Cooperative Learning

Introduction

Our on-going classroom teaching is totally teacher dominated and content centred. Here, the teachers are regarded as the repositories of subject knowledge and their role is simply to pour into the open, empty and willing (or non-willing) minds of students their vast reservoir of knowledge. They do not trust their students to learn. They think that they must tell them what to learn and provide all the structure for the learning to take place. This learning structure is highly individualistic. It encourages individual and competitive learning in place of group and cooperative learning. Here, the students are tempted to learn more and more in order to gain good grades, divisions, certificates and appreciations by excelling their own peers. Cooperative learning says no to such practices. It advocates cooperative and group learning in place of the competitive and individualistic approach prevalent in our educational system by redefining the roles of the teacher and the learners in a particular teaching-learning set-up. How is it
done and what do we mean by cooperative learning as a teaching-learning strategy? Let us now look into these issues.

**Definition of Cooperative Learning**

Cooperative learning, as the name suggests, stands for a learning process or strategy in which the students get opportunities to learn by themselves in a group in a cooperative or non-cooperative environment by forming a number of teams, each consisting of a small number of students of different levels of ability for the understanding of a subject. They share all information among themselves and help each other for having the required knowledge, understanding and application of one or the other aspects of the content material, or course units included in their syllabus. It seems quite contrary to the practice of teaching-learning prevalent in our current educational system.

**Basic Assumptions and Features**

1. The cooperative learning ideology rests in making the teaching-learning process as learner centered rather than being content or teacher centred.
2. It advocates constructivist ideology for the better teaching-learning outcomes by encouraging the students to formulate their own constructs and ways of understanding the content material.
3. It believes in redefining the role of a teacher from a lecturer, expert or repository of subject knowledge to capable facilitator for helping his students in their cooperative learning task.
4. It advocates proper teaching-learning environment instead of mere lecturing and demonstration on the part of the teachers. Here, the responsibility for learning is, thus, shifted to the students from the teachers’ efforts for making them to learn by resorting to various tactics.
5. It emphasizes social learning by assuming that learning takes place better in a social situation and group environment rather than in isolation.
6. It assumes that children learn better in a non-competitive anxiety-free cooperative environment than in a competitive stressful environment as available in the traditional classroom situations.
7. It believes in group efforts and cooperation among the learners in place of individual efforts and competition.
8. It is of the view that children learn better in a cooperative way from each other on account of the proximity, equality, interdependence and rapport existing among them instead of the learning thrust upon them by some outside agency, including teacher.
9. It believes that students achievements and performances may be evaluated better in term of group achievements in the less threatening group situation rather than the competitive more threatening individualistic situations.
10. It believes that students learn best when they are totally involved in the learning process by cooperating each other for attaining the maximum benefit.

11. It advocates that the two necessary elements—group goals and individual accountability—should be used together for the evaluation of group achievements in cooperative learning.

12. It believes in providing the students the opportunity to learn and work cooperatively in a group in order to develop them into a cooperative and responsible social being on the very assumption that students who cooperate with each other in learning learn to like each other in real life.

**How to Proceed with Cooperative Learning**

To replace the traditional classroom learning and setting into a cooperative learning set-up is not an easy task. One may have to face so much opposition and resistance from the fellow teachers, students, authorities and parents in doing so. Moreover, the present circumstances and educational system are not at all favourable for the introduction of such innovative but useful practice in our schools and colleges. However, much depends upon the teacher who is himself convinced about the fruitful outcomes of the cooperative learning. For this purpose, he must learn the art and skill of employing it as a useful strategy of teaching-learning. Then he must get his students, authorities and parents of the students convinced about the utility of employing this noble practice. With such background and initiation, he should settle down for devising and employing variety of ways and means for the adoption of cooperative learning as a teaching strategy. In doing so, he may try for a number of typical cooperative learning set-up as mentioned here.

1. A unit of the course in a subject may be broken down into certain meaningful sub-units. These sub-units may, then, be assigned to the different teams (each having 5 to 8 students) of a class or grade for cooperative learning. The team members may collect relevant information and go through learning experiences, activities, etc. for gaining the required knowledge and understanding about the assigned subunit in a quite cooperative way mutually helping and complementing each other's efforts. After sometime (this duration may be fixed in advance), the members of the different teams may sit together for discussing their learning outcomes with respect to the sub-units. In fact, they may teach each other the content material or learning experiences acquired by them. After grasping the knowledge and understanding of the whole unit, they may again be asked to work in their respected groups/teams for gaining more insight and understanding of the unit through cooperative efforts and then show the outcomes of their striving to all the students of the class.

2. Students of a class in any subject/grade may be asked to work on a group project, for which they may have a hand in selecting. It may give extensive opportunities to them for cooperative learning and working in the group. Such group projects or investigations may be highly structured to emphasize higher order thinking, analyzing and evaluating skills. They may also provide a proper platform for the demonstration of practical and working abilities on the part of the students working cooperatively.
3. In another cooperative learning set-up, the students with varying academic abilities may be assigned to 4-5 member teams for studying what had been initially taught by the teacher and to help each other reach his or her highest level of achievement. After doing such cooperative efforts, all the students are then tested individually. Then, the different teams may be awarded certificates or other recognition on the basis of their progress over their past records.

4. In another cooperative learning set-up, a particular topic or unit of the subject is assigned to five or six groups or teams of a class. Each group or team may have a small number of students of varying interests and abilities. In a team, each team member is responsible for learning a specific part or subunit of a topic. He himself strives hard in the learning of this assigned sub-part in close collaboration with his or her counterparts in other teams. In fact, they work closely in a quite cooperative spirit for acquiring the necessary knowledge, experience and application related to that sub-topic. Then, all members of the team sit together for discussing the fruits of their striving and acquire complete picture of the knowledge and understanding of the sub-topics or subunits. They may go for its deep understanding and advanced study by repeating their cooperation exercise in the process of learning.

**Merits and Advantages**

Cooperative learning may prove quite fruitful and advantageous on account of various benefits derived through its use.

**Academic Benefits**

1. It involves students actively in the teaching-learning process.
2. It makes the students responsible for their learning.
3. It makes the teacher-learning process as learner centred rather than content and teacher centred.
4. It helps the students in developing higher-order thinking, critical thinking and oral communication skills.
5. It helps the students in learning so many tasks requiring manipulation, demonstrative and practical skills simply on the basis of learning through imitation and observation of the behaviour of their peers.
6. It helps the weaker students in improving their performance when grouped with higher achieving students.
7. It gives opportunity for deeper understanding and insight into the subject matter as a result of discussing and teaching the material by them to their peers.
8. It provides interactive model for the classroom teaching in place of one-sided teacher-dominated lecture or demonstration method.
9. It improves classroom results by making the students more involved, motivated and determined to learn and achieve the learning targets by providing an anxiety-free non-competitive stimulating environment.
10. It helps in improving the learning environment of a classroom by re-scheduling the roles of the teachers and the learners. Here the teacher now acts as a facilitator in the task of learning totally planned and implemented by themselves.

11. It makes the teacher more free and capable of guiding and supervising the learning activities of his students as groups are easier to supervise than the individual students.

**Psychological Benefits**

1. The students learn better in a cooperative environment that keeps them away from the unnecessary anxiety of being excelled by others.

2. Cooperative learning encourages students to seek help and accept tutoring from the peers. It provides a sense of security that is almost endangered in a competitive traditional classroom environment.

3. Cooperative learning helps in building the student’s self-confidence and self-esteem in a better way than the traditional classroom teaching.

4. Cooperative and team spirit help the students in reducing their classroom learning and test anxiety.

5. Cooperative teaching helps in developing healthy interaction among the students and between the teacher and students. Students acquire a quite healthy and positive attitude towards each other and to their teachers who are always ready for helping them in their learning tasks.

**Social Benefits**

1. Cooperative learning is helpful in the development of many social qualities and virtues among the students for becoming an adjusted social being.

2. In cooperating learning, the students get a healthy positive atmosphere for modelling and practising cooperation and consequently, the art of getting and giving proper cooperation can be properly learnt through the practice of cooperative learning.

3. It helps in promoting leadership skills among students.

4. Through cooperative learning, the students get along with the people of diverse opinion, background, socio-economic status, religion, caste, colour, creed, etc. This is helpful to live and adjust in a democratic society.

**Obstacles in Introducing Cooperative Learning**

As discussed above, the cooperative learning strategy offers a teaching-learning platform to bring a desirable reform in the present day teaching-learning system. It is aimed to provide more responsibilities on the part of the learners for carrying out their learning business by themselves while cooperating and working together in small or large group as per demands of their learning situation for the satisfactory accomplishment of the learning objectives. In reality, it suits the very nature and purposes of the learners belonging to a free and democratic
society and, as such, it needs to be adopted as one of the good teaching-learning strategies at all levels of school or college teaching. However, in spite of so many benefits derived from its introduction, it has not yet taken any shape in the system of our school and college education.

**Resistance from the Teacher**

The teachers themselves do not favour the introduction of cooperative learning in their teaching-learning on account of the following reasons:

1. They themselves have not been taught through cooperative learning or teaching strategy at their school or college level.
2. They have not got any orientation and training for the use of cooperative learning strategy in their teacher preparation courses—D.Ed., B.Ed., etc. They have also not been exposed to its orientation and training through in service programmes. As a result, most of the teachers do not know how or where to start the cooperative learning techniques in their classrooms.
3. They fear that they may give up control of the class and their authority if they give more responsibility to the students for their learning as it is bound to happen in a cooperative learning set-up. In fact, they fear to accept their role as mere facilitator instead of all and all in the present educational system.
4. They lack in self-confidence for trying methods and innovative practices thinking that it may expose them to potentially different situation. They, in fact, suffer from the well-known principle of inertia, i.e. resisting any new change or practices.
5. They feel that the students will be wasting their time in a cooperative learning set-up. There will be a chaotic state upsurging in the classroom environment with serious disciplinary problems for which they themselves be blamed by authorities and parents.
6. In the present set-up, the teachers are supposed to finish the prescribed syllabus of a subject in a fixed duration and days of the session. The teachers fear that it could not be possible by adopting cooperative learning techniques.
7. They feel that the required teaching-learning and curricular material for the successful use of cooperative learning is not going to be available to them. They themselves have no knowledge, skills, and abilities to develop worksheets, project descriptions and other set of handouts helpful as support or base material for cooperative learning. Textbooks are also not written in view of the requirements of cooperative learning. In such circumstances, they feel hesitation to switch over to cooperative learning.
8. The use of cooperative learning requires altogether different assessment techniques in terms of assessing group efforts and assigning grades to groups on one hand and evaluating individual's role and efforts in such group venture on the other. Their unfamiliarity to such innovative assessment techniques may persuade them to oppose cooperative learning on the assumption that the system will fail in the absence of the assessment of individual accountability of the learners.
Resistance from the Students

The students may also be seen to oppose the introduction of cooperative learning as a teaching-learning strategy mainly for the following reasons:

1. The students are habitual in seeing the teacher in his authoritarian expert role presenting each and every type of information and skill before them. They feel much more uncomfortable in making their own attempts for the acquisition of information and skills and hence oppose the introduction of cooperative learning.

2. They feel that lecture method is a proper method of teachers for teaching and they can also learn easily through its use by remaining quite passive in the teaching-learning process. Therefore, they resent any type of responsibility handed over to them in terms of interactive and cooperative learning.

3. They think that a teacher resorts to cooperative learning simply for saving his own labour and energy otherwise required for classroom teaching. They, therefore, begin to criticize the role of a teacher as a mere facilitator instead of expert information presenter.

4. They are not subjected to any training or experience to cooperate in an academic environment. They are habitual to the spirit of maximum competition for excelling one another in the race of gaining grades and recognition. Therefore, they try to resent or become fearful when asked to share information and study techniques or to help their peers in the cooperative learning processes.

5. It becomes quite difficult for the students to feel their utmost individual responsibilities for the greater cause of group work and cooperative learning. They feel, that the peers in their team may not provide due cooperative or may play the role of a shirker.

Resistance from the Authorities

The authorities put hurdles to the introduction of cooperative learning on account of the following reasons:

1. They fear that the teachers will not be doing their duties and may play the role of shirkers as an excuse for introducing this system.

2. It will be difficult to evaluate the teachers’ effectiveness and output in the absence of the evaluation of the students’ individual performance and accountability.

3. The authorities and administrators themselves have no proper knowledge about the philosophy and methodology of cooperative learning.

4. They fear that an altogether new infrastructure needs to be developed for the introduction of this innovative practice.

Resistance from the Parents

The parents also oppose the introduction of cooperative learning chiefly on the following grounds:
1. The parents have not been taught or exposed to the philosophy and methodology of cooperative learning.
2. They fear that this system will hamper the proper individual development of their children and they will become unfit for competing in this world of cut-throat competition and high speed advancement.
3. Parents of the bright and upper grade students fear that their children will be used as tutors or will be wasting their time and energy in carrying the load of their teammates in the name of cooperative learning.
4. They take it as an excuse on the part of teachers for getting rid of the load of their teaching assignments and think it better to get their children educated through distance or on-line education mode instead of wasting their time in cooperative learning.

In this way, we may notice a number of hurdles, fears and resentments standing in the way of introducing cooperative learning in our educational system. However, as may be analyzed and concluded easily, all these fears and resentment are absolutely erroneous and baseless. The ignorance regarding the philosophy, methodology and fruitful results of the cooperative learning seems to be the only cause working against the introduction of this noble and effective teaching-learning strategy. Surely and certainly, the lead should be taken by the teacher education institutions for nurturing the clear picture and methodology of cooperative learning in the minds of the teachers, so that they may share the desired responsibility of its introduction in the schools in the future.

**SUMMARY**

1. Cooperative learning stands for a learning process or learning strategy in which the students of a class engage themselves in a variety of useful learning activities in a cooperative non-competitive environment by forming a number of teams, each consisting of a small number of students of different levels of ability for the understanding of a subject.
2. The basic assumptions and features associated with cooperative learning may be outlined as (i) emphasis on making the teaching-learning process as leaner centred, (ii) engaging in leaning collectively in a cooperative way rather than doing it individually in a competitive way, (iii) redefining the role of teacher from a lecturer, expert or repositories of subject knowledge to capable facilitator, (iv) shifting the responsibility of learning to the students instead of the teachers’ efforts for making his students to learn, (v) helping the students to learn in a quite healthy and meaningful cooperative environment, (vi) emphasis on the evaluation of group performance or achievement rather than the individual performance or achievement, and (vii) helpful in developing many social virtues.
3. Cooperative learning may be executed in a number of ways like (i) the teacher may first divide a unit of the course in a subject into certain meaningful subunits and then these subunits may be assigned to the different teams (each having 5 to 8 students).
Multimedia

INTRODUCTION

Multimedia is one of the important innovations in the field of educational technology to improve the process and product of teaching – learning. The multimedia approach consisting of the use of many appropriate and carefully selected devices, techniques and media in such a combination as to yield in the most effective realization of the teaching-learning objectives in a best possible way.

The term multimedia approach to teaching – learning may be referred to the use of appropriate and carefully selected varieties of learning experiences which when presented to the learner through selected teaching strategies, will reinforce and strengthen one another in such a way that the learner will achieve predetermined objectives in an effective way.

Multimedia approach to teaching – learning can be classified in different ways. These media are so selected and planned as to
yield in best possible results in a most appropriate economical combination.

**Definition**

“Multimedia is the exciting combination of computer hardware and software that allows you to integrate video, animation, audio, graphics, and test resources to develop effective presentations on an affordable desktop computer.” (Fenrich, 1997).

Multimedia is characterized by the presence of text, pictures, sound, animation and video; some or all of which are organized into some coherent program (Phillips, 1997)

Multimedia approach is an approach of teaching in which different mediums are incorporated to make the teaching-learning more effective, enthusiastic, inspirational, meaningful & interesting.

The term multimedia approach to teaching-learning may be reffered to the use of appropriate and carefully selected varieties of learning experiences which, when presented to the learner through selected teaching strategies, will reinforce and strengthen one another in such a way that the learner will achieve predetermined objectives in an effective way. (Pakiam, 1986)

It is one of the important innovations in the field of education technology to improve the process & product of education or teaching.
Characteristics Of Multimedia

- Multimedia calls for the use of a number of media, devices and techniques for teaching-learning.
- Multimedia approach is the contribution and net result of the researches and experiments going on in the subject of education technology for improving the process and products of the act of teaching-learning.
- The variety of media are carefully selected as to prove quite effective in providing learning experiences to the learners for achieving the pre-determined teaching-learning objectives.
- These media are so selected and planned as to yield in best possible results in a most appropriate, economical combination.
- While selecting different media for adopting multimedia approach it is cared that the presence of one must increase the effect of others.
- Multimedia approach asks for the judicious and planned use of the hardware and software available in the field of educational technology.
- In multimedia approach the several media and techniques can be effectively used as appropriate vehicles for the needed communication of ideas in the process of teaching-learning.
Major Classification Of Multimedia

I. In terms of Methods, Strategies, Approaches, Technique..etc.

Method

Teacher initiated method
- Lecture
- Lecture cum demonstration
- Historical
- Discussion

Student Initiated method
- Project
- Problem solving
- Heuristic
- Laboratory
- Discovery
- Constructivist

Approaches

- Factual
- Conceptual
- Inductive
- Deductive
- Constructivist
- Interdisciplinary
- Multi-medium

Mass Instructional Techniques

- Seminar
- Group discussion
- Debate
- Brain storming
- Peer tutoring
- Role play
- Conceptual Mapping
Self Instructional Techniques/Auto/Individualised

- Programmed Instructions (PI)
- Computer Assisted Instruction (CAI)
- Module

II. Auto Instructional Techniques

a) Programmed Instructions (PI)
b) Computer Assisted Instruction (CAI)
c) Module
d) Instructions through teaching machine.

Features

- Learner can proceed at his own speed or pace.
- Content: - Small bit of information called frames.
- Active response.
- Immediate feedback.
- Reinforcement.
- Self-valuation.

III. In terms of Mass Communication

- Radio
- Television
- Newspaper
- Open schools
- Correspondence course
- University programs.
- Distance education.
IV. In terms of Audio-Visual Aid material & Equipments.

a. Audio-Visual Aid materials:-
   1. Graphical material
   2. Pictures
   3. Diagrams
   4. Drawings
   5. Cartoons
   6. Maps
   7. Posters
   8. Comics

b. 3-D Materials:-
   1. Models
   2. Specimens
   3. Living & Non-living objects.

c. Projective Aid.
   1. Slide projector
   2. Film strip projector
   3. Overhead projector (OHP)

d. Video lesson.

e. Radio, TV & Video.

V. In terms of Gaining Living Experience.

1. Through demonstration.
2. Through dramatization.
3. Through role play.
4. Field trip.
5. Visits to museum, zoos, botanical garden.
6. Laboratory experience.
7. Library experience.
VI. In terms of Teaching & Reading Materials.

a. Text books.
b. Hand books.
c. Source books.
d. Work books.
e. Periodical journals.
f. Magazines.
g. Idea generating books.
h. Net sources.
ROLE OF TEACHER IN MULTIMEDIA APPROACH

- The teacher has to learn and adopt a number of methods and techniques like question – answer, demonstrating, problem solving, analytic – synthetic, assignment depending the demands of teaching-learning situation.
- Teacher has to learn the use and application of different media, select and utilize them in proper combination for the attainment of teaching-learning objectives in a particular instructional situation.
- Teacher has to gain mastery over the use of different media in terms of methods and strategies, auto instructions, mass instruction media, a-v aids, media for gaining living experiences, teaching and reading materials.
- He has to make his students active participants in the process of learning instead of remaining passive.
- The teacher should design the learning experiences in such a way that the students may be able to proceed on the path of learning quite independently.
- The teacher has to lead his students for independent individualized learning with the use of television lessons, audio-video cassette, recorded and printed programmed materials, teaching machine, and CAI etc.
- The teacher has to make learning a living and co-operative process by giving group activities like seminar, symposium, workshops and interacting with the people in real work situation.
- The lecturer has to play a very constructive role in making his students learn the things in a quite practical way by giving through concrete and living experiences.
ORGANISATIONAL IMPLICATION

Adoption of multimedia approach to teaching –learning required drastic changes in the organizational and administrative set up of our educational system.

I. There is a need of sound infrastructure and needed facilities for the adoption of multi-media approach like

- Black board, bulletin board and other display board
- Hall and dark room facilities for showing films and using slides and other projective aid materials.
- Library and reading room facilities
- Laboratory, workshop and other essential facilities for useful practical experience.
- Audio-visual library containing useful software material and hardware equipment like picture , chart, maps, globes, specimen-model slides, films, audio and video cassettes, audio and recording instruments, projectors, teaching machines , program learning text material and packages, computer and computer aided instructional materials …etc
- Facilities and provisions for production , repair and maintenance of the audio- visual aid materials and equipments.
- The availability of trained and interested teachers for making use of the material and media in the best possible way.

II. There will arise a need of bringing necessary dynamicity and flexibility in the existing school time table and programms. Normal school programms and time table do not cater to the needs and requirments of multimedia approach. The adoption of multimedia need relevant changes in the present organizational set up of our schools,
III. It will necessitate the setting up of proper agencies for co-ordinating the efforts of mass media for providing useful learning experiences to school children distance education learners.

IV. There will arise a need of providing training to the teachers for making proper use of multimedia approach. It will give relevant improvements in the curriculam of teachers training at various level.

V. Lastly but not the least there is an overall need of bringing changes in the attitude of teachers and also of the leaners for the successful adoption of multimedia approach. The media need to be utilized in such a co-operative way as to encourage active participation and involvement of the learners in realization of the set objectives.
ADVANTAGES OF MULTIMEDIA TECHNIQUES

- Make the teaching-learning process more effective, meaningful, interesting & enthusiastic.
- It brings life into classroom situations.
- It provides variety & flexibility to classroom learning.
- It helps to relieve the teachers from daily routine work.
- It reduces the effect of teachers to some extent.
- It provides individualized instructions – Provides opportunities to the learner to learn in his/her own pace/speed.
- It also provides mass education – Provides opportunity to educate a group of students at time.
- It helps to retain the information for a longer time in our memory.
- It provides direct or firsthand experience to the students.
- It motivates the learner for effective learning.
- Provides novelty/reality in classroom.
- It captures attention of students in learning process.
- Helps to create interest in learning process.
- Helps to develop curiosity in learning process.
- Helps in all round development of personality in students.

Specific uses of multimedia

- drill and practice to master basic skills
- the development of writing skill
- problem solving
• understanding abstract mathematics and science concepts
• simulation in science and mathematics
• manipulation of data
• acquisition of computer skills for general purposes, and for business and vocational training
• access and communication to understand populations and students
• access for teachers and students in remote locations
• individualized and cooperative learning
• management and administration of classroom activities

**Educational Benefits of Multimedia tools**
(from an Educator's Perspective):

• Provide students with opportunities to represent and express their prior knowledge.
• "Allow students to function as designers, using tools for analyzing the world, accessing and interpreting information, organizing their personal knowledge, and representing what they know to others."
• Multimedia applications engage students and provide valuable learning opportunities.
• Empower students to create and design rather than "absorbing representations created by others."
• "Encourages deep reflective thinking.
• Create personally meaningful learning opportunities.
Educational Benefits of Multimedia tools
(from the Student's Perspective):

Giving students an opportunity to produce documents of their own provides several educational advantages.

- Students that experience the technical steps needed to produce effective multimedia documents become better consumers of multimedia documents produced by others.
- Students indicate they learn the material included in their presentation at a much greater depth than in traditional writing projects.
- Students work with the same information from four perspectives: 1) as researcher, they must locate and select the information needed to understand the chosen topic; 2) as authors, they must consider their intended audience and decide what amount of information is needed to give their readers an understanding of the topic; 3) as designers, they must select the appropriate media to share the concepts selected; and 4) as writers, they must find a way to fit the information to the container including the manner of linking the information for others to retrieve (Smith, 1993). All of these contribute to student learning and help to explain the improved student learning that is often associated with IT-assisted PBL.

There is another aspect to developing multimedia documents that empowers students. Students quickly recognize that their electronic documents can be easily shared. Because of this, students place a greater value on producing a product that is of high standard. An audience of one—the teacher—is less demanding than an audience of many—particularly one’s peers. Students quickly recognize that publishing a multimedia document that communicates effectively requires attention to both the content and the design of the document.
CONCLUSION

Multimedia approach has become an inevitable part in the teaching–learning process. Multimedia approach facilitates the task of attaining desired teaching–learning objectives on the path of teaching–learning in a quite effective way.

Multimedia approach calls for the use of a number of medias, devices, and techniques for teaching–learning. The several medias and techniques can be effectively used as appropriate vehicles for the needed communication of ideas in the process of teaching–learning.

Multimedia approach in terms of methods, techniques and materials bring life in the process of teaching–learning. It equips the teachers for better teaching and the learners for better learning. It provides training for the utilization of a number of senses—sight, touch and taste for gaining the direct and lively experiences.
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