

Learning and Experiences: A Step model

Dr. Jagannath K Dange

Assistant professor

P.G. Department of Education, Kuvempuy Univeristy

Shankaraghatta, Shimoga, Karnataka state , India.

jkdange@gmail.com

Abstract: Education is a lifelong process, which we get through learning either intentional or unintentional from Experiences and Experience leads to Learning and learning in turn leads to Education. Experience is the accumulation of knowledge or skill that results from direct participation in events or activities; the content of direct observation or participation in an event; something personally lived through or encountered. The practical wisdom gained from what one has observed, encountered, or undergone or felt. The present paper describes the newly developed step learning experiences model which comprises seventeen different learning experiences listed based on their abstract-concrete continuum. The different learning experiences in the step model can be chosen by the teachers wisely for their teaching-learning process by considering the content, level of students, environment, difficulty level of the content and objectives to be achieved.

Key words: *Teaching-learning, Experiences, Education.*

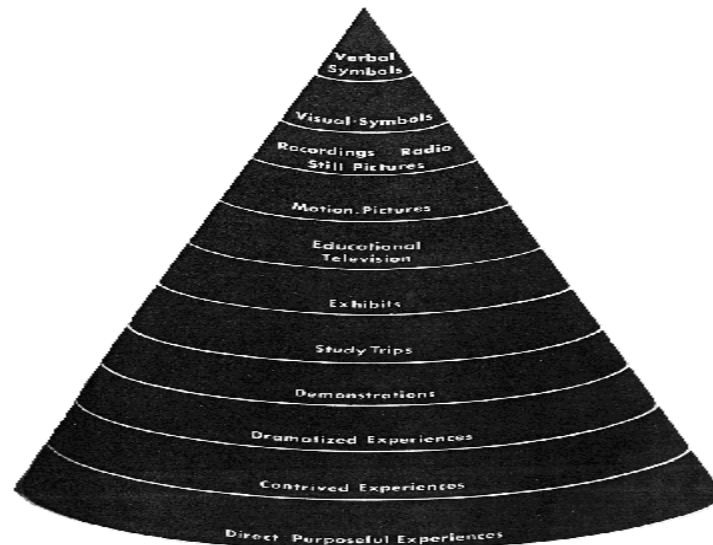
The Importance of Education as highlighted by Roussou “We are all brought into the world feeble and weak, yet we stand in need of strength; we are destitute of everything, yet we want assistance; we are senseless and stupid, yet we have occasion for judgment. All that we have not at our birth, and that we stand in need of at the years of maturity, the gift of Education”.

Buddha told that not to accept anything out of authority, not to accept anything because it happens to be written down; not to accept out of reverence for their teacher or because it sounds reasonable. But to verify, test what they have heard in the light of in their own experience. Dange (2014) defines that “Education is a lifelong process, which we get through learning either intentional or unintentional from Experiences” and “Experience leads to Learning and learning in turn leads to Education (P-4)”.

Education is formation, recapitulation; retrospection and reconstruction. These are all continuous processes of education and only be provided with the help of *experience*. Different experiences are planned and adopted to educate and train the learners at different levels of education system. It can be observed in the teaching-learning process that, instructors were highly dependent on verbalism to educate pupils. Today’s strong and insistent call for relevant, meaningful education is quite familiar to specialists in educational communications and technology. To consider the names of Erasmus, Comenius, Rousseau, Dickens, Dewey and others, all of whom were sharply critical of the meaningless verbalism of our schools and colleges.

As rightly suggested by James Q Knowlton regarding the consideration of materials and methods of instruction, another important component which can be added for the process of instruction is Experience. Experience is the accumulation of knowledge or skill that results from direct participation in events or activities; the content of direct observation or participation in an event; something personally lived through or encountered. The practical wisdom gained from what one has observed, encountered, or undergone or felt.

Experiences may be direct or indirect and of concrete and abstract can be summarized in pictorial device (P-37. Dale 1949). The cone of experience given by Edgar dale has rightly said that it is not offered as a perfect or mechanically flaw less picture to be taken with absolute literalness in its simplified form. It is merely a visual aid to explain the interrelationships of various types of audiovisual materials, as well as their individual positions in learning process.



Edgar Dale's Cone of Experience 1969

In true sense the bands of the (Edgar Dale's) cone are not only the types of audiovisual materials but the different experiences are also included. In fact the upper four bands like verbal symbols, visual symbols, Radio, Recordings, and still pictures, and motion pictures are more related with Audiovisual materials but the later six bands of the cone like Exhibits, Field Trips, Demonstrations, Dramatic Participation, are the strategies of teaching-learning. Contrived Experiences and Direct, Purposeful Experiences are related with term Experiences where a teacher can use them in the teaching learning process. As we study the cone, we recognize that each division represents a stage between two extremes-direct experience and pure abstraction. As we move from base of the cone to the up in order of decreasing directness. Similarly, if we move down from pinnacle of the cone in the order of the decreasing abstraction. As per the Dale's Cone we find Ten bands of experience and audiovisual materials and which has not covered all experiences and even all audio visual devices. The third version of the Book *Audio-visual methods in teaching* released in 1969 and the audiovisual materials used in teaching till that time have been included. But the growth of Information and the communication technology leads the innovation of many more devices which are part of teaching-learning process and the new experiences are also generated with the help of those devices.

Dale has listed the Audio-visual methods which were present or developed at that time many more hardware and software methods have been developed after that after that. So it is essential to add more experiences and make a new model which may be useful for the teachers-students to adopt and even researchers to carry out the research work.

Based on experience of teaching at different levels it was felt that, there are many experiences and audiovisual materials which are missing in dale's cone and to be included by making a new model of experiences which is presented in the following Step Learning Experiences model.

The different learning experiences are presented in the following step model form. The base of the step learning experiences model is direct and purposeful experience which is always preferable for any new learner and any kind of learning concept and gives firsthand experience in turn leads to the permanent learning(Expected). At the top of the cone is verbal or text these are the least effective ways to introduce new content to students. The step learning experience model includes 17 different experiences.

Verbal Symbols: The very first stage of Step Learning Experiences Model is Verbal symbols; Verbal symbols are the designations that have no resemblance to the object or ideas for which they stand. All appearances have been removed from the original. The word Cow does not look like a cow or sound like a cow or feel like a cow. At the top of the Step Learning Experiences



Model we find the things in terms of words which are abstracted everything from the original except the meaning of the term, and on this meaning everyone has reached more or less common agreement.

Verbal symbols are words, sentences, sounds, or other utterances that are said aloud in order to convey some meaning. The verbal symbol may be a word (Cow), an idea (beauty), concept (tragedy), a scientific principle (Theory of relativity), a formula (H_2SO_4), a philosophic aphorism (Honesty is the best policy) or any other representation of experience that has been classified in some verbal symbolism.

Olfactory Experience: It is also called Aroma Experience; Aroma is a quality that can be perceived by the olfactory sense. It is a type of Experience where the learner can have the concrete idea of the abstract thing through the sense of smell. We can have the smell of substance that may be present in different forms (may be in Solid, liquid or Gas). It is one time learning process or permanent learning takes place and does not require to any rehearsals. Students involve their nose to distinguish specific elements.

Odours are abstract things as verbal symbols and which have no resemblance to the ideas for which they stand. We see that accounts of representational content cannot always be based on the visual model.

Gustatory Experience: Gustatory is an adjective that refers to tasting or the sense of taste, Gustatory has its roots in the Latin Gustare, meaning "to taste,"

It is a type of Experience where the learner can have the concrete idea of the thing or object or concept through the sense of taste. We can have the taste of real thing which may be in different forms (different Size, shape,

colour). It is one time learning process or permanent learning takes place and does not require to any rehearsals. Students study best by tasting the item under investigation.

Tactile-kinesthetic Experience: It is a type of Experience where the learner can have the idea or the concept of the thing or object through the sense of touch and feel; it is learning through a hands-on approach and learners will be physically involved.

Kinesthetic Learning Experience refers to one of the modalities that learners use in order to approach and absorb new information. Every individual student has his or her own preferred learning style, and many people (children and adults) learn best when they are allowed to touch and physically manipulate tools that model or represent the lesson at hand. Kinesthetic learners assimilate new knowledge more efficiently through physical work (playing with manipulative, building dioramas, working with scale models, or role-playing a situation) as opposed to simply hearing or seeing a lesson.

Kinesthetic-tactile refers to a pupil who learns by movement and by touching. This type of experience can be given through hands-on activities, manipulating objects or flash cards, working problems or re-typing notes.

Visual symbols: Visual symbol may be a picture or shape that has a particular meaning or represents a particular process or idea. Something visible that by association or convention represents something else that is invisible; and something that represents or stands for something else, usually by association or used to represent something abstract.

Visual experience has a rich predictive structure. Consider the visual experience you have when you look at a ripe orange. When you look at the orange, it appears that there is an object-namely, the orange-and that it has certain properties-orange coloured, roundness and so on. Visual experiences can also present multiple objects. Visual symbols have no realistic picture of the thing itself but an abstract representation with charts, graphs and maps. We no longer deal with literal reality but with substitution, but communicate messages by means of new language-visual symbols.

Still Pictures, Radio, Recordings: This stage includes number of devices that might be classified roughly as “one-dimensional aids” because they use only one sense organ that is either eye (seeing) or ear (hearing). All these materials are less direct than the audio-visual experiences.

Filmstrips, visual projectors like slide projector, Overhead Projector, iPods, glass slide and photographs, Radio, Tape recorder or recordings are one dimensional aids with similar differences as to imposed or free sequence.

Motion pictures, Television and computers: The motion picture and television experience, unlike the field trip, unfolds with a compression of time and space. Both these can eliminate the unnecessary and unimportant material and concentrate upon only selected points. The important processes can be watched with slow motion and vital content and issues can be repeated number of times. The pupils are mere spectators and are distant from the experiences like touching, tasting, handling and feeling from directly experiencing. We are no longer participants in the event.

The present day computers are not only compact, extremely powerful and versatile, commonly accessible and easy to use. The computer has, indeed become an integral part of our teaching process and daily life. The computer generated graphics enhanced students' learning and the scientific concept could be explained much more quickly using Computer Assisted Instruction (McMahon, 1995). CAI is now being used to replace traditional laboratories. In on-line chemistry programs where the teacher enters instructions and the program changes accordingly. Students then simulate the entire lab experience using the CAI, which saves time, resources and is safer than the traditional laboratory. CAI is now being used in place of biology labs where students can visualize dissected frogs and label the internal organs using the computer.

Television: Little or no use is being made of commercial television in the education of culturally disadvantaged children even though Indian television usage statistics shows that 90% of all homes have at least one set. Here, obviously, it is a potential channel to poverty stricken homes, a channel which is not being effectively utilized. Television's influence on language habits, vocabulary, consumer patterns, cultural values and behavior patterns should not be underestimated. Research suggests that even the learning pace can be enhanced or improved through television learning.

Exhibits: In education normally the arranged working models exhibited in a meaningful way. Sometimes they may be series of photographs or of photographs mixed with models and charts. Sometimes it includes the demonstration of experiments or science devices or a slide projector, motion picture, computer and television. In exhibition normally the learner can act as a spectator unless he/she will be given opportunity to handle and manipulate the devices. The opportunity to handle the materials by the participant makes the way to use more sense organs and Learning by doing always helpful for meaningful or concrete learning.

Field-trip (Educational Excursion): It is a trip by the students to gain firsthand knowledge away from the classroom as to a museum, factory, geological area, or environment of certain plants and animals. A field trip gives students a chance to study something in real environment, rather than in a classroom or laboratory.

At field trips normally students see and note down certain important things. Sometimes they get chance to interview and discuss the things with officials or local people to clarify the doubts with supportive to observation. When observation is combined with participation field trips becomes more meaningful (Dale 1969). Students of Biology, Zoology and History subjects are benefited more through Field trips, because students learn through firsthand experience or learning through direct observation.

Demonstrations: A demonstration is another means whereby pupils can see how certain things are done. Demonstration may require nothing more than observation on the part of the pupil or observer. It is the act of showing or making evident or circumstance of proving or being proved conclusively as by reasoning. It may be description or explanation of a process and illustrated by examples, specimens and it also includes the act of exhibiting the operation or use of a device, machine, process and product. A teacher can demonstrate how to use the pipette in the chemistry and microscope in biology practical.

Dramatization: There are many things we cannot possibly experience at first hand and we cannot experience directly something that has already happened. Furthermore some matters cannot be reduced to contrived experience and some ideas must of necessary be somewhat abstract and symbolic. Dramatic participation can help us get close as possible to certain realities that we cannot reach at first hand.

Dramatic participation which benefit children's education and development in five general areas: physical development/kinesthetic skills, artistic development /drama and theater skills, mental development/thinking skills, personal development/intra-personal skills, and social development/interpersonal skills."

Howard Gardner (1989) described his vision for schools which use multiple intelligences to incorporate authentic learning. Dramatization has the capacity to provide authentic learning as most of the intelligences are utilized in learning activities. For example, dramatization incorporates *verbal linguistic* learning through the use of language, scripts, vocabulary and reading. *Intrapersonal* learning relates to the feelings and emotions involved in drama, characterizations and how we respond as an individual, while *interpersonal* learning comes from working with others to create a scene or role play. *Kinesthetic* learning activates the physical self, the body and doing actions. As students re-create images, pictures, visual details, staging, movement, location and direction with drama their *spatial* learning skills are developed. *Logical* learning follows from using rational patterns, cause and effect relationships and other believable concepts involved with the drama. Sometimes *music*, or even the music of language, is also used in working with drama.

Contrived Experiences (Artificial Experience): A contrived experience is *editing of reality*, an editing which makes the reality easier to grasp. It may be illustrated by working model and it differs from the original either in size or complexity; contrived experiences lead to a suspension of disbelief. In other words, during the period of experience, the learner believes in the reality of the experience. We make use of contrived experiences to overcome limitation of space and time, to edit reality for us to be able to focus on parts or a process of a system that we intend to study and to overcome difficulties of size and finally to understand easily and effectively. Models and mockups are recognizable imitation of the real thing except size which may be scaled down or scaled up to provide the needed experience. It simplifies by eliminating the unnecessary details and emphasizes the key points; this experience will be used increasingly in schools, colleges and other industries.

Models, mock-ups, and cut-aways are additional instructional aids. A model is a copy of a real object. It can be an enlargement, a reduction, or the same size as the original. The scale model represents an exact reproduction of the original, while simplified models do not represent reality in all details. Some models are solid and show only the outline of the object they portray, while others can be manipulated or operated. Still others, called cut-aways, are built in sections and can be taken apart to reveal the internal structure. Whenever possible, the various parts should be labeled or colored to clarify relationships.

We use contrived experiences for four valid reasons. The First is to overcome limitation of space and time second is to edit reality for us to be able to focus on parts or a process of a system that we intend to study. Third to overcome difficulties of size and fourth to understand...

Virtual learning experience (Near experience): Though the virtual experience can be called as contrived experience but the pupils level of experience may differ and the kind of joy and level of understanding may be high at virtual than the contrived experiences which include models mockups and cut-aways as we can consider them as hardware. A virtual learning experience involves a set of teaching and learning tools designed to enhance a student's learning experience by including computers and the Internet in the learning process. The representation of the learning environment ranges from text-based interfaces to the most complex 3D graphical output. Nevertheless, representations are not neutral; they do influence the students work. Most often, the rationale for using 3D-graphical representations is motivational.

In computers, 3-D (three dimensions or three-dimensional) describes an image that provides the perception of depth. When 3-D images are made interactive so that users feel involved with the scene, the experience is called Virtual reality.

Smart boards are the best examples for virtual experience where students can conduct science experiments in simulated way. Pupil can add Hydrogen and oxygen gases to get water. They can clearly view the changes happen in the solutions and they can feel as if they are doing the real experiment.

In virtual experience pupil can see and hear but not use the senses of touch and smell. We can bring reality in the classroom which is more than contrived experience and as near as the real experience. The virtual experience is the need of the hour and is a byproduct of technological innovation, in future there will be virtual experiences prevailed in all classrooms around the globe.

Four-Dimensional Experiences: Four-Dimensional Experiences that describes a presentation system combining a Three Dimensional film with Physical effects in the theatre, which occurs in synchronization with the film. Because physical effects can be expensive to install, 4-D films are usually presented only at special venues, such as theme parks and amusement parks. The film Avatar is one of the films that has received the treatment. Some of the effects simulated in 4-D films include strobe lights, rain, wind, and vibration. The use of water sprays and air jets is also common, some seats in 4-D venues vibrate or may move a few inches during the presentation. Due to the fast growth of technology, 3-D Theatres have been enhanced by the addition of special simulations. The combination of 3-D movies with chair movement (sway, tilt, drop, wave motion vibration, or movement in any direction) and other effects, such as water spraying, leg and back ticklers, and wind blowing, is usually considered a 4-D experience. Using additional hall effects, such as rain, lightning, air bubbles, smoke, and special smells (for example, fireworks smells at the *London Eye's Experience* and gassy smells, when the stinkbug sprays it in *It's Tough to be a Bug*) is often regarded by many as 5-D. For the next generation the teaching-learning experience may include effects like 4-D or even 5-D and 6-D.

In Education some of the abstract concepts of literature, history and science can be taught with Four dimensional effects and pupil may enjoy the abstract content in a concrete way with same effect as it is given by the poets in the poems, even at science issues and concepts as if they are experiencing in a real situation.

Ubiquitous learning Experience: Education has undergone major changes in recent years, with the development of digital information transfer, storage and communication methods having a significant effect. After the initial impact and applications of computers in education, the introduction of e-learning and mobile learning epitomized the constant transformations that were occurring in education. Now, the assimilation of ubiquitous computing in education marks another great step forward, with Ubiquitous Learning (u-learning) emerging through the concept of ubiquitous computing.

Ubiquitous means “*pervasive, omnipresent, ever present, and everywhere*”. A ubiquitous learning experience is any setting of the environment in which students can become totally immersed in the learning process. To define, it is a kind of experience where learning is happening all around the student but the student may not even be conscious of the learning process. The Ubiquitous learning Environment includes an ubiquitous computing technology-equipped system supplies users with timely information and relevant services by automatically sensing users' various context data and smartly generating proper results. So the characteristics of a pervasive computing environment can be mainly concluded as the following: User mobility, Resource and location discovery, Context awareness (user/time/location), Collaborative interaction, Ambient information, Calm technology, Event notification, Adaptive interfaces, Invisibility object augmentation, and Any time/anywhere.

Direct Real Experience: Some experiences like observing the process of digestion live through micro cameras in the digestive organs of the human beings which cannot be experienced outside the body of a human being or in any other mode. These are the experiences which can be made available only at the places where man cannot reach and only a technology can reach. Examples like space, depth of the earth, studying the human and animal organs. These experiences can be observed live or in real time through technological gadgets and the same can be used effectively to the students understanding of the processes, certain special environments and sometimes the special actions too.

Direct real experience can give greater experience in learning for the students than virtual or contrived experiences. The pupil will have an opportunity to observe and study directly. Hence its impact may be high on learning than the other earlier experiences. It is also an alternative experience to the direct purposeful experience. When teachers are unable to provide direct purposeful experience, they may only have the best option of direct real experience.

Direct Purposeful Experience: The Base of the *Step Learning Experiences Model* represents direct reality itself as we experience it at first hand. It is the rich full bodied experience that is the base of education. It is the purposeful experience that is seen, handled, tasted, felt, touched, and smelled. It is the experience of life and we get it by living.

Some of our richest, most vivid sense impressions are those which involve our feelings and perceptions in an eager exploration of the world. Making a piece of wood work, tying a knot, preparing a meal, riding bicycle, driving car

are the examples where we directly participate with responsibility for the outcome. This kind of experience more related with learning for life and live learning.

The Cone should be considered as a continuum rather than a hierarchy. Learning occurs through all of the experiences present in the Cone, and all experiences may be appropriate at different stages in the learning process or for different audiences. For example, research shows that children from low socio-economic backgrounds learn best through direct instruction, or lecture, rather than through some of the “more influential” experiences found farther down on the Cone (Lalley and Miller 2007).

The Cone does not demonstrate which is the best method of learning? One can conclude that many different kinds of instruction should be used in the classroom. Since no single method is superior to another, instructors must analyze the audience as well as the content. Some content may fit into one teaching method, while other content may be better suited to another method. Some audiences may learn better through lectures or reading, while other audiences may learn through projects or teaching peers. Most often, the instructor will have to include a variety of teaching methods. Some subjects cannot be taught by using one method or another.

The use of audio-visual materials in teaching does not depend primarily upon reading to convey their meaning. It is based upon the principle that *all* teaching can be greatly improved by the use of such materials because they can help make the learning experience memorable we do not mean that sensory materials must be introduced into every teaching situation. Nor do we suggest that teachers scrap all procedures that do not involve a variety of audio-visual methods (Dale, 1954, p. 3, italics in original). Olfactory, gustatory and tactile experiences are also important because certain amount of learners will be there in every group who are strong at these sense organs. Some of the concepts also need these senses. The step learning experiences model helps in selecting the suitable experiences for such group of students.

Mathematics is a subject of abstract concepts and can be learnt better through verbal and visual symbols, contrived and virtual experiences. It may not be possible to give direct experiences for pupil in subjects like mathematics and statistics.

Verbal and visual experiences are suitable for Language learning. We learn our mother tongue based on verbal experiences and only the extra language can be learnt with the help of visual symbols. Two dimensional aids like television, computers and films are also useful than the visual and verbal experiences because they provide opportunity to hear and visualize the style of intonation use of lip and tongue moment.

Historical events are past events and such experiences can be presented effectively with the help of television programmes and films with the effect of 3 dimensions. It is not possible to give real experiences to the pupils in relation to the events history.

Experiences are meant to experience not to evaluate or compare among them. Experiences are purely individualised, with the same kind of experience one's perception may be differ from others. One can learn better than other, some pupil can learn better with the direct experiences and others can learn easily with virtual experience, some through contrived, one dimensional and two dimensional aids.

John Dewey says that “Direct experience had the disadvantage of being limited in range and fatally restricted”(1946. P-51). Indeed, we learn many things indirectly even better than the direct experience. The direct experience is not necessary or suitable for learning all kinds of concepts.

Instructional design has evolved significantly since 1946 when Edgar Dale created the Cone of Experience. Dale postulated that learning occurs in a hierarchy of experiences, a hierarchy that is continually fluctuating and interacting (Dale 1969). The Cone, of course, is only a model—a helpful reminder. It is not an exact and flawless representation of everything that takes place in the process of learning....The Cone of Experience cannot give a complete description of the vast organic complex that constitutes the process of communication and learning (Dale 1969). Dale also states that verbal symbols, the pinnacle of the cone, have a great deal of value in the learning environment. Simply because verbal symbols are at the pinnacle of the cone does not mean that teachers should not use verbal symbols.

James P. Lalley and Robert H. Miller have examined many different studies about learning and retention and have concluded that the most learning and retention occurs when many different teaching methods are used in the classroom. They found that direct instruction, or lecture, is most commonly used in the classroom and has “a significant effect on retention”. Reading, although it appears to have little value based on Dale's Cone will influence the students' ability to learn throughout their lives.

As a rule, educational experiences that involve the learner physically and that give concrete examples are retained longer than abstract experiences such as listening to a lecture or learning from text. Instructional media help add elements of reality - for instance, including pictures or highly involved computer simulations in a lecture.

The different learning experiences in the step model can be chosen by the teachers wisely for their teaching-learning process by considering the content, level of students, environment, difficulty level of the content and objectives to be achieved, etc.

References:

Dale Edgar. (1954). *Audio-visual methods in Teaching.* (2nd ed).New York: The Dryden Press.

Dale, Edgar.(1946). *Audio-visual methods in Teaching.* New York: The Dryden Press.

Dale Edgar. (1969). *Audio-visual methods in Teaching.* (3rd ed).New York: The Dryden Press.

Dange, Jagannath.(2014). *Learning and Experiences.* Lap Lambert academic Publications. Germany.

Dewey, John. (1944). *Democracy and Education.* NY: Free Press

Dewey. John. (1916). *Democracy and education: an introduction to the philosophy of education.* New York: The Macmillan Company.

Dewey, John. (1998) *Experience and Education: The 60th Anniversary Edition .* Kappa Delta Pi: West Lafayette IN.

James Q. Knowlton,() "A Conceptual Scheme for the Audiovisual Field," *Bulletin of the School of Education,* Indiana University, 40(3). P-5.

Lalley, James P. & Robert H. Miller. (2007). The Learning Pyramid: Does It Point Teachers in the Right Direction?. *Education* 128, No. 1: 64-79.