant aspect of cognitive development in children which is 'scaffolding' (Vasta, Hath and Miller, 1999; Woolfolk, 2004; Berk, 2013). Scaffolding is an instructional process where the adult adjusts the amount and level of help offered to the child in relation to the child's level of performance (figure 2.5). The goal of scaffolding is to improve the performance level and eventually encourage children to perform independently. It involves 'giving information, prompts, reminders, and encouragement at the right time and in the right amounts, and then gradually allowing the students to do more and more on their own' (Woolfolk, 2004: 85). The technique rests on the belief that children can perform tasks with appropriate adult assistance which they cannot do on their own. In scaffolding situations, the teacher purposely designs a performance task just beyond the independent level of the learner. At first the teacher gradually decreases assistance until the learner takes more responsibility to fulfil the task. Vygotsky suggests that teachers should give problems to solve just beyond the present capabilities of their learners. Using assisted learning strategies, cooperative group learning coupled with

appropriate assistance from adults or peers, the learners are scaffolded to high levels of thinking and performance.

Figure 2.5: An adult 'scaffolding' information to assist the child solve the activity book, National Museum, New Delhi

Vygotsky also emphasizes that the amount of help varies with the age of the child. For example, in an experiment where children aged 4, 5 and 6 were given wooden blocks that fitted together to make a pyramid, the four-year olds were given more physical guidance, five-year olds more demonstrations, and six-year olds more verbal guidance, by adults.

Once the method and means of instruction become clear, the next step is to decide the nature and the appropriate time of adult assistance in learning. This depends on the Zone of Proximal Development (ZPD), another vital construct of the theory. According to Vasta, Hath and Miller, (1999: 381):

The zone is defined as the difference between what children can do on their own and what children can do with adult help. Vygotsky refers to what children can do on their own as the *level of actual development*. … What children can do with help is referred to as the *level of potential development*. The difference between actual and potential development defines a particular child's zone of proximal development.

Vygotsky's ideas have influenced the learning strategies for children. It draws focus on first finding the zone of proximal development for children and then designing programmes to suit this zone. It also stresses the importance of making children learn by way of promoting discovery based learning through modelling, guiding, and assisting children to reach their 'zones of proximal development'. Moreover, the theory identifies the crucial role played by adults, peers, language and speech; all are mediators for cultural transmission and shapers of cognitive development. This understanding has led to the inclusion of a vast range and variety of social and cultural learning programmes for children in educational institutes and cultural settings such as museums.

The private speech of children naturally offers a chance to look into their minds. As children talk aloud, they naïvely exhibit their levels of knowledge, understanding, inhibitions, fears, interests, preferences and random thoughts. The implication for educators is that they must be

observant and if can get an opportunity to hear children's private speech, they can take the necessary supportive and corrective actions.

In the context of museums, Vygotsky's ideas have greatly influenced the development of family and community learning programmes. It has shifted the focus from child-centered experiences to family and community centered experiences. Wolf and Wood (2012) in their article 'Integrating Scaffolding Experiences for the Youngest Visitors in Museums' discuss at length about the meaning, relevance and implication of using the technique of scaffolding in museums to enrich learning experiences for children. According to them, 'scaffolding by building on simple concepts and working toward mastery of ideas, can inform adults and simultaneously help children stretch to new levels of understanding and achievement' (2012: 29). They recognise that scaffolding occurs naturally between parents and children even in unplanned settings and on a day-to-day basis. However, when used in a planned way, as in museums, it can be a win-win situation for both—the parents and the museum. For the former, it can help to bridge the gaps between the attitudes, beliefs and understanding about their own children and help them formulate a scaffolded experience that is unique to the child. For the latter, scaffolding can be beneficial in using parents as a resource, finding alternative uses of their resources, and capitalising children as the potential museum visitors. More ideas on museums and parents as contexts for children's leaning have already been described in Chapter 1 of the thesis.

OUTCOMES OF LEARNING

As discussed in the introductory pages of the chapter, all learning experiences result in various kinds of changes. Gagne´ (1985) perceives the learning changes as predominantly behavioural that result in the development of five varieties of human capabilities, which he also refers to as the outcomes of learning. Below is a brief description of these capabilities or outcomes:

1. Intellectual skills: Intellectual skills are those skills that help an individual to engage with and make sense of the surroundings. Learning begins with 'symbols' which are introduced through language (oral or verbal) from a very early age. The symbols first occur as letters or numbers, and then as words. They are acquired through the mediums of reading, writing and mathematics. The symbols are basics of all learning and gradually aid to perform complex mental processes such as differentiation, classification, analysis, and calculation, and for quantifying different objects and events. Children gradually develop the intellectual capability to relate the symbols with their associated meanings and actions, internalise them and use them for communication and further learning. Gagne´ (1985: 48) defines this capability as intellectual skills which mean 'knowing how' or *procedural* knowledge'. Intellectual skills are fundamental to all learning.

2. Verbal information: The symbols acquired as intellectual skills through language are then used to state or tell facts or information. These may be expressed in different forms: oral, written or in the form of drawings. Here, the focus is on 'expressing or telling' the thought and not just on the

strength or quality of this ability. Gagne´ (1985: 48) terms this learned variety as 'Knowing that' or *declarative* knowledge'.

3. Cognitive strategies: Cognitive strategies are the internal mental processes that the learner applies in the process of learning. These are personal skills the individual has acquired and uses them in a personalised way for further learning and understanding. For example, each individual applies different skills and mental processes to learn new and unfamiliar things. Some might try to establish relationships or find similarities between the new facts to remember and learn, or try to accommodate and fit the new ideas into their prior knowledge. Cognitive strategies are unique for each individual.

4. Motor skills: Motor skills aid in performing physical tasks or actions. They help in execution of learnt information. For example, a fine motor skill of learning to hold a pencil acquired at an early age facilitates in performing complex physical acts later such as cycling, driving, cooking; or gross body movements of standing and walking, that evolve to the physical ability to jogging and running.

5. Attitudes: Attitudes, as described earlier, are tendencies or personal reactions to a stimulus. They are formed on the basis of prior knowledge and experiences. Gagne´ refers to these as mental states that determine personal choices and actions. For example, a person having positive attitudes and inclination towards subjects such as history, arts, archaeology, science, or anthropology, might choose to visit and learn in museums.

Gagne´ asserts that the above five varieties or outcomes of learning are comprehensive as all kinds of learning experiences include at least one or a combination of these varieties. Moreover, the occurrence of each variety is governed by a peculiar set of learning conditions that assists in its fruition. Say for example, to perform an intellectual skill, it is vital that the learner possesses prior necessary internal abilities to perform the task, as well as receives favourable environmental conditions that stimulate further learning. A learner can perform a simple mathematical problem on addition only if it is familiar with numbers and their quantifying nature. These internal attributes Gagne´ defines as subordinate skills which are already acquired by the learner. The external conditions for this new learning depend on the instruction and assistance received by the learner from the environment. This may take any form of verbal communication such as the facilitator asking the learner to recall previous learning or gives clues that assists the learner to perform the sum. Similarly types of learning conditions facilitate other outcomes of learning.

Generic Learning Outcomes

Kirsten Gibbs, Margherita Sani and Jane Thompson (2009: 33) consider that the learning outcomes can either be short-term or long-term; planned, or unplanned and unanticipated. They categorise the outcomes as: soft and hard. Soft outcomes are those which lead to subtle changes in individuals such as those ‘in attitudes, values, emotions, and beliefs’, while the hard outcomes are marked by ‘evidences of demonstrable skills and increased levels of knowledge and understanding’. The hard outcomes, being more readily apparent in comparison to the soft outcomes, can be assessed through evaluation techniques such as seeking feedbacks from visitors

after the learning experience, making unobtrusive observations, or by capturing responses from accompanying facilitators or parents. They refer to the UK Museums Libraries and Archives Council's 'Generic Learning Outcomes' (GLO) that are defined in the 'Inspiring Learning for All' framework. The GLO's are being widely followed and applied by museums in UK. They are categorised under five main headings:

1. Knowledge and Understanding
2. Skills
3. Attitudes and Values
4. Enjoyment, inspiration, creativity
5. Activity, behaviour, progression

An analysis of the above discussion on the concept, meaning, principles, and outcomes of learning together brings to light the following key characteristics of learning:

- Learning is perceived both as an end product (Olson and Hergenhahn, 2010; Gagne´, 1985), and a continuous process of change (Illeris, 2009)
- It results in changes in behaviour, knowledge, skills and attitudes of the learner
- Changes caused by learning are permanent (though this permanency is indefinite)
- The change may not be immediate and become apparent later
- Experience, practice or training play a crucial role in learning
- Reinforcement of experience or practice is important
- Learning can be intentional or unintentional (Woolfolk, 2004)

- Changes that do not qualify learning include maturational body changes those brought about by growth processes such as change in body structure and muscles, and ones caused by temporary body states such as fatigue, illness, and drugs.
- Learning involves both an internal process of change as well as an external outcome in the form of changes in behaviour, knowledge, skills or attitudes
- Changes in performance indicate the occurrence of learning

All the above characteristics of learning blend into the latest constructivist approach which is widely being applied by museums in their learning programmes. The approach, its meaning and underlying tenets are discussed as the next subheading.

CONSTRUCTIVISM

Constructivism is a broad approach to learning that underlies many theories and disciplines. It has its roots mainly in the theoretical ideas of: Piaget, Vygotsky, and Dewey, and links to psychology, epistemology and education. It has application in disciplines such as cognitive sciences, mathematics, anthropology, education psychology and computer based education (Woolfolk, 2004: 357).

Constructivism holds different perspectives: psychological, social, and constructionist (Woolfolk, 2004: 357–359). The psychological or individual perspective is based on how individuals construct meaning through their own knowledge, reflections, beliefs or prior experiences by applying various cognitive processes. Piaget's ideas of cognitive

development are referred by some educationists and developmental psychologists as ‘first wave constructivism’ or ‘solo constructivism’.

The social perspective relies on Vygotsky’s ideas of social constructivism. ‘Vygotsky believed that social interaction, cultural tools, and activity shape individual development and learning’ (Woolfolk, 2004: 358). He perceives that learners engage with their social and cultural surroundings including the people, cultural and social ethos and construct meanings within themselves. Vygotsky’s perspective is termed as ‘second wave constructivism’.

Both Piaget and Vygotsky emphasise on individual meaning making that takes place in the mind. The third perspective of constructivism takes a different viewpoint. Constructionism focuses on how public or masses at large construct meaning. It includes knowledge that is a part of various academic disciplines, as well as the processes through which common sense ideas, beliefs and perceptions about the world are communicated to new members of the society. This latter perspective of constructionism is similar to Vygotsky’s ideas of social constructivism.

The theory, in general, proposes that ‘knowledge is subjective’ which means that learners, individually or socially, construct knowledge for themselves by exploring their environment. In this process of learning, past experiences and previous knowledge along with the current social and cultural context of learner play a crucial role. In a constructivist setting, the teacher does not teach but facilitates the process of learning by creating a stimulating environment that is conducive for learning. Learners

themselves explore, apply their thought processes, internalise information and actively engage with the surroundings to make meanings and learn.

In the context of museums, Prof. George E. Hein, an eminent authority on museum education, has produced substantial writings on the theory of Constructivism. In several of his writings such as: 'Constructivist Learning Theory (1991); The Constructivist Museum (1995); Learning in the Museum (1998); Is Meaning Making Constructivism? Is Constructivism Meaning Making (Fall 1999); The Role of Museums in Society: Education and Social Action (2004); Museum Education (2006)', Hein elaborates the relevance and characteristics of a constructivist museum through concrete examples. He defines constructivism as 'an educational theory that both recognises the importance of individual meaning making and makes it a central aspect of pedagogic practice' (1999: 16), and shares its two distinct features.

One, with the accepted belief that personal meaning is inevitable, it is essential to search for the experiences museum visitors bring with them. This includes their prior knowledge, connections, experiences, memories etc. All these aspects influence meaning making in museums. Since each individual brings a unique set of circumstances and knowledge, Hein (1999:16) emphasises that museums must take into consideration this diversity and formulate a 'visitor studies literature' that is drawn on repeated research and study. This literature shall serve as a tool for museum exhibit and content developers.

Two, to find out the meanings visitors make from the exhibits. Hein emphasises that this aspect is crucial as visitors often make meanings and

draw conclusions that are in stark contrast to those intended to be conveyed. He further says that this meaning making is influenced by the complete environment of the museum. Hein (1999: 17) concludes that:

> Constructivism carries meaning making further. It views personal meaning making not only necessary but also as desirable, not only something that needs to be tolerated, but a human attribute that can be exploited to enhance learning. From the constructivist perspective, meaning making *is* learning.

Hein (1991) summarises nine principles of learning based on the constructivist theory. These principles explain the different facets of the approach in light of the process of learning

1. Learning is an active process
2. People learn as they learn
3. The crucial action of constructing meaning is mental
4. Learning involves language
5. Learning is a social activity
6. Learning is contextual
7. One needs knowledge to learn
8. It takes time to learn: learning is not instantaneous
9. Motivation is a key component of learning

Hein, through his writings, draws the essence of the approach of constructivism and discusses its implications from the perspective of museums. As he points out, constructivism draws on the cognitive ideas of Piaget, social and cognitive perspective of Vygotsky and philosophy of

progressive education of Dewey. Dewey emphasises on the democratic nature of education and prioritises its role in the development of society and certainly the individual. He also lays emphasis on the socio-cultural context of learning and in a way, revisits the ideas of Vygotsky. Constructivism has become the underlying philosophy of learning in museums.

In essence, the approach of constructivism is a learner friendly approach to learning. It allows learner complete autonomy and empowers them to manage their learning. They enjoy freedom to make personal interpretations from the environment by utilising their own prior knowledge and experience. Constructivism accepts these interpretations, acknowledges them, and incorporates them into the learning process. Even if these ideas differ from the actual knowledge that the facilitators intend to provide, these learner inputs are considered valuable contributions and serve as the base for further learning. The approach is flexible where learner can begin at any point and end wherever it wants. There is no strict method to follow. The role of the facilitator is to create scope for 'presenting multiple perspectives and use multiple representations of content' (Woolfolk, 2004: 361). The facilitator thus focuses on broadening the understanding and enriching the knowledge of the learner. When learning experiences are constructed using learner interpretations and ideas, learning becomes more meaningful. Learning becomes a shared responsibility for both the learner and the facilitator.

To conclude, the chapter elaborately discussed the concept of learning. It began with a brief introduction to the concept by explaining its role in overall development, and proceeded to expand its meaning and nature

using definitions from various authors. Among them, the definition and concepts by Gagne´ were found most comprehensive and therefore selected as the base for most of the succeeding discussions in the chapter. Following this, the principles or 'laws of learning' were discussed. Then the three domains of learning: cognitive, affective and psychomotor were described along with their supportive taxonomic classifications. This was followed by two different perspectives of learning: one, learning as a means to develop various mental abilities using the theory of 'Multiple Intelligences' by Howard Gardner, and two, learning as a social activity through the 'Social Learning' theory by Lev Vygotsky. The discussion further continued with descriptions of various kinds of learning outcomes as given by Gagne´. The chapter ended with summing up of the forgoing concepts through the approach of 'Constructivism'. The approach, its meaning, and implications in museums were described using Hein's perspective of Constructivism.