Educational psychology

3rd major Education.

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Unit 1: Learning & Educational Psychology

Meaning of Learning in education with its concept & definition

Why is it important to know about the Meaning of learning in education? It is important for a teacher to know about learning, its concept and meaning because teaching is not complete without learning. Both teaching and learning complement each other. A teacher must know about how learners learn and this is the reason teacher gain knowledge about concept and meaning of learning in education.

Concept of Learning

Concept of learning is of huge importance in human behavior. Human being goes on learning from birth till death. Albert Einstein in one of his quotes said that

"Once you stop learning you start dying"

Learning is a natural phenomenon which is natural to all organisms including both humans and animals. Learning affects a child's development. A child learns new

habits only through the process of learning and through imitated traditions and customs. Intellectual skills are also developed through learning. The decision of right and wrong, the concepts of justice and aesthetic sense, etc. develop through learning. This process of learning continues throughout life. Learning is the basis of maturation. Learning affects our,

- Language
- Customs and traditions
- Attitudes and beliefs
- personalities
- goals

In fact, it would not be wrong to say that learning affects all aspects of our life. Learning is a key concept of Psychology. Learning phenomenon is very important for the development of human beings. Various psychologists have explained learning from a different point of views. According to behaviorists,

Learning is the modification of behavior as a result of experience. The child brings changes in his behavior after gaining experiences from the environment.

Everything a learner does or thinks is learning. Learning is a relatively permanent change in behavior of the learner It even brings changes in the personality traits of the learner.

Meaning of learning and learning definition in education

Various psychologists and educationists have defined the concept and meaning of learning in their own way. Some define as a process, some as a change in performance and some define learning as acquisition and retention of knowledge.

According to,

Gestalt's view,

"The basis of learning is to gain knowledge after observing the whole structure. Responding towards the entire situation is learning."

Kurt Lewin has presented the field view of learning and explained

The learning as the direct cognitive organization of a situation. Motivation has a significant role & place in learning."

According to **Woodworth**,

"The process of acquiring new knowledge and new responses is the process of learning."

G.D. Boaz(1984) observes learning as a process. According to him

"Learning is the process by which the individuals acquires various habits, knowledge, and attitudes that are necessary to meet the demands of life, in general"

According to **Cronbach**,

"Leaning is shown by a change in behavior as a result of experience."

Pavlov has said, "

Learning is habit formation resulting from conditioning."

According to **Kingsley and Garry**,

"Learning is a process by which behavior is originated or change through practice or training."

In the words of **C.E.Skinner**,

"Learning is the process of progressive behavior adoption."

As a result of studying and analysis of the above-mentioned definitions of learning in education, the following facts come to the light :

1. Learning is a modification in behavior.
2. Learning is the organization of behavior.
3. Learning is the confirmation of a new process.

The meaning of learning explained:

1. Learning is a broad term. Learning includes all activities which affect children. Along with the growing process, the mental development of the child occurs. As a result, changes take place in his behavior continuously. The child goes on learning through experiences.

2. From a psychological point of view, learning has been explained as a stimulus-response process. According to the point of view, the establishment of the stimulus-response relationship is known as leaning.

Some other facts also come before us relating to the learning, such as-

(i) Learning is a process through which the behavior of the child changes or modifies.

(ii) Learning is predicted on the basis of changes in behavior.

(iii) These changes can be negative or positive.

(iv) The changes due to learning are permanent.

(v) Changes in the behavior are the results of experiences.

(vi) Leaning can be termed as a mental process.

Unit 1: Introduction to Educational Psychology

(Handout I)

What is Psychology?

The word, 'Psychology' is derived from two Greek words, 'Psyche' and 'Logos'. Psyche means 'soul' and 'Logos' means 'science'. Thus psychology was first defined as the 'science of soul".

Psychology as the Science of Soul. In ancient days, the Greek philosophers like Plato and Aristotle interpreted Psychology as the science of the soul and studied it as a branch of Philosophy. But soul is something metaphysical. It cannot be seen, observed and touched and we cannot make scientific experiments on soul.

Psychology as the Science of the Mind. It was the German philosopher Emmanuel Kant who defined Psychology as the science of the mind. William James (1892) defined psychology as the science of mental processes. But the word 'mind' is also quite ambiguous as there was confusion regarding the nature and functions of mind.

Psychology as the Science of Consciousness. Modern psychologists defined psychology as the "Science of Consciousness". James Sully (1884) defined psychology as the "Science of the Inner World". Wilhelm Wundt (1892) defined psychology as the science which studies the "internal experiences'. But there are three levels of consciousness – conscious, subconscious and the unconscious and so this definition also was not accepted by some.

Psychology as the Science of Behaviour. At the beginning of the 20th century, when psychologists attempted to develop psychology into a pure science, it came to be defined as the science of behaviour. The term behaviour was popularized by J.B. Watson. Other exponents are William McDugall and W.B. Pillsbury. According to R.S. Woodworth, "First Psychology lost its soul, then it lost its mind, then lost its consciousness. It still has behaviour of a sort."

Definitions of Psychology

B.F. Skinner defined, "Psychology is the science of behaviour and experience." Crow and Crow, "Psychology is the study of human behaviour and human relationships." William Mc Dougall, "Psychology is the science which aims to give us better understanding and control of

the behaviour of the organism as a whole." Kurt Koffka, "Psychology is the scientific study of the behaviour of living creatures in their contact with the outer world."

Meaning of Educational Psychology

Educational psychology is one of the branches of psychology to study the behaviour of the learner in relation to his education. As specialized branch of psychology concerns itself with suggesting ways and means of improving the process and products of education, enabling the teacher to teach effectively and the learners to learn effectively with the minimum effort.

It is thus designated as the service of education. It has simplified the tasks and improved the efficiency of the teacher or all those connected in the process and products of education by supplying them with the essential knowledge and skills in much need the same way as science and technology has helped in making possible maximum output through minimum input in terms of time and labour in our day-to-day activities.

Educational psychology is that branch of psychology which deals with the application of psychological findings in the field of education. In other words it deals with the human behaviour in educational situations. It is the systematic study of the development of the individual in the educational settings.

It is the scientific study of human behaviour by which it can be understood, predicated and directed by education to achieve goals of life.

Definitions of Educational Psychology

- **C.E. Skinner:** "Educational psychology is the branch of psychology which deals with teaching and learning".
- **Crow and Crow:** "Educational psychology describes and explains learning experience of an individual from birth to old age".
- **E. A. Peel:** "Educational psychology is the science of education".
- **Trow** describes, "Educational psychology is the study of psychological aspects of educational situations".
- **Stephens** says, "Educational psychology is the study of educational growth and development".
- **Judd** describes educational psychology as, "a scientific study of the life stages in the development of an individual from the time he is born until he becomes an adult."

In the words of **E.A. Peel,** "Educational psychology helps the teacher to understand the development of his pupils, the range and limits of their capacities, the processes by which they learn and their social relationships."

https://www.youtube.com/watch?v=fGPoKuVgj2w

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(In this way, the work of the Educational Psychologist resembles with that of an Engineer, who is a technical expert. The Engineer supplies all the knowledge and skill essential for the accomplishment of the job satisfactorily… for example, construction of a bridge.). In the same way Educational Psychologists, who is a technical expert in the field of Education, supplies all the information, principles and techniques essential for:

· Understanding the behaviour of the pupil in response to educational environment and

· Desired modification of his behaviour to bring an all-round development of his personality.

Thus, Educational Psychology concerned primarily with understanding the processes of teaching and learning that take place within formal environments and developing ways of improving those methods. It covers important topics like learning theories; teaching methods; motivation; cognitive, emotional, and moral development; and parent-child relationships etc.

In short, it is the scientific discipline that addresses the questions: "Why do some students learn more than others?" and "What can be done to improve that learning?"

https://blog.learnfasthq.com/9-tips-to-improve-how-you-learn-your-learning-capacity

The Nature of Educational Psychology:

Its nature is scientific as it has been accepted that it is a Science of Education. We can summarize the nature of Educational Psychology in the following ways:

1. **Educational Psychology is a science.** (Science is a branch of study concerned with observation of facts and establishment of verifiable general laws. Science employs certain objective methods for the collection of data. It has its objectives of understanding, explaining, predicting and control of facts.) Like any other science, educational psychology has also developed objective methods of collection of data. It also aims at understanding, predicting and controlling human behaviour.
2. **Educational Psychology is a natural science.** An educational psychologist conducts his investigations, gathers his data and reaches his conclusions in exactly the same manner as physicist or the biologist.
3. **Educational psychology is a social science.** Like the sociologist, anthropologist, economist or political scientist, the educational psychologist studies human beings and their sociability.
4. **Educational psychology is a positive science.** Normative science like Logic or Ethics deals with facts as they ought to be. A positive science deals with facts as they are or as they operate. Educational psychology studies the child's behaviour as it is, not, as it ought to be. So it is a positive science.
5. **Educational psychology is an applied science.** It is the application of psychological principles in the field of education. By applying the principles and techniques of psychology, it tries to study the behaviour and experiences of the pupils. As a branch of psychology it is

parallel to any other applied psychology. For example, educational psychology draws heavily facts from such areas as developmental psychology, clinical psychology, abnormal psychology and social psychology.

6. **Educational psychology is a developing or growing science.** It is concerned with new and ever new researches. As research findings accumulate, educational psychologists get better insight into the child's nature and behaviour.

Thus, educational psychology is an applied, positive, social, specific and practical science. While general science deals with behaviour of the individuals in various spheres, educational psychology studies the behaviour of the individual in educational sphere only.

Nature of Educational psychology as scientific because:

The nature of educational psychology is regarded as scientific because it is organized, systematic and universally accepted body, wherein the facts remain constantly in search of truth through research and experimentation. Employs scientific methods in its study and its results are subjected to further verification and modification.

1. **Laws of educational psychology are universal:** Educational psychology possesses a well-organized, systematic and universally accepted body of facts supported by the relevant psychological laws and principles.
2. **Scientific methods:** Educational psychology employs scientific methods and adopts a scientific approach for studying the learner's behaviour such as observation, experimentation, clinical investigation and generalization, etc.
3. **Constant search of the truth:** The results of any study in educational psychology can be challenged and are modified or altered in terms of the latest explanations and findings. So the findings of any study are never taken as absolute and permanent.
4. **Reliability:** Educational psychology does not accept hearsay and not take anything for granted. It emphasizes that essentially there is some definite causes linked with a behaviour and the causes of this behaviour are not related to supernatural phenomena.
5. **Positive science:** Educational psychology is a positive science rather than a normative science.
6. **Applied behavioural science:** Educational psychology is an applied/behavioural science.
7. **Developing positive science:** Educational psychology cannot claim the status of a developed positive science like other natural or applied sciences. It is considered as one of the developing positive sciences of the learner's behaviour.

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Objectives of Educational Psychology:

The general objectives of educational psychology are:

1. To provide a body of facts and methods which can be used in solving teaching problems.
2. To develop a scientific and problem-solving attitude.
3. To train in thinking psychologically about educational problems.

Education vs Schooling

Even though schooling is frequently misidentified as education, there is much difference between education and schooling. The term education encompasses basically two meanings. They are formal and informal ways of gaining knowledge while schooling stands for the initial and secondary stage of formal education system that take place in school. Education as mentioned above can take place not only through informal ways such as learning from peers, life experiences, by reading or learning things through online sources but also through formal means. For instance, through educational institutions like school, university or even training colleges. Thus, it becomes clear schooling is one branch of formal education in the wide arena of education.

https://www.youtube.com/watch?v=53siPqzCoDE

Teaching Objectives of Educational Psychology:

1. To develop an understanding and appreciation of the dietary and environmental factors which underline learning ability.
2. To provide base for understanding the nature and principles of learning and to supply the techniques for its improvement.
3. To understand and appreciated factors influencing individual ability to learn.
4. To provide understanding of the external factors like training aids, libraries, classrooms which are largely within the control of the teacher and the institution.
5. To evaluate teaching efficiency.
6. To develop an appreciation of the individual and importance of the individual with their individual differences.

Scope of Educational Psychology:

Scope of educational psychology tells us the areas of application. In other words, it can be called the subject matter of educational psychology.

1. **Human Behaviour.** It studies human behaviour in the educational context. Psychology is the study of behaviour and education aims at modification of behaviour. Hence the influence of Educational Psychology has to be reflected in all aspects of education.

What are the other variables which Educational Psychology concern ?

2. **Growth and development.** It studies the principles governing growth and development. The insight provided by the study will help in scientifically planning and executing learner oriented programmes of education.
3. **The Learner.** The subject-matter of educational psychology is knitted around the learner. Therefore, the need of knowing the learner and the techniques of knowing him well. The topics include – the innate abilities and capacities of the individuals, individual differences and their measurements, the overt, covert, conscious as well as unconscious behaviour of the learner, the characteristics of his growth and development and each stage beginning from childhood to adulthood.
4. **The Learning Experiences.** Educational Psychology helps in deciding what learning experiences are desirable, at what stage of the growth and development of the learner, so that these experiences can be acquired with a greater ease and satisfaction.
5. **Learning process:** After knowing the learner and deciding what learning experiences are to be provided, Educational Psychology moves on to the laws, principles and theories of learning. Other items in the learning process are remembering and forgetting, perceiving, concept formation, thinking and reasoning, problem solving, transfer of learning, ways and means of effective learning etc.
6. **Learning Situation or Environment.** Here we deal with the environmental factors and learning situations which come midway between the learner and the teacher. Topics like classroom climate and group dynamics, techniques and aids that facilitate learning and evaluation, techniques and practices, guidance and counselling etc. For the smooth functioning of the teaching-learning process.

What are the differences between the moderator and mediator variables ?

7. **Evaluation of learning process:** Some forms of evaluation inevitable in teaching. Also in all fields of activity when judgments used to be made, evaluation plays an important role. Even when we want to cross a road we make a judgment whether it is safe to cross the road. Effectiveness of learning process always depends on the evaluation as it gives the knowledge of result which helps the learner as well as the teacher to modify or correct oneself. Educational psychology guides are by explaining the different methods of assessment contributing to the effectiveness of learning process. Knowing the learner, acquiring the essential skill in teaching and evaluation are the focal points in the study of educational psychology.
8. **Individual differences.** It is universally accepted that every individual differs from every other individual. This idea has been brought to light by Educational Psychology.
9. **Personality and adjustment.** Education has been defined as the all-round development of the personality of an individual. If educational has to fulfil this function all instructional programmes have to be based on the principles governing the nature and development of personality.
10. **The Teacher:** The teacher is a potent force is any scheme of teaching and learning process. It discusses the role of the teacher. It emphasizes the need of 'knowing thyself' for a teacher to play his role properly in the process of education. His conflicts, motivation. Anxiety, adjustment, level of aspiration etc. It throws light on the essential personality traits, interests, aptitudes, the characteristics of effective teaching etc. so as to inspire him for becoming a successful teacher.

11. **Guidance and Counselling.** Education is nothing by providing guidance and counselling required for the proper development of the child. This is very true, especially in the light of the extremely complex and problematic situation one has to face in the fast growing world. Educational psychology has come to the rescue by developing principles and practical measures helpful for providing effective guidance and counselling.

We can conclude by saying that Educational Psychology is narrower in scope than general psychology. While general psychology deals with the behaviour of the individual in a general way, educational psychology in concerned with the behaviour of the learner in an educational setting.

Relevance Of Educational Psychology For Teachers

Educational psychology has contributed considerably to the creation of the modern system of education. The knowledge of educational psychology helps the teacher in the following ways:

1. **To understand the Stages of Development:** Psychology has clearly shown that human life passes through different stages of development before it reaches adulthood. They are infancy, childhood, adolescence and adulthood. Psychologists have also thoroughly studied the characteristic behaviour patterns in these different periods of life. Identification of these periods with different sets of characteristics and attributes as regards physical, mental and emotional development greatly help educationists to design curriculum and determine appropriate methods of teaching for students at different stages.

2. **To Know the Learner:** The child or the learner is the key factor in the teaching-learning process. Educational psychology helps the teacher to know his interests, attitudes, aptitudes and the other acquired or innate capacities and abilities; to know the stage of development linked with his social, emotional, intellectual, physical and aesthetic needs; to know his level of aspiration, his conscious and unconscious behaviour; his motivational and group behaviour; his conflicts, desires and other aspects of his mental health. So that perfect guidance and help can be provided and positive attitude towards the learner can be formed.

3. **To Understand the Nature of Classroom Learning:** Educational Psychology helps the teacher to adapt and adjust his teaching according to the level of the learners. A teacher is teaching in a class but a large number of students do not understand the subject-matter which is being taught. To deal with the students effectively in the class the teacher must have the knowledge of the various approaches to the learning process, principles, laws and factors affecting it then only he/she can apply remedial measures in the learning situation.

4. **To Understand the Individual Differences:** No two persons are exactly alike. Pupils differ in their level of intelligence, aptitudes, likes and dislikes and in other propensities and potentialities. There are gifted, backward, physically and mentally challenged children. Thus, psychology tells the teacher about the individual differences among the students in the class and the procedure, methodology and techniques to be adopted for them.

5. **To Solve Classroom Problems:** There are innumerable problems like truancy, bullying, peer pressure, ethnic tensions, cheating in tests etc. Educational Psychology helps to equip the

teacher by studying the characteristics of the problem children, the dynamics of the group, behavioural characteristics and adjustments.

6. **To develop Necessary Skills and Interest in Teaching:** Educational psychology helps the teacher to acquire and develop necessary qualities and skills to deal with the problems created by the pupils, maintain a healthy atmosphere in the classroom and show concern regarding the progress of the child.

7. **To Understand Effective Methods of Teaching:** Educational Psychology has discovered several new approaches, principles, methods and techniques of teaching which are very helpful in today's teaching-learning process. Educational psychology tells us how significant play and recreation are for the children and how play-way methods turn learning into an interesting task.

8. **To Understand the Influence of Heredity and Environment on the Child:** Educational psychology helps the teacher to know that the child is the product of heredity and environment. They are the two sides of a coin. Both play a prominent part in the all-round development of the child. While the child is born with a number of hereditary qualities, environment helps them to be modified according to the requirements of the society.

9. **To Understand the Mental Health of the Child:** Educational Psychology helps the teacher to know what are the factors responsible for the mental ill-health and maladjustment of a student and to suggest improvement thereof. Besides this, it also provides the teacher with necessary insight to improve his own mental status to cope up with the situation.

Search about one paper which studied the influence of Heredity on the child ?

10. **To Understand the Procedure of Curriculum Construction:** Curriculum is an integral part of the teaching-learning process. Curriculum should be child-centred and fulfil the motives and psychological needs of the individual because child capacities differ from stage to stage. Educational psychology helps the teacher to suggest ways and means to curriculum framers to prepare sound and balanced curriculum for the children.

11. **To Provide Guidance and Counselling:** Today guidance to a child at every stage of life is needed because psychological abilities, interests and learning styles differ from person to person. Similarly, what courses of study the child should undertake in future is also a vital question. All these can be answered well if the teacher knows the psychology of children.

12. **To Understand Principles of Evaluation and Assessment:** Evaluation is an integral part of the teaching-learning process. How to test the potentialities of the child depends upon the evaluation techniques. The development of the different types of psychological tests for the evaluation of the individual is a distinct contribution of educational psychology.

13. **To inculcate Positive and Creative Discipline:** The slogan of the traditional teachers was "spare the rod and spoil the child." Flogging the child was the chief instrument. Educational Psychology has replaced the repressive system with the preventive system. Now teachers adopt a cooperative and scientific approach to modify the behaviour of the students. Emphasis is laid on self-discipline through creative and constructive activities.

14. **Educational Psychology and Research:** Educational psychologists conduct research to improve the behaviour of human beings in the educational situation. For this purpose it helps in developing tools and devices to measure the performance and suggest remedial measures thereof.

15. **To Know Himself/Herself:** Educational Psychology helps the teacher to know about himself/herself. His/her own behaviour pattern, personality characteristics, likes and dislikes,

motivation, anxiety, conflicts, adjustment etc. All this knowledge helps him in growing as a successful teacher.

16. **Educational Psychology Helps in Professional Growth, Changing Attitude and Innovative Thinking:** Inside the classroom, educational psychology has enabled the teacher to achieve proper conditioning of pupils by achieving and directing classroom programmes on human lives. Not only this, educational psychologists are busy in finding out innovations in the field of education. These innovations will bring about professional growth of the teacher.

In **Conclusion,** we can say that educational psychology has contributed considerably to the creation of the modern system of education. In teaching, we are dealing with three elements – the teacher, the student, and the subject. It has helped teachers, headmasters, administrators, inspectors, guidance and counselling workers, social workers to significantly develop an impartial and sympathetic attitude towards children and form them into integrated personalities.

Methods

Educational psychology like any other science, makes use of scientific methods in collecting data about learner, learning process and evaluation.

1. To get facts about learning behaviour rather than opinions.
2. To get good information so that the learner can be guided.

Educational psychology as a science of education deals with the problems of teaching and learning and helps the teacher in his task of modifying the learners behaviour and bringing about an all-round development of his personality.

Therefore, while in psychology the scope of study and the field of operation are extended to cover the behaviour of all living organisms related to all their life activities in educational psychology, the scope of such behavioural study is limited within the confines of the teaching, learning processes, i.e. studying the behaviour of the learners in relation to their educational environment and the all-round development of their personality.

Thus the subject of educational psychology must be centred around the process of teaching and learning for enabling the teacher and learner to do their jobs as satisfactory as possible. Thus educational psychology definitely covers the topics helpful in suggesting principles and techniques for the selection of the learning experience appropriate to each developmental stage of the childhood.

Hence it includes the study of the behavior of the learner in the educational environment. It also includes the topics and content which are specifically meant for improving the process and products of education mainly centred around the teaching learning process.

Therefore, this study includes:

1. In knowing the learner.
2. Enabling the teacher to know their self-strengths, limitations and to acquire essential teaching skills.
3. Selection and organization of proper learning.
4. Experiences suited to the individuality and developmental stages of the learner.
5. Suggesting suitable methods and techniques for providing the desired learning experience.
6. In arranging proper learner situation.

Methods of Educational Psychology:

Educational psychology is the scientific or systematic study of the behaviour of the learner in relation to his educational environment. This behaviour can be studied by a simple approach called observation. However, this observation method has to be adjusted depending upon the conditions in which observations have to be made, the procedure and tools adopted.

The following are the various methods of observation under different situations:

1. Introspection method: This method which is the oldest method of studying behaviour where the learner should make a self-observation, i.e. looking inwards. For example, when a person is angry he may be asked to determine how he felt during that period of anger by his own observation.

This method is simple, direct, cheap and reveals one's behaviour. But this method lacks reliability and can be used only for adult normal human beings. This method requires the support of other methods which are more reliable.

2. Observation method: In this method the learner's behaviour is observed under natural conditions by other individuals. Such observation will be interpreted according to the perception of the observer. This helps to find out behaviour by observing a person's external behaviour.

For example, if a person frowns we can say that he is angry. But when we are studying behaviour in natural conditions we have to wait for the event to take place. This method is helpful in studying the behaviour of the children. However, this method will explain only observed behaviour, subjectivity of the investigation may affect the results.

3. Experimental method: In this method, behaviour is observed and recorded under controlled conditions. This is done in psychological laboratory or in classrooms or outside the classrooms

in certain physical or social environment. Accordingly the cause and effect relationships are established.

Theories of behaviour can be developed. These experiments require the creation of artificial environment. Therefore, the scope is limited. Human behaviour is very dynamic and unpredictable. This method is also costly and time consuming.

4. **Case history method:** This method is one of the steps used in the clinical method of studying behaviour. This method is used for those who are suffering from physical or mental disorders. For this the case history has to be made of the earlier experiences of the individual which may be responsible for the present behaviour. Information is also collected from his parents, family, relatives, guardians, neighbours, friends, teachers, and from reports about the individual's past. This information will enable the clinical psychologists to diagnose and suggest treatment if there is any problem. However, this method will be successful only if the clinical researcher is technically efficient. The findings are limited to the individuals observed and the findings cannot be generalized.

Relationship Between Education and Psychology

Psychology is closely related to education. Education is the modification of behaviour in a desirable direction or in a controlled environment and psychology is the study of behaviour or science of behaviour. To modify the behaviour or to bring about some changes in the behaviour it is necessary to study the science of behaviour. Thus, education and psychology are logically related.

The developmental stages of children and characteristics are very essential factors which the teacher must know in order to be a successful teacher. The traditional education was subject centred and teacher dominated. But the modern concept of education has been changed into learning centred to learner centred.

Today's education has become child centred:

It is the child who is to learn according to his needs, interests and capacities. Hence, there is no doubt that a knowledge of psychology is quite essential for planning and organizing any educative effort. For this purpose all the great educators emphasize that education must have a psychological base.

Pestalozzi tried to psychologies education. Montessori and Froebel also advocated that education must be based on psychological principles. Almost all the aspects of education are guided by psychological principles.

Different aspects of education related to psychological principles are as follows:

1. The objectives of education at different stages have a psychological base.

2. Preparation of curriculum for different stages as per the age, ability and capacities of the learner must be based on some of the psychological principles.
3. The teacher employs some of the suitable methods of teaching, appropriate motivational techniques and teaching devices which are also the contributions of educational psychology.
4. Solution of different educational problems through research are also the contribution.
5. Preparation of school time table and timing have also a psychological base.
6. Effective school administration and organization needs a knowledge of psychology.
7. Knowledge of psychology is necessary to study the gifted or the retarded child, the problem child and the maladjusted child.
8. The problem of discipline in the school can be tackled psychologically.
9. Educational psychology provides knowledge about mental health of the teacher.
10. Psychology provides knowledge about evaluation procedure for better learning in the school.
11. Better guidance can be provided for effective learning by studying the psychological traits of the learner.

Besides the above, better students participation in classroom teaching, individualized instruction, group activity, learning by doing etc. has a psychological base. So, we cannot think of education without psychology in modern education scenario.

A Brief History

According to the modern definition of psychology, mind can be analysed functionally into different mental processes—cognitive, conative and emotive and is .expressed through behaviour of the interacting person. Hence psychology is a science of behaviour.

Psychology emerged as a scientific discipline as and when Wilhelm Wundt—the founder of experimental psychology— established the first psychological laboratory at Leipzig in Germany in the year 1879. From that time onward the learned world witnessed a host of renowned psychologists working in different aspects of mental performances and a long intellectual pursuit of psychological discoveries ensured.

This led more and more to the application of theories, branching, specialization, specification of methods as well as more and more qualitative and quantitative sophistication of techniques. One such branching encompasses the educational field and has been termed as Educational Psychology which emerged as a separate discipline, involving the general principles of experimental psychology applied in the field of education.

A great name in the history of educational thoughts in the early 19th century was Pestalozzi who psychologised education by emphasizing upon 'education' as a process of drawing out the functional mind of the individual.

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The next great advance in educational psychology came about mid-nineteenth century when Johann Frederich Herbart, a German professor, formulated an approach to education based directly and avowedly upon psychology.

From the end part of nineteenth century till the beginning of twentieth century a number of famous psychologists started working in different lines of education applying the principles and techniques of general psychology. Among them mention may be made of Francis Galton, the oldest of the founders of educational psychology.

He conducted the first experimental investigation of associationism, tests on reaction time and sensory acuity. Stanley Hall, meanwhile, published his papers using the questionnaire to investigate the minds of children. In 1885, Ebbinghaus published his study on memory and, within the span of six years, events of importance like objective measurement, child psychology and learning experiments, all took place.

To add to the list enriching the movement was Galton's studies on nature-nurture problem, mental inheritance of ability, studies of twins, widespread realizations of individual differences in the psychological sense, various mental and physical developments as well as use of psychological tests and their statistical interpretation (particularly the correlational studies which was later followed by Karl Pearson), rating scales and questionnaires. "His most important theoretical contribution was the distinction in the 'Structure of mind' between a general broad ability of intelligence and special abilities entering only into narrower ranges of activity".

The next major contributor to the foundation of educational psychology was Alfred Binet in the field of intelligence testing. With assistance of Theophile Simon, he developed the first Binet Scale. Then comes John Dewey whose contribution is rather noteworthy in the field of educational philosophy than in the general psychological field.

After Dewey, from the year 1900 to some ten or twelve years more, educational psychology remained more or less in incubation till Edward L. Thorndike came out with his revolutionary 'laws of learning'.

He was possibly the first man to be called an educational psychologist in the modern sense of the term. He studied the art and science of learning very systematically and consistently. Then joined Woodworth with Thorndike and together they worked on transfer of training at the turn of the century.

Thorndike then published three volumes of Educational Psychology between 1913-14 consisting of his original work arising from experimental research. His studies in various

related fields of education opened up new vistas to be trekked by later educational psychologists.

More about Educational Psychology's Scope

Educational psychology embraced over the years various fields of education e.g. intelligence testing, mental abilities, achievement testing, child psychology, developmental psychology, school performance, mental deficiency, curriculum, personality, character, educational measurement and so on and so forth.

In 1910, the Journal of Educational Psychology was first published, to reveal experimental researches on various psychological issues regarding education and their interpretations.

In the recent past the field of educational psychology has become more complex as the vision of what it encompasses has broadened. Originally concerned with learning and measurement its scope has been extended with each succeeding generation to the point where now the newest extension is in social-educational field and a new branch emerged in educational psychology known as educational social psychology.

Can you find the first issues in the Journal of Educational Psychology ?

In conclusion, we may note that the aim of educational psychology is to apply psychological concepts and principles in order to improve educational practice. Educational psychology that has evolved as a new discipline tends to represent all the areas within psychology in general.

These include some distinct areas dealing with human development, individual difference in ability, aptitude and temperament, perception, motivation, learning, thinking, problem-solving, psychopathology, the dynamics of personality and group interactional processes.

The educational scientists have employed two strategies for applying psychology in education. Consequently, two kinds of researches had been advanced in the field of educational psychology; the first is the direct experimental investigation of learning in laboratory and school settings.

The second has been an attempt to distil from basic psychological research the educational proceedings to be employed in teaching-learning situation, implication of learning in its broader perspective (formal and informal learning), and also human nature and its interactions.

In this process educational psychology deals not only with the individual's own psychology and its functioning, but also an awareness of his interacting counterpart, the changing environment—both physical and social.

15 Educational Psychology

Any educational endeavour is actually a learning situation; the task of educational psychology is to study the learner in that situation. The first learning situation outside the family a child (or a learner) encounters is the school, which is again teaching-learning condition oriented. The teacher's duty in this setting is to apply the general propositions received from psychology and apply them in the classroom.

But not one single strategy employed so far had yielded any fruitful result. A more practical oriented strategy is required in order to synthesize the learner, the teacher the instructional techniques and the educational managers on the one hand and producing qualified students to meet the demand of the day, on the other.

The world we live in today is shaped to a considerable degree by the decisions people make—individually and collectively. Any decision-making needs possessing some knowledge and use them in solving problems. In other words, the kind of perceiving, thinking and evaluating that goes into the problem solving has to be considered.

Historically, possession of knowledge and its utilization are learned during the developmental years of the children through interacting with parents, employers, religious and political leaders as well as teachers in the classroom.

The interaction with the teachers is no less important in the process of our lifelong learning even if the exposure to school be brief and transitory (this is stated considering the number of dropouts at the school level in our country). It has an impact in their lives, nevertheless.

Specially in the developing countries like India and South Asia the involvement of young people with teachers and schools is certainly increasing as revealed by survey reports at Governmental level for the last two decades. Teachers do play an active role in the teaching-learning system.

It will not be unreasonable to say that the kind of future we and our children will experience is influenced more by teachers than by any other professional groups.

The world of tomorrow will be shaped not only by what today's children are learning from their teachers, but also by the 'way' they are learning it, for it is the way knowledge is presented that determines how children will learn to solve problems. Thus according to Lindgren (1980), the 'how' of teaching includes not only teaching methods, but also teachers' attitudes and values, and full range of teachers' classroom behaviours.

They serve as 'models' whose way of thinking, behaving, attitudes, advice and manner, the process of acquiring and imparting knowledge are imitated in more ways than they can

imagine. Hence they are influential far beyond their immediate awareness. Therefore, it is necessary that the teachers know consciously their personal psychology in order to understand the psychology of their students.

Meaning of Psychology

The word "psychology" comes from the Greek word (Psyche mean Soul, Logos mean Science), thus the meaning of Psychology is the science of soul.

Education and Psychology

Psychology is the science of behavior, the activities of animate creature, which can be observed and measured in an objective way.

Education in the narrow sense is the modification of behavior of children in a controlled environment. To shape the behavior of the subject and bring some positive or negative changes, it is necessary to study the science of behavior. The developmental stages and characteristics of children are very essential factors from which the teacher must aware in order to be a successful teacher. If the teacher has no knowledge of children psychology, how can we expect from him that he would succeed in bringing about the desirable changes in children?

Definition of Educational Psychology

Educational psychology is the application of psychological findings in the field of education. Educational psychology is the systematic study of the development of the individual within the educational settings. It helps the teacher to understand the students and enhance their skills.

Educational psychology is an applied discipline which combines the two different fields of education and psychology. It is the scientific study of human behavior by which it can be understood, predicted and directed by education to achieve goals of life.

Judd describes educational psychology as, "a scientific study of the life stages in the development of an individual from the time he is born until he becomes an adult."

Contribution of Educational Psychology

One simple question may be asked as to why educational psychology should be taught to prospective teachers in training colleges. The educational psychology helps the teachers in the following ways;

1. To understand developmental characteristics

Children pass through different stages of development in life as infancy, childhood and adolescence. These developmental stages have their own characteristics and demands.

2. To understand the nature of class room learning

With the help of education psychology the teacher understand the students and their need and problems, it help teacher in learning process in general and class-room learning in particular.\

3. To understand individual differences

With the help of psychology teacher understand the individual's differences. Teacher faces a class of 30 to 50 students who have a different range of individual differences. Teacher with the knowledge of education psychology and individual differences may adjust his teaching to the needs and requirements of the class.

4. To understand effective teaching methods

Every day experience shows that lack of proper methods of teaching sometimes results in failure of communication in the classroom. The educational psychology gives us the knowledge of appropriate methods of teaching. It helps in developing new strategies of teaching.

5. Knowledge of mental health

Mental health of the student and teacher is very important for efficient learning. With the help of educational psychology, the teacher can understand the various factors, which are responsible for the mental health and maladjustment.

6. Curriculum construction

Psychological principles are also used in formulating curriculum for different stages.

7. Measurement of learning out-comes

Psychological tools help the teachers to evaluate the learning out-come of the students. it helps the teacher to evaluate his own performance.

8. Guidance for the education of exceptional children

Most important contribution of educational psychology is the provision and organization of the educational psychology is the provision and organization of the education for the education of sub normal children.

Methods of educational psychology

Different types of techniques are used by researchers to collect data and conduct research studies. With the increasing use of educational technology in education, psychology and other social sciences, new research strategies are evolved.

Following are the important methods and techniques of collecting data are:

1. Introspection
2. Observation
3. Case study
4. Survey or differential methods
5. Scientific or experimental method

1. Introspection

Historically introspection is the oldest method of all, which was formerly used in philosophy, and then in psychology to collect data about the conscious experience of the subject. Introspection means to see with in one self or self-observation. To understand one's own mental health and the state of mind. This method was developed by the structuralists in psychology who defined psychology as the study of conscious experiences of the individual. Introspection has some advantages and disadvantages;

- **Merits**:

1. It gives information about one's own self which is difficult by other methods.

2. It is an easy method and needs no equipment

3. It makes a base for other methods such as experimental and observation method

- **Demerits**:

1. This method is subjective in nature and lacks scientific objectivity

2. the most serious objection against this method is that human mind is not static like inanimate objects such as stone or chairs etc. our mental process is under constant changes so when one attempts to introspect, the state of mental process disappears and it becomes a retrospect.

3. The human mind is divided in two parts. One is his own mental operation and the other is the object to which this mental operation is directed. To expect any individual to attend the workings of his own mind during a mental process, especially in a complex and emotional state such as anger or fear, is a mistaken idea. Ross commenting on the limitation of introspection said, "The observer and the observed are the same, the mind is both the field and the instrument of observation

4. Introspection cannot be employed on children and insane propel.

5. There are conflicting reports, as regards the findings collected from different introspectionists.

2. Observation

With the development of psychology as an objective science of behavior, the method of introspection was replaced by careful observation of human and animal behavior. Observation literally means looking outside oneself. It is a very important method for collecting data in almost all type of research studies. Different type of Observation used in research, direct or indirect, scheduled or unscheduled, natural or artificial, participant and non-participant. But there are two basic types of observation. They are;

1. Natural observation

In natural observation the observer observe the specific behavioral and characteristics of subjects in natural settings and the subject does not aware of the fact that their behavior is being observed by someone. The teacher can observe the behavior of his student in the playground or in any other social gathering without making him conscious. Natural observation can be done anywhere without any tools.

2. Participant observation

In participant observation the observer became the part of the group which he wants to observe. Observational study is particularly very important and produces significant results on developmental characteristics of children. No doubt that observation is a scientific technique of collecting data, whose results can be verified and relied upon to locate behavioral problems

- **Merits**:

1. This type of observation is a natural and normal way of knowing the external world but also the mind of the subject

2. This method is objective in nature and free form personal bias and prejudice.

3. Through this method we can observe as many children as we like

4. This method id quite suitable for children and abnormal person who cannot be examined through introspection.

5. This can be used anytime and anywhere

- **Demerits:**

1. Observation is useful only for collecting data about overt behavior which is manifested in a number of activities. This overt behavior does not provide reliable information regarding the internal mental process. We can only guess about the mental state of the individual on the basis of overt behavior which may or may not be true. It becomes very difficult to draw any conclusion in case of adults who can hide their actual behavior in the presence of the observer.

2. Subjectivity of interpretation is another limitation of this method. The observer may interpret his sensation of external stimulus on the bias of his past experience. He may be biased in his interpretation. It has also been found in some studies that strong personal interests tend to make researcher see only those things which he wants to see.

3. Observation is subject to two types of errors, sampling error and observer error. The first error occurs because of inadequacies of selecting situation to be observed. The observer error may be due to knowledge and background of the situation to be observed. Because some time the observer is not familiar with the total situation and hence he may commit error.

3. Experimental Method

This method has been developed in psychology by the continuous efforts by psychologists to make objective and scientific study of human behavior. One of the major contributions of the behaviorism is the development of experimental method to understand, control and predict behavior. It is the most precise, planned systematic observation. The experimental method uses a systematic procedure called experimental design. Experimental design provides important guide lines to the researcher to carry out his research systematically. The lay out of the design depends on the nature of the problem that an investigator wants to investigate. The lay out or design of the experimental method is as follows:

1. Selecting a research topic

2. Formulating hypotheses

3. Selecting an appropriate design

4. Collect data

5. Analyzing and interpreting data

6. Discussion and conclusions

Experiments may be conducted in a laboratory or in the classroom or anywhere else in the community. Experimentation involves comparison between behavior of a control group and that of an experimental group.

Hypotheses have a rational base or they emerged from a frame work of theory or preliminary experimentation. An experiment involves two or more variables for example; incentives have a measurable impact on learning. The variables whose effects are being studied are called independent variable.

- **Merits:**

1. This method is the most systematic procedure of solving problems. It provides reliable information.

2. It is a revisable method

3. It makes psychology a scientific study

4. It provides objective and precise information about the problems.

5. It give observer easy approach to the mind of an individual

6. It provides innovative ideas for the further experimentation.

7. It enable us to control and direct human behavior

8. It is applicable in educational, individual and social problems

- **Demerits:**

1. It is arranged in a laboratory like situation. This situation is artificially arranged. Behavior is a natural phenomenon and it may change under artificial environment.

2. This method is time consuming and costly. Moreover it requires specialized knowledge and skills.

3. Psychologists have criticized the fact that mostly the experiments have conducted on rats, cats and dogs. The results are conducted and then applied on human beings.

4. It sometimes interferes with the very thing that we are trying to observe.

4. Case Study

Case study is in-depth study of the subject. It is the in-depth analysis of a person, group, or phenomenon. A variety of techniques are employed including personal interviews, psychometric tests, direct observation, and archival records. Case studies are most often used in psychology in clinical research to describe the rare events and conditions of the subject; case study is specially used in education psychology. It deals in education the following problems;

- Lack of interest in students
- Aggressive behavior in student
- Day dreaming
- Poor academic performance
- Emotional problem
- Social problems
- Empathetic understanding
- Find the problem
- Establish report
- Treatment

4. Clinical Method

This method is primarily used to collect detailed information on the behavior problems of maladjusted and deviant cases. The main objective of this method is to study individual case or cases of group to detect and diagnose their specific problems and to suggest therapeutic measures to rehabilitate them in their environment.

It involves the following steps;

1. Interview
2. Information gathering
3. A hypothesis formulate
4. Diagnoses are made
5. Planned a treatment program

UNIT 3 - THEORIES OF LEARNING

Structure

3.1 INTRODUCTION

The adaptability of man's adjustment to diverse environments and the impressive achievement in all the fields of life was accomplished by his learning capacity. Learning is said to occur whenever one adopts new behavior patterns or attitudes. The mechanism of behavior involved in the learning process is explained by Theories of Learning. Psychologists have formulated different theories of learning with the result that it is not possible to give a theory which satisfies learning needs of all the people.

Theory is defined as "a provisional explanatory proposition or a set of propositions, concerning some natural phenomena and consisting of symbolic representation of the observed relationships among the independent and dependent variables, the mechanisms or structures presumed to underlie such relationships or inferred relationships and underlying mechanisms intended to account for observed data in the absence of any direct empirical manifestations of the relationships" – Melvin H. Marx (1970) .

What happens in a learning process? How does an individual learn concepts, skills, habits, interests, attitudes and similar other changes in life? How learning in one area is transferred to other area? What are the ways of motivating pupils to learn? In this Unit, we are going to meet with these questions and find out answers which will be useful in knowing about the learning process.

3.2 OBJECTIVES

After learning this unit, you will be able to

- describe the theories of learning;
- elucidate the behaviorists, cognitive and humanist perspectives of learning;
- state the importance of learning theories ;
- list out the implications of learning theories in classroom;
- identify the need for reinforcement, rewards and punishments in the learning process.

3.3 BEHAVIORIST PERSPECTIVES OF LEARNING

Behaviorism was founded by John B. Watson in the early part of the 20th Century. This was the earliest formulation of a coherent theory of learning, at least in modern Western society. A variety of perspectives emerged over the next few decades including the work of Thorndike, Tolman, Guthrie, Hull, Skinner and others.

From the behaviorist perspective, three assumptions are held to be true. First, the focus was on observable behavior rather than on internal cognitive processes. If learning has occurred, then some sort of observable external behavior is apparent. Second, the environment is the modifier of learning and behavior, not individual characteristics. Third, principle of contiguity and reinforcement are central to explaining the learning process.

The behaviorist orientation is fundamental to much current educational practice, including adult education. Skinner believed the ultimate goal of education was to train individuals to behaviors which would ensure their personal survival, as well as the survival of cultures and the species. The teacher's role in this perspective is to provide an environment that elicits the desired behaviors and extinguishes the undesirable ones.

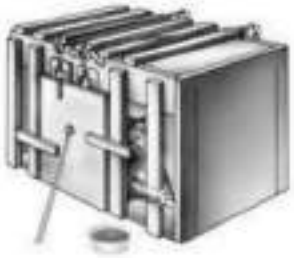
Educational practices which have these notions at their core include systematic design of instruction, behavioral and performance objectives, programmed instruction, competency-based instruction, and instructor accountability, training for skills and vocations are particularly heavily saturated with learning and being reinforced for "correct responses and behaviors".

3.4 TRIAL AND ERROR - THORNDIKE

E. L. Thorndike (1874-1949) was the chief exponent of the theory of Connectionism or Trial and Error. The basis of learning accepted by Thorndike is an association between the sense, impressions and impulses to action. This association came to be known as a 'bond' or a 'connection'. Since it is these bonds or connections which become strengthened or weakened in the making and breaking of habits, Thorndike's system is some-times called a 'bond' psychology or simply 'connectionism'. As it believes in stimulus and response type of learning it is also called S. R. Psychology of learning. Thorndike called it learning by selecting and connecting. It is also known as Trial and Error theory as learning takes place through random repetitions.

3.4.1 Experiment

Once he locked a hungry cat in puzzle box and showed a meat outside. The ultimate aim of the hungry cat was to obtain the meat. The cat could come outside only when it opens the door by removing the latch, but it was unaware as to how to remove the latch. The cat did not know how to remove the latch at first but it involved in random activities like scratching the box, trying to bend the bars and stretching the feet outside. At last in its random activities it lifted up the latch and obtained the meat. He repeated the experiments and found out that the cat released the latch itself easily. The cat realized association between lifting of the latch and opening of the door. The random activities are called errors. Finally he concludes that the numbers of trails will reduce the wrong responses and finally correct response is found. Hence, a



bond is established between stimulus and correct response through elimination of wrong responses.

3.4.2 Laws of Learning

Thorndike draws three laws of learning:

Law of Readiness:

If a bond is ready for its establishment, it has to give satisfaction but not annoyance. If a learner has to learn an action or activity he should be mentally and physically fit for the action he desired. His mental set should have the capacity to do the work. A two year boy cannot be admitted in the school since he is not matured enough. A child of one year cannot speak since his vocal cards, larynx are not grown enough. Hence, maturity is essential.

Law of Effect:

If the result of the bond created between stimulus and a response leads to happiness it will strengthen the bond and if he result is contrary the bond will be weakened. A child will be in a happy mood if he finds out correct answers from his mathematical exercises but will be unhappy if the answers are wrong. If a student passes his examination he will feel happy and he will be unhappy if he fails. "Nothing succeeds like success". This proverb is applicable to this law. This law is also called **"law of stratification and annoyance or reward and punishment"**.

Law of Exercise:

The bond of stimulus and a response will get strengthened if it is repeated. It will lose its strength if the bond is not repeated. The law of exercise emphasizes that "Practice make a man perfect". This law of exercise is also known as "Law of use and disuse".

3.4.3 Concepts and Principles

1. *Learning involves trial and error or selection & connection:* In the experiment, the cat tried for correct response by stamping in and out, attempted to reach the meat. Selection and connection of proper responses to connect or associate them with adequate stimuli, Example:

Subsequent trials, cat tried to avoid the erroneous moves and to repeat the correct manner manipulating the latch.

2. Learning is the result of formation of connections: Mind is associated with the connection in the nervous system between stimuli and response. Mind is man's connection system where there is association between senses, impressions, impulses and actions. This association may be strengthen or weaken resulting in making or breaking habits. This type of association is known as connectionism or bond psychology.

3. Learning is incremental, not insightful: Learning performance depends on number of trial or opportunities. Increase in number of trial or practice performance gradually improves known as incremental performance. Such type of learning is called incremental learning. Example: Solution of a problem does not strike the mind of the animal at one & the time an animal needs to find a solution to a problem depends on the number of trials it get to solve it.

4. Learning is direct not by ideas: Learning is direct not mediated ideas reasoning or thinking. Learning is simple mechanical phenomenon a process of establishing a simple a connection between sensory stimuli and appropriate responses. Example: That cat does not look over the situation, much less think it over, and then decide what do it. It burst out once into the activities helped by instincts & experiences.

3.4.4 Classroom Implications

Thorndike's Theory of trial and error and laws of learning have great educational significance. Thorndike's findings have made the learning purposeful and goal directed. Trial and error, coupled with insight will make the process of learning more effective, important educational implications are:

i. This theory substantiated that readiness is preparation for action which is very essential for learning. If the child is ready to learn, he learns more quickly, effectively and with greater stratification than if he is not ready to learn. He warns us not to make the child learn till he is ready to learn and also not to miss any opportunity of providing learning experiences if he child is, already prepare to learn. The right movements concerning the learning situation and the learner's state of mind should be very well recognized and

maximum use of this knowledge should be made by the teacher. He should also make an attempt to motivate the students by arousing their attention, interest and curiosity.

ii. The law of effect emphasizes the role of rewards and punishment in the process of learning. Getting reward as a result of some learning motivates and encourages the child to proceed on the same path with more intensity and enthusiasm while the punishment of any sort discourages him and creates distaste and distraction towards that learning.

iii. In the teaching – learning process, the teacher try to strengthen the bonds and connections between the stimuli and the responses those things which are to be remembered by the learners. This could be done through drill, repetition and reward. For forgetting he should make attempts to weaken the connections through disuse and annoying elements. \

iv. Repetitions in learning strengthen the connections in achieving the goal which could be achieved by rewarding the correct responses.

v. The child should be encouraged to do his work independently by the strengthening effect of rewards rather than weakening effect of punishment.

3.5 CLASSICAL CONDITIONING – PAVLOV

In 1904, Russian psychologist Ivan Pavlov, during his experimental work on dog's digestive process, accidentally noticed the secretion of saliva in the dog on the sight of food or hearing the footsteps of the caretaker. Conditioning can be defined as "a process in which a neutral stimulus which is not associated with any specific natural response, on pairing with a natural stimulus acquires all the characteristics of natural stimulus." for example, if food is presented, saliva flows. Food is the 'natural stimulus' (or unconditioned stimulus-U.C.S.) that can elicit the 'natural response' (or unconditioned response-U.C.R) salivating'. The sound of a bell which is a neutral stimulus, not associated with any specific response originally, when paired with food a number of times, acquires the characteristics of food and starts eliciting the response of salivation, even when presented alone. Now we say the dog has been conditioned to the sound of bell and we refer the bell sound as 'conditioned stimulus' (C.S.) and salivation as 'conditioned response' (C.R.). Classical conditioning of Pavlov is also called 'stimulus substitution' because

we substitute a neutral stimulus, through the process of 'contiguity' (occurrence of two events in quick succession).

3.5.1 Experiment

A hungry dog was brought into a laboratory and food was shown. The sight of food is smell of the food made the dog salivate. The amount of saliva secreted was measured. The real experiment started. At one stage before offering the food, the small sound of bell was given to the dog. When a number of trials continued like this, the dog salivated even without seeing the food but by just hearing the bell. This is because the dog made an association or connection between the sound of the bell and the arrival of food. The sequence is as follows:

Food (US)	Salivation (UR)
Bell (CS)	Listening
Bell (S1) (CS) + Food (S2) (US)	Salivation (UR)
Bell (CS)	Salivation (CR)

Where,

US means Unconditioned Stimulus i.e. natural

CS means Conditioned Stimulus i. e. artificial

UR means Unconditioned Response

CR means Conditioned Response

Experiment for Pavlov's Classical conditioning

Conditioning means making a connection between an artificial stimulus and natural response. This becomes possible because a connection is made between an artificial stimulus and a natural stimulus.

3.5.2 Concept and Principles

i) Principle of Acquisition:

Acquisition is the initial stage of learning when a response is first established and gradually strengthened. For example, imagine that you are conditioning a dog salivate in response to the sound of a bell. You repeatedly pair the presentation of food with the sound of the bell. You can say the response has been acquired as soon as, you can gradually reinforce the salivation response to make sure the behavior is well earned.

ii) Principle of Extinction:

Extinction is when the occurrences of conditioned response degrease or disappear. In classical conditioning, this happens when a conditioned stimulus is no longer paired with an unconditioned stimulus. For example, if the smell of food (unconditioned stimulus) had been paired with the sound of a whistle (conditioned stimulus), it would eventually come to evoke the conditioned response of hunger. However, if the unconditioned stimulus (the smell of food), were no longer paired with the conditioned stimulus (the whistle), eventually the conditioned response (hunger) would disappear.

iii) Principle of spontaneous recovery:

Spontaneous recovery is the reappearance of the conditioned response after a rest period or period of lessened response. If the conditioned stimulus and unconditioned stimulus are no longer associated, Extinction will occur very rapidly after a spontaneous recovery.

iv) Principle of Stimulus Generalization:

Stimulus generalization is the tendency for the conditioned stimulus to evoke similar response after the response has been conditioned. For example, if a child has been conditioned to fear a suffered white rabbit, the child will exhibit fear of objects similar to conditioned stimulus.

v) Principle of Discrimination:

Discrimination is the ability of differentiate between a conditioned stimulus and other stimuli that have not been paired with an unconditioned stimulus. For example, if the bell tone were the

conditioned stimulus, discrimination would involve being able to tell the difference between the bell tone and other similar sounds.

3.5.3 Classroom Implications

1) Classical conditioning is used in language learning by associating words with picture or meanings.
2) It can be used to develop favorable attitude towards learning, teacher's subjects and the school.
3) Developing good habits in children such as cleanliness, respect for elders, punctually, etc. through the use of conditioning.
4) Breaking of bad habits and elimination of conditioned fear, through the use of reconditioning process.

3.6 OPERANT CONDITIONING - B. F. SKINNER

Prof. Skinner started his research work on behavior while he was a graduate in the department of psychology of the Harvard University. In 1931, he wrote his thesis entitled, *The Concept of the Reflex in Description of the Behavior*. Skinner was a practical psychologist who conducted several experiments on rats on pigeons. He popularized 'teaching machines' in learning in 1954.

3.6.1 Experiment

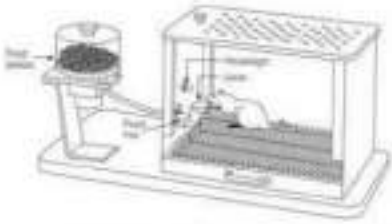
Skinner at first tested this theory with rats. Later, he experimented the test with pigeons. With bar and a food tray he constructed a puzzle box and drove a hungry rat into the puzzle box.

The hungry rat wandered here and there and pushed the bar. The bar and the food tray had its connections. When the rat pushed the bar down a food pellet fell into the tray and it ate the food. The rat learned the task of pressing to get food on needs from which we can understand that reinforcement is needed to achieve a task.

In experiments on pigeons a pigeon was rewarded with a food pellet when it approached a disc and pecked it. Skinner was able to shape even the behavior of birds.

In the theory of skinner's operant conditioning, giving correct response is more important. This type of conditioning is called instrumental conditioning since the response is

instrumental in drawing unconditioned stimulus. Here stimulus's is only one. In Pavlov's classical conditioning theory, we have two conditioned stimuli which precede the response whereas in Skinner's operant conditioning theory. It is one unconditioned stimulus which come later, desired response is reinforced by unconditioned stimulus.



An illustration showing Skinners Classical conditioning theory

3.6.2 Concepts and Principles

i) Positive reinforcement

Skinner showed how positive reinforcement worked by placing a hungry rat in his skinner box. The box contained a lever on the side and as the rat moved about the box it would accidently knock the lever. Immediately it did so a food pellet would drop in to a container next to the lever. The rat quickly learned to go straight to the lever after a few times of being put in the box. The consequence of receiving food if they pressed the lever ensured that they would repeat the action again. Positive reinforcement strengthens a behavior by providing a consequence an individual finds rewarding.

ii) Negative reinforcement:

The removal of an unpleasant reinforce can also strengthen behavior. This is known as Negative reinforcement because it is the removal of an adverse stimulus which is "rewarding" to the animal or person. Negative reinforcement strengthens behavior because it stops or removes an unpleasant experience.

iii) Punishment (weakens behavior)

Punishment is defined as the opposite of reinforcement since it is designed to weaken or eliminate a response rather than increase it .it is an adverse event that decreases the behavior that it follows.

3.6.3 EDUCATIONAL IMPLICATIONS

i. For developing the motivation in the students for classroom work by reinforcement like praise, blames, grades etc., should be used.

ii. Skinner's principles of learning focus attention on the individual's pace of learning. Teaching machines and the programmed learning system have been devised on the basis of the theory of learning founded by skinner.

iii. In the classroom, the principle of immediacy of reinforcement is very important. Praise for a job done well given immediately can be a stronger reinforce or motivator than a grade given much latter.

iv. The schools should practice the principle of operant conditioning namely to destroy the elements of fear from school atmosphere by using positive reinforcement.

v. Desired behaviors of students should be reinforced at once to increase the likelihood or reoccurrence of the behavior in future. Each step of the behavior is to be reinforced.

Check Your Progress – 1

1. State the laws of learning.

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2. Mention the principles of Pavlov's classical conditioning theory.

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WRITTEN RESEARCH PAPER

THE GESTALT THEORY OF PERCEPTION AND SOME OF THE IMPLICATIONS FOR THE ARTS

Submitted by
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Department of Art

In partial fulfillment of the requirements
for the drgree of Master of Fine Arts
Colorado State University
Fort Collins, Colorado
Fall, 1984

The Gestalt theory of perception is an original, direct, natural approach to life, man's thinking, acting and feeling. The Gestalt view is built around various interrelating principles which are in turn constructed into a wider psychological outlook. Taking into account a wide range of psychological issues, such as anger, depression, alienation, and so on, this theory of perception naturally has implications in the problems that have been taken up by art theorists. Perceptions of space and form, and understanding the creative process are all problems that shall be discussed briefly below, after a more detailed discussion of Gestalt theory.

Gestalt theories of perception were the outcome of investigations and experiments in psychology, logic, and epistemology. Beginning in the early Twentieth Century, the Gestalt view was developed by its founders Kurt Koffka, Wolfgang Kohler, and Max Wertheimer, and dominated thinking in psychology until about 1960 (Yussen & Santrock, 1982:145). Ellis (1938:2) describes basic Gestalt theory in this way: "There are wholes, the behavior of which is not determined by that of their individual parts, but where the part-processes are themselves determined by the intrinsic nature of the whole. It is the hope of Gestalt theory to determine the nature of such wholes." Put more straightforwardly, the basic idea is that perception is organized and dictated by several properties of the perceptual field, the perceptual field being the total

sensory field taken in at any one moment by one or all of the senses. A major property of the perceptual field is that perception of it is a holistic event. Perception of the parts takes on a special collectivity and thus the whole becomes something defferent from the sum of its parts (Yussen & Santrock, 1982: 145-146). Wertheimer (Ellis, 1938:4) gives an example of this situation in the experience of hearing music. We hear a melody consisting of a compound of elements and upon hearing it again memory enables us to recognize it and hold its parts together as a whole melody. Even if a familiar six tone melody has six tones added to it one may still recognize the melody. "There is a seventh something", Wertheimer says, "something more than the sum of the six tones which is the "form quality", or "Gestaltqualitat", of the original six. The physical stimuli are considerably changed but their realtions are kept constant and therefore the Gestalt qualities remain about the same" (Ellis, 1938:4). Kohler (Henle, 1961:3) describes Gestalt psychologists as paying particular attention to the fact that perceptual groups are established by interactions, interdependence, and interrelations within the underlaying physical processes of the field, which will be discussed below.

There are a number of forces operating simultaneously to determine how the field is perceived. These are called "laws of organization", "good form", or "Pragnanz", as Gestaltists term it. Kohler (Ellis, 1938:54) attributes

this designation, which describes the tendency of perceptual field to move towards simple Gestalten, wholeness, or organization, to Wertheimer. This tendency exists not as a description of inorganic physical behavior only, but of phenomenal and therfore also of physiological process structures. Similarity, proximity, closure, good continuation, an figure-ground are all principles involved in Pragnanz (Yussen & Santrock, 1982:146-147).

The principle of similarity describes the tendency one has to group elements of the field that are similar (Yussen & Santrock, 1982:146). This is apparent from the following examples:

. o . o . o . o . o .

. o . o . o . o . o .

. o . o . o . o . o .

. o . o . o . o . o .

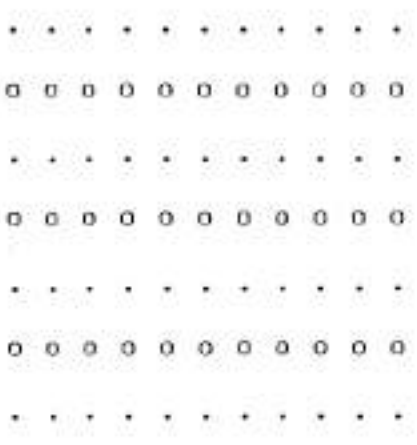
. o . o . o . o . o .

. o . o . o . o . o .

. o . o . o . o . o .

(figure 1)

Or:



(figure 2)

In figure 1, the similarity of solid dots form an implied vertical linve. So do the circular images. In figure 2, the simlarity among dots form horizontal lines. Similarity may also contribute to a perception of direction. For example:

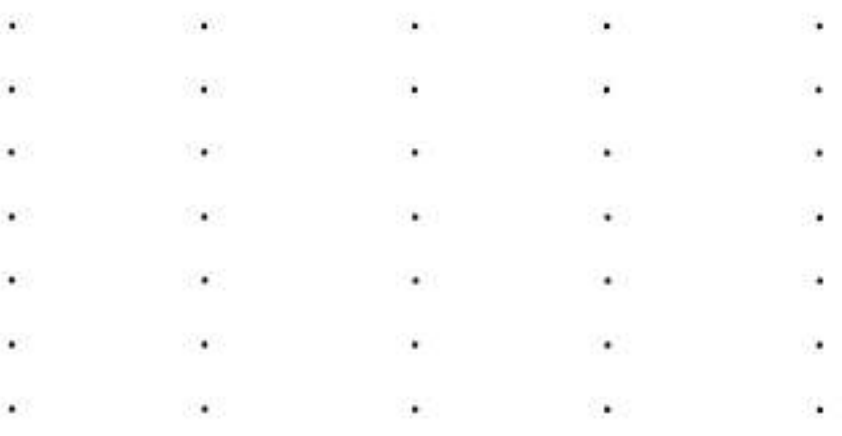
(figure 3)

In figure 3, the similarity of paired dots to one another forms a diagonal line, upon which the eye moves in an upward or downward direction.

Another principle is that of proximity, by which grouping that ivlnves the smallest interval is most natural (Ellis, 1938:74). For example:

(figure 4)

In figure 4, the dots seem to be arranged in six pairs rather than twelve separate dots because of the small interval between the first two dots, the second two dots, etc. In figure 5, below, proximity works to create rows of vertical dots.



(figure 5)

When the two principles of similarity and proximity appear simultaneously, the may co-operate, or they can be set in opposition. By appropriate variation either principle may be strengthened or weakened (Ellis, 1938:77).

In this example, proximity overrides similarity to pair dots and circles.

o . o . o . o

. o . o . o .

(figure 6)

In the following example, similarity is dominant because of the proximity of similar images and great interval between unlike images.

. o . o .

. o . o .

. o . o .

. o . o .

. o . o .

. o . o .

. o . o .

(figure 7)

In figure 8 a decrease of horizontal interval but a retention of similarity allow both principles to cooperate toward the same end, that is, verticality.

. o . o .

. o . o .

. o . o .

. o . o .

. o . o .

. o . o .

. o . o .

(figure 8)

The principle of closure refers to the tendency one has to see integrated figures, or to close or continue a line perceptually when blank spaces appear in a regular pattern (Yussen & Santrock, 1982: 146). Figure 9, 10, and 11 are example of closure.

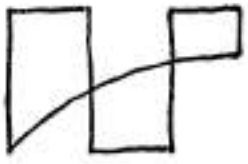
(figure 9)

(figure 10)

(figure 11)

In these figures, closure occurs provided that there is a similarity of form and the interval (proximity) is not to great to bridge.

The principle of good continuation, illustrated below, allows for the tendency to see smooth, continuous wholes over abruptly changing particulars (Yussen & Santrock, 1982: 147). Good continuation, or inner coherence, is acheived when one realizes a resultant "good" Gestalt simply from the inner necessity of the field. This does not mean, however, that simplicity will result. In fact, a unity within complexity will result (Ellis, 1982:83). Figures 12 and 13 are examlpes of good continuation..



(figure 12)

(Figure 13)

In these figures the smooth, curved lines seem to continue uninterupted over the abrupt, angular lines.

The last and perhaps most important priciple is that of figure and ground by which the perceptual field tends to be organized into figure (the distinguishable form) and ground (the background) (Yussen & Santrock, 1982: 147). When an object appears upon a homogeneous field, there is a differentiation so that the object may be perceived.

According to Wertheimer (Ellis, 1938: 88), a perfectly homogeneous field appears as a total field opposing subdivision or disintegration. For segregation to occur within this field would require a relatively strong differentiation between the object and its background. The best case for the resulting figure-ground distinction is when in the total field a closed surface of simple form is different in color or value from the rest of the field. The resulting perception of the field would not be of two figures but, because the contours of the colored area serve as boundaries, and since the background is limited by the figure and seems to continue unbroken behind it, the perception would be that of the figure over ground. In some situations, figure and ground may interchange, as in this famous example:

(figure 14.)

Wertheimer adds that within figures there may be further subdivisions of perception in addition to and including the principles discussed above

All of the above principles contribute to stable perceptual organization. But perceptual change is also considered by the Gestaltists. They consider this change to occur in abrupt steps or stages. A person viewing a scene

may have a sudden, Eureka-like experience in which the field appears dramatically altered. An example of this sudden positive-negative reversal can be seen in the example of figure-ground relations in figure 14 above. The term "insight" is given to this experience by Getstaltists and refers to the degree of awareness of the perceptual field and how this awareness contributes to the solution of a problem situation. Very often a viewer will restructure or reshuffle relationships in a field which, in turn, results in a sudden novel solution. Past experiences and present events stand in a different relationship than before leading to creative problem solving (Brammer & Shostrom, 1968: 60-61). Gestalt concerns with creativity will be discussed later.

Why should the perceptions of visual (and otherwise sensed) patterns organize themselves by the above principles? Gestaltists, such as Arnheim (1971:4), theorize that perceptual order is "the conscious manifestation of a more universal physiological and indeed physical phenomenon." Activities in the brain correspond sturcturally to the structure prevailing in the perceptual field. Wolfgang Kohler, impressed by the corresponding phenomena in the physical and psychological sciences developed the idea he termed "physical gestalten". In an article on this subject he describes his basic idea, "[in the theory of nervous functions]... we have an immediate correspondence between mental and physical processes and the

demand seems inescapable that at this point organic functions be thought of as participating in and exhibiting essentially Gestalt characteristics" (Ellis, 1938:18). Proceeding from the instances of finding Gestalt principles in operation in the nervous system, Kohler began investigations into Gestalt processes in more comprehensive physical systems, such as electrical fields (Ellis, 1939: 18-33). These studies yielded information supporting theories by Gestaltists claiming that Gestalten of the same fundamental character as those in perception are involved in physical systems. From these ideas Kohler developed his "Law of Dynamic Direction" which is concerned with the direction of a system to the maximum orderliness obtainable under the given conditions. The world is seen as self-organizing and self-regulating (Arnheim, 1971: 51-52n). Kohler and other Gestaltists were often accused of "physicalism", "reductionism", or "materialism" but these assertions are inaccurate. What they tried to show was examples of structure not only at the phenomenal/physical level. Their work attempted to bridge the gap between nature and mind by showing a similar structural organization or "psychophysical isomorphism" as it is called by Kaniza & Gaetano (1979: 56-71).

On one hand Gestaltists were accused of reducing behavior into mechanisitic bonds of physical units as stated above. On the other hand, Gestaltists were also accused of ignoring physical states of organisms, motivations, the past

experiences of the organism, and, in general, behavioral inquiries. But in fact all of these and more were included in Gestalt theories of the influence of perception in behavior as can be seen in this brief listing of the main value of the principles of Gestalt field theory (Brammer & Shostrom, 1968: 59): First, the physical state of the organism determines the nature of what is perceived. So how a person behaves is a function of the state of his perceptual field at the moment. Second, perception is a function of time since the exposure must be long enough to allow sensory organs to function adequately and for perceptions to form in memory. Third, perception cannot occur unless there is a concrete or symbolic experience. Fourth, the client's values, goals, or motivations influence perception. For the most part, people perceive what they want or expect to perceive, or are trained to perceive. Fifth, the ego and self-systems selectively determine what is perceived. Sixth, experiencing threat to self affects the range and quality of perception. Threat seems to narrow the perceptual field as well as to force the individual to maintain his personality organization by various defenses.

Gestaltists' basic idea concerning behavior is that it is a primary function of the person's perceptual field at the moment. People should be understood in terms of their unique perceptual or "phenomenal field." This view contrasts with both the psychoanalytic view that behavior is influenced by deeply repressed historical events in the

personality, and with the behaviorist view which stresses past learning (Brammer & Shostrom, 1968: 59). Even heredity is not discounted by the Gestaltists. But, whereas a Nativist would explain behavior exclusively in terms of inherited mechanisms in the nervous system which dictate behavior, the Gestalt view is that behavior is constructed of both thought and action and that these two influence biological changes, as well as vice-versa (Henle, 1961: 67, 75).

What are the implications of Gestalt theory in relation to art theory and practice? The often read Suzanne Langer incorporated Gestalt theory into her own wider ranging ideas in order to understand perceptions of space and form. She states that Gestalten are "the symbolic materials given to our senses...[they] furnish the elementary abstractions in terms of which ordinary sense experience is understood" (Langer, 1957a: 98). Langer sees the first contact with the total gestalt as "intuition" and since the gestalt is made of "symbolic materials" then "if our interest in Gestalten goes beyond their common-sense meanings it is apt to run us into their dynamic, mythical, or artistic meanings" (Langer, 1957a: 283). She further states (1957b: 165) that the "artistic form is a perceptual unity" of the experience of a feild organized under Gestalt principles.

To an even greater extent Rudolf Arnheim includes Gestalt theories in his writings concerning art. When discussing the Gestalt theory of expression, Arnheim states

that "expressive behavior reveals its meaning directly in perception. The principle of isomorphism, according to which processes which take place in different media may be nevertheless similar in their structural organization. Applied to the body and mind, this means that...the forces which determine bodily behavior are structurally similar to those which characterize the corresponding mental states... (Henle, 1961: 307-308). This idea of isomorphism of muscular behavior and the resulting visual trace can be exemplifeid by various drawing techniques, action painting, abstract expressionism, and in Japanese painting which makes use of the principle of "living moment" (Sei Do). In the latter example the distinguishing feature is the strength of the brushstroke, called "fude no chikara" or "fude no ikioi". This technique requires that an appropriate quality of strength must be imparted through the artists arm and hand to the image painted (Henle, 1961:310).

Arnheim defines expression then as "the psychological counterpart of the dynamic processes which result in the organization of perceptual stimuli"(Henle, 1961: 311). The Gestalt thesis would imply that an observer could adequately guage another person's state of mind by his bodily appearance or by the result of his physical activities. Such a theory of expression would make expression an integral part of the elementary process of perception. Basically the Gestaltists see expression as a physical manifestation of psychical processes and further that expression is not

limited to a physical organism which possesses consciousness. Rather, flames, trees, rocks, water, also express their unique characteristics which are structurally similar to psychophysical characteristics in humans (Henle, 1961:313).

Gestalt therapy is well known for its use of creativity as a technique of adjustment. As with the experience of "insight" discussed above, component parts of a problem are rearranged or viewed from varying, non-normal perspectives to effect a solution. Perls, Hefferline, and Goodman (1951: 393-394) accurately describe a fear of creativity existing on both the individual and social levels. This fear exists precisely because creative problem solving looks at problems outside the norm, thus risking social and personal stability. A usual political issue can be used as an example. The problem is thought to be "real" only if stated in the accepted framework, but neither of the opposing policies spontaneously address the problem itself. Our social problems are usually posed from inflexible viewpoints that conceal real conflicts and prevent real solutions. It is the accepted way of posing the problem, not the problem itself, that is taken to be "reality". One is therefore continually confronted with the choice of "lesser of two evils". This is what is called "being realistic". The creative approach to a difficulty, whether social or personal, is just the opposite: it tries to discover or invent third, fourth, or even fifth approaches that spring from the processes involved in the issue itself. Gestaltists

consider the self's creativity and the organism-environment adjustment to be polar: one cannot exist without the other. Contact with the environment must be a creative transformation. Creativity that is not continually destroying and assimilating an environment given in perception remains superficial. It remains superficial because the exitement of the unfinished situation is not drawn on, and interest collapses. Also, it is in manipulating the resistant that the self becomes involved and engaged, effecting change (Perls, Hefferline & Goodman, 1951: 406-407). In the excitement of creativity the self looses its security without being negated. With the acceptance of this excitement the self has the sense of readiness and draws power from contact with the environment (Perls, Hefferline & Goodman, 1951: 414-415).

An accurate criticism of Gestalt theory is that it is vague in describing how perceptual change takes place. What causes the sudden change, for example, in the face-vase diagram (figure 14)? There are limitations of Gestalt views because of the incompleteness of some of these views. For instance, when it comes to setting conditions whereby perceptual changes and insight are accomplished, and how an understanding of thought processes can be translated into affirmative action, Gestalt theory remains unclear.

Perhaps the greatest value in the Gestalt approach lies in the insight that the whole determines the parts, which contrasts with previous assumptions that the whole is merely

the total sum of its elements. The average person, having been raised in an atmosphere full of dichotomies, has lost his wholeness and his integrity. The unitary outlook of the Gestaltists dissolves the fragmented approaches to human experiences.

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Albert Bandura

Social learning theory

Biographical Background

- Was born in in Alberta, Canada in 1925; youngest child, and only son, in a family of six
- He received his bachelors degree in Psychology from the University of British Columbia in 1949
- He went on to the University of Iowa, where he received his Ph.D. in 1952
- It was there that he came under the influence of the behaviorist tradition and learning theory

Biographical Background

- During grad school, he would occasionally play golf with friends
- Met wife in sand trap; Virginia Varns, who was a teacher at the College of Nursing
- Married in 1952 and have two daughters

Bandura and children →

- In 1953, he started teaching at Stanford University
- While there, he collaborated with his first graduate student, Richard Walters, resulting in their first book, Adolescent Aggression, in 1959
- Bandura was president of the APA in 1973, and received the APA's Award for Distinguished Scientific Contributions in 1980
- In 2006, he received the Gold Medal Award for Life Achievement in the Science of Psychology
- He continues to work at Stanford to this day

WHAT IS SOCIAL LEARNING THEORY?

- **The social learning theory proposed by *Albert Bandura* has become perhaps the most influential theory of learning and development.**

- **While rooted in many of the basic concepts of traditional learning theory, *Bandura* believed that direct reinforcement could not account for all types of learning.**

- His theory added a social element, arguing that people can learn new information and behaviors by watching other people.

- Known as observational learning (or modeling), this type of learning can be used to explain a wide variety of behaviors.

- Bandura's theory claims that children will identify and mirror the behavior of any other person.

Bandura agreed with the behaviorist theories of classical conditioning and operant conditioning.

What Is Albert Bandura's Approach to Psychology?

When someone refers to Albert Bandura's approach to psychology, they're referring to the social learning theory. Bandura developed a theory that children learn by what they observe in social situations and executed a famous experiment called the Bobo doll to attempt to prove his predictions.

The social learning theory of Bandura focuses on the learning that occurs within a **social context**. It considers that people learn from one another, including such concepts as observational learning, imitation, and modeling .

This learning theory emphasizes the importance of observing and modeling the behaviors, attitudes, and emotional reactions of others.

- ***Basic Social Learning Concepts:***

There are three core concepts at the heart of social learning theory.

- **The idea that people can learn through observation.**
- **The idea that internal mental states are an essential part of this process.**
- **This theory recognizes that just because something has been learned, it does not mean that it will result in a change in behavior.**

- People learn through observing others' behavior, attitudes, and outcomes of those behaviors.

- "Most human behavior is learned observationally through modeling: from observing others, one forms an idea of how new behaviors are performed, and on later occasions this coded information serves as a guide for action." (Bandura).

- Social learning theory explains human behavior in terms of continuous reciprocal interaction between cognitive, behavioral, and environmental influences.

Summary: Bandura's Social Learning Theory posits that people learn from one another, via observation, imitation, and modeling.

- The theory has often been called a bridge between behaviorist and cognitive learning theories because it encompasses attention, memory, and motivation.

- Bandura believed in "*reciprocal determinism*", that is, the world and a person's behavior cause each other, while behaviorism essentially states that one's environment causes one's behavior.
- Bandura, who was studying adolescent aggression, found this too simplistic, and so in addition he suggested that behavior causes environment as well.

Necessary condition for effective modeling :

Attention — In order to learn, you need to be paying attention.

--various factors increase or decrease the amount of attention paid. Includes distinctiveness, affective valence, prevalence, complexity, functional value.

--One's characteristics (e.g. sensory capacities, arousal level, perceptual set, past reinforcement) affect attention.

Retention — The ability to store information is an important part of the learning process. Remembering what you paid attention to. Includes symbolic coding, mental images, cognitive organization, symbolic rehearsal, motor rehearsal.

Reproduction — Once you have paid attention to the model and retained the information, it is time to actually perform the behavior you observed.
--Reproducing the image. including physical capabilities, and self- observation of reproduction

Motivation — In order for observational learning to be successful, you have to be motivated to imitate the behavior that has been modeled

--Having a good reason to imitate. Includes motives such as a past (i.e. traditional behaviorism), promised (imagined incentives) and vicarious (seeing and recalling the reinforced model).

Learning Through Observation

Process of Observational Learning

- **Attentional processes**
  - More noticeable, more easily copied
- **Retention processes**
  - Verbal; images
- **Motor production processes**
  - Successful motor production requires cognitive organization of the response, monitoring of the response, and refinement of the response
- **Motivational processes**
  - We must value the response

The Bobo Doll Study

- In a famous and influential experiment known as the Bobo doll experiment, Albert Bandura and his colleagues were able to demonstrate one of the ways in which children learn aggression.

- The experiment involved exposing children to two different adult models; an aggressive model and a non-aggressive one.

- After witnessing the adult's behavior, the children would then be placed in a room without the model and were observed to see if they would imitate the behavior they had witnessed earlier.

Method

- The participants for the experiment were 36 boys and 36 girls enrolled at the Stanford University Nursery School. The children ranged in age between 3 and almost 6 years, and the average participant age was 4 years 4 months.
- There were a total of eight experimental groups. Out of these participants, 24 were assigned to a control group that received no treatment. The rest of the children were then divided into two groups of 24 participants each. One of the experimental groups was then exposed to aggressive models, while the other 24 children were exposed to non-aggressive models.
- Finally, these groups were divided again into groups of boys and girls. Each of these groups was then divided so that half of the participants were exposed to a same-sex adult model and the other half was exposed to an opposite-sex adult model.
- Before conducting the experiment, Bandura also assessed the children's existing levels of aggression. Groups were then matched equally so that they had an average level of aggression.

Results

- Children exposed to the violent model **tended to imitate the exact behavior they had observed** when the adult was no longer present.
- Bandura and his colleagues had also predicted that children in the non-aggressive group would behave less aggressively than those in the control group.
- The researchers were also correct in their prediction that boys would behave more aggressively than girls. Boys engaged in more than twice as many acts of aggression than the girls.

Results

- Boys who observed an adult male behaving violently were more influenced than those who had observed a female model behavior aggressively.

- Interestingly, the experimenters found in the same-sex aggressive groups, **boys were more likely to imitate physical acts of violence while girls were more likely to imitate verbal aggression.**

Conclusions

- Bandura and his colleagues believed that the experiment demonstrates how specific behaviors can be learned through **observation and imitation**.
- In a follow-up study conducted in 1965, Bandura found that children were **more likely to imitate aggressive behavior if the adult model was rewarded** for his or her actions
- They were far less likely to imitate if they saw the adult model being punished or reprimanded for their hostile behavior.
- Several studies involving **television commercials and videos** containing violent scenes have supported this **theory of modeling**.
- Albert Bandura believed television was a source of behavior modeling.

Albert Bandura's name has become synonymous with the Bobo doll experiment, which took place in 1961. To prove that children reproduced behavior they observed, Bandura set up an experiment and made the following predictions about it:

1.He predicted that if children observed an adult acting aggressively, they would emulate the behavior even when the aggressive adult wasn't present.

2.He also predicted that children who observed non-aggressive adults would be less aggressive than those who observed aggressive models. Along these lines, he theorized that the non-aggressive group would also be less aggressive than the control group.

3.Children would be more inclined to imitate someone of their same gender.

4.He surmised that boys would act with more aggression than girls.

The Bobo experiment proved three of the four predictions were correct. Children who were exposed to violent models imitated the exact behavior even when the adult wasn't present. Boys that had an opposite gender model who was non-aggressive were more likely to engage in violence. While boys and girls engaged in violence, boys were twice as aggressive as girls and boys were more likely to get physical whereas, girls were more verbally aggressive.

Critics of the experiment note that the laboratory of this experiment doesn't simulate the real world. They are also quick to point out that Bandura's pool of subjects wasn't diverse so that he couldn't generalize the results to a diverse population. There's no way to know if children would act more or less aggressive to a person than a doll. This was not a longitudinal study, so there's no way to measure the results over time. There's a possibility that the kids weren't motivated to be aggressive-they only wanted to please the adults. Perhaps most importantly, some deem Albert Bandura's experiment to be unethical because it may have taught kids to be aggressive.

Learning Through Observation

Learning that occurs by observing and imitating others (the person being observed is referred to as the model)

- **Bandura et al. (1977)**
  - **Major factors that influence modeling**

Characteristics of the model

Influenced more by those who are similar to ourselves; simpler actions; aggressive actions

Attributes of the observer

Low self-esteem; dependent personality types; motivated individuals

Reward consequences associated with a behavior

Self-efficacy

General principles of social learning follows:

1. People can learn by observing the behavior of others and the outcomes of those behaviors .

In his famous "Bobo doll" studies, Bandura demonstrated that children learn and imitate behaviors they have observed in other people. The children in Bandura's studies observed an adult acting violently towards a Bobo doll. When the children were later allowed to play in a room with the doll, they began to imitate the aggressive actions they had previously observed (Van Wagner).

Bandura identified three basic models of observational learning:

1. **A live model,** which involves an actual individual demonstrating or acting out a behavior.
2. **A verbal instructional model,** which involves descriptions and explanations of a behavior.
3. **A symbolic model,** which involves real or fictional characters displaying behaviors in books, films, television programs, or online media.

2. Learning can occur **without** a change in behavior. Behaviorists say that learning has to be represented by a permanent change in behavior, in contrast social learning theorists say that because people can learn through **observation alone**, their learning may not necessarily be shown in their performance. Learning may or may not result in a behavior change .

3. Cognition plays a **role** in learning. Over the last 30 years social learning theory has become **increasingly cognitive** in its interpretation of human learning. Awareness and expectations of future reinforcements or punishments can have a major effect on the behaviors that people exhibit .

4. Social learning theory can be considered a bridge or a **transition** between behaviorist learning theories and cognitive learning theories.

Summary

Principles

1.The highest level of observational learning is achieved by first organizing and rehearsing the modeled behavior symbolically and then enacting it overtly. Coding modeled behavior into words, labels or images results in better retention than simply observing.

2.Individuals are more likely to adopt a modeled behavior if it results in outcomes they value.

3.Individuals are more likely to adopt a modeled behavior if the model is similar to the observer and has admired status and the behavior has functional value.

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Chapter Seven

HOWARD GARDNER'S MULTIPLE INTELLIGENCES THEORY AND HIS IDEAS ON PROMOTING CREATIVITY

HANI MORGAN

ABSTRACT: This book chapter highlights Howard Gardner's contributions to the areas of education and creativity. It includes an introductory section on his background and accomplishments. The chapter focuses on his theory of multiple intelligences, Gardner's best-known theory, and provides details on how he got the idea for this theory. It offers an explanation of this theory and the implications it has for educators. His theory of human intelligence contradicts the view that there is one type of intelligence that could be measured by standardized tests. Gardner first described seven intelligences and later added an eighth. The chapter also focuses on Gardner's ideas on creativity and offers information on how teachers can implement the kind of teaching that promotes creativity.

Introduction

The theory of multiple intelligences has influenced educators from all over the world, encouraging them to envision more effective ways of teaching. This theory was developed over 30 years ago by Howard Gardner, a world-renowned psychologist. In 1983, Gardner transformed the field of education when he published *Frames of Mind: The Theory of Multiple Intelligences*. In this book, he described a new way of thinking about human intelligence, challenging the traditional view that there is one kind of intelligence standardized tests can measure (Strauss, 2013).

Howard Gardner's Early Years

Howard Gardner was born in 1943 in Scranton, Pennsylvania. He was very successful in school. As an early reader and writer, he produced a newspaper when he was in second grade and enjoyed writing it and watching the pages come out of the printer. His parents allowed him to make his own decisions and trusted him (Mineo, 2018). Although he was described as a gifted pianist, he found the responsibilities associated with formal piano instruction burdensome (Gordon, 2005). He even quit after one of his teachers told him he had to practice three hours every day (Mineo, 2018). But he never lost his love of music. In fact, his passion for music played a role in the beliefs he developed about multiple intelligences (Gordon, 2005).

His parents were German Jews who came to America to escape the Holocaust. They arrived in New York City with little money and later hid the horrors of the Holocaust from their son, fearing that becoming aware of these atrocities would harm him. They also did not tell him about how his 8-year-

old brother tragically died in a sleigh-riding accident before he was born. When he found out by looking through clippings, Gardner became annoyed because he had not been told about this tragedy, but recently mentioned that he later understood how difficult it must have been for his parents to talk about it (Mineo, 2018).

The death of one of their sons led Gardner's parents to be protective. When he was a child, they took measures to prevent him from participating in sports. It was not until he was in his twenties that he rode a bicycle. Although he was not antisocial, the activities he participated in were predominantly solitary and included reading, writing, and playing the piano. Although he was social with his close friends, he was not gregarious. His parents were eventually warned not to shelter him in excess. And at age seven, he attended camp away from home where he participated in competitive sports. At first, he did not enjoy camp and lacked talent in sports, but after going year after year, he became more enthusiastic (Gardner, 2020).

Career at Harvard University

Gardner completed his professional training at Harvard University, where he focused on research involving gifted children and brain-damaged adults. During his early career, he developed into a prolific writer. And after he published *Frames of Mind*, his theory of multiple intelligences became popular all over the world (Gordon, 2005).

He first came to Harvard in 1961 and thought about majoring in history. However, after taking history classes during his freshman year, Gardner's aversion of the way historians wrote led him to lose interest in pursuing history as a major. Instead, he majored in Social Relations after being influenced by a teacher who noticed Gardner's interest in psychology and sociology and recommended Social Relations as a major. Although Social Relations —a mix of psychology, anthropology, and sociology—was not viewed as a prestigious major, it interested him (Mineo, 2018).

Several factors led him to write *Frames of Mind*. One of these was Gardner's fondness of writing. He has always enjoyed writing and had written three books by the time he started his postdoctoral work in 1971. He published his fourth book, *The Shattered Mind*, in 1975. This book focused on how different forms of brain damage affect people and how different parts of the brain regulate different cognitive functions. After completing this book, he thought about writing a book on how different human faculties are connected to the brain. In 1976, he wrote an outline for this new book, which was eventually titled *Frames of Mind* (Gardner, 2011a).

Several experiences enhanced Gardner's interest in cognitive function. One of these was his work at the Boston Veterans Administration Hospital. After completing his doctorate in Developmental Psychology, he got a fellowship at this hospital, allowing him to observe patients with brain damage. While working there, he continued to work at Project Zero, where he held a position that started shortly after he began his graduate studies. Project Zero was founded in 1967 at the Harvard Graduate School of Education and has focused on exploring learning through the arts. Today, Project Zero also focuses on inquiry through diverse disciplinary perspectives to explore vari-

ous topics including intelligence, creativity, and ethics (Harvard Graduate School of Education, 2016).

His work at Project Zero concentrated on the development of children's artistic thinking. For a certain period, Gardner would be working in the morning with patients with brain damage and in the afternoon with children at Project Zero. These experiences shaped Gardner's concept of multiple intelligences because he noticed how some patients at the hospital were very musical but were not able to use language well. And he observed a similar pattern when working with kids (Mineo, 2018).

Multiple Intelligences

In addition to his previous interest in and work on cognitive abilities, Gardner's participation in a research project funded by the Bernard van Leer Foundation contributed to the writing of *Frames of Mind*. This project focused on conducting research on human potential. Its principal investigators assigned him to write a book documenting what was known about the connection between human cognition and the biological and behavioral sciences. It was this research that ultimately led to the theory of multiple intelligences (Gardner, 2011b).

The grant from the van Leer Foundation allowed Gardner to synthesize the work he did on brain damage with what he had learned about cognitive development. His studies on cognitive development explored seven ways in which children mastered symbol use and included their singing, drawing, and storytelling abilities. With his colleagues, he used literature from various fields, including psychology and anthropology, to determine the best taxonomy of intellectual capacities (Gardner, 2011b).

Calling the different abilities he identified "intelligences" created controversy, but popularized Gardner's work. He mentioned that had he used another word, he would not have been known all over the world. His theory was not accepted by many psychologists because they generally have different ideas about studying intelligence. For example, his views on intelligence are at odds with those of psychologists like Richard Herrnstein, who believed that IQ is inherited to a great extent (Mineo, 2018). In fact, Gardner was critical of a book Herrnstein co-authored entitled *The Bell Curve,* arguing that the book encourages readers to be sympathetic to the IQ elite and does not provide ideas about how to educate those who do not excel on IQ tests (Gardner, 2001).

According to Gardner, an intelligence involves a person's ability to solve a problem or do something considered valuable in one or more cultures. In the early 1980s, he identified seven intelligences and about a decade later added an eighth (Checkley, 1997). Table 1 (overleaf) shows the eight intelligences he identified.

Gardner mentioned that the linguistic intelligence appears to be the one most widely shared by humans across the world because without linguistic skills in semantics, phonology, syntax, and pragmatics, people would have difficulty functioning with efficacy in the world. In contrast, the abilities of gymnasts, mathematicians, musicians, and visual artists are often perceived as remote and even mysterious by the average person (Gardner, 2011b).

Table 1

Intelligence	*Description of Intelligence*
Linguistic	People with strong linguistic skills can use their native language, and sometimes other languages, to understand people and express their thoughts. Examples of professionals with above average intelligence levels in this area include writers and orators.
Logical-mathematical	Scientists are examples of people strong in the logical-mathematical intelligence because they can manipulate numbers the way mathematicians do. They tend to have above average logical-mathematical skills also because of their knowledge of causal systems.
Spatial	Spatial intelligence involves the skills people have to represent the spatial world. Spatially intelligent people tend to become painters, sculptors, and architects. Spatial intelligence is used more often in certain sciences like anatomy and topology.
Bodily-kinesthetic	This intelligence relates to the ability to use whole or certain body parts to create something, solve a problem, or display skills involving bodily movement at an event. Examples of professionals strong in this intelligence include athletes and dancers.
Musical	People with enhanced musical intelligence have a heightened ability to hear, recognize, and remember patterns. They think in music and cannot get it out of their minds. In *Frames of Mind*, Gardner indicated that musical intelligence emerges earlier than other intelligences.
Interpersonal	The interpersonal intelligence involves one's ability to understand others. People strong in this intelligence can detect other people's moods, intentions, and desires. This intelligence is especially important for individuals who deal frequently with people like teachers, clinicians, and salespeople.

Intrapersonal	An enhanced understanding of oneself is a characteristic of someone strong in the intrapersonal intelligence. A developed intrapersonal intelligence enables people to anticipate how they would react to experiences and how to choose the experiences that can be beneficial. It also helps people be aware of the difficulties they might encounter.
Naturalist	The naturalist intelligence was added to the original seven. It relates to an individual's ability to differentiate among living things. People strong in this intelligence are good at classifying plants, minerals, and animals as well as rocks and grass.

Note. The information in this table is adapted from (Checkley, 1997).

Criticisms of Multiple Intelligences Theory

Although MI theory has received tremendous attention, it has been criticized. In *Frames of Mind*, Gardner mentioned that two books were published with critiques of his theory: *Howard Gardner Under Fire* and *MI at 25*. Gardner has responded to criticisms of his theory. In 2006, for instance, he co-authored an article mentioning that Lynn Waterhouse had misunderstood his theory. One of the problems Gardner and Moran (2006) discussed regarding Waterhouse's idea of MI theory was her belief that it is not grounded in empirical findings. Gardner and Moran responded to this critique, insisting that the origins of MI theory are entirely based on empirical conclusions and that Waterhouse was using a naïve perspective of science when making this claim.

In *Frames of Mind,* Gardner summarized some of the common criticisms of his theory and offered his responses. One of the objections critics mention involves using the word "intelligence." For instance, critics say that "talent" would be a more appropriate word to describe the ability of a gifted dancer. Gardner's response is that in accepting a narrow definition of intelligence, people would likely regard the abilities that fall outside of this definition as less valuable.

Another criticism of MI theory involves the connections between different faculties. Some scholars believe that since there are correlations between tests of ability, there is a level of general intelligence that people have. However, Gardner has expressed skepticism about these correlations, arguing that almost all tests focus primarily on logical and linguistic faculties. He mentioned that people strong in the logical and linguistic intelligences are likely to perform well on tests that focus on musical and spatial abilities. But those with weak logical and linguistic skills will likely perform poorly even if they have the skills these tests are allegedly measuring. According to Gardner, the extent to which various intelligences are correlated is unknown (Gardner, 2011b).

Other criticisms focus on the similarities between the intelligences and the lists some researchers have published about the different styles people

might display, such as learning styles, personality styles, working styles, etc. Although there may be similarities, there are differences between these styles and Gardner's intelligences. Intelligences are content specific, but researchers tend to believe that styles remain the same across content. For instance, people can be viewed as emotive or analytic regardless of the content to which they are exposed. In contrast, Gardner identified his intelligences according to the content in the world, such as numerical and spatial content. A child may be engaged with one type of content but be inattentive with another type. Therefore, considering styles and intelligences to be synonymous is problematic (Gardner, 2011b).

Implications of the Multiple Intelligences for Educators

In a 1997 interview, Gardner described the implications of his theory of multiple intelligences for how schools might provide instruction. At the start of the interview, he emphasized that the primary role of schools is to promote the learning of content and to develop the skills students will need and use after they graduate. However, whatever students learn in school will likely be forgotten unless they take an active role. To be active requires them to ask questions, participate in hands-on activities, and recreate and transform information as needed. Unfortunately, exams do not necessarily measure the extent to which students are involved in active learning. Students can do well on an exam by memorizing information, which they will likely forget after a few years. In contrast, students who make a prediction, conduct an experiment, analyze the data, and see the results develop skills and knowledge likely to last for a much longer period (Edutopia, 2009).

Regrettably, American schools have too often failed to encourage the environment needed for students to take the active role that will develop the skills and knowledge they will need after they graduate. One reason for this trend involves the overuse of standardized tests to evaluate schools and teachers. At the start of the 21st century, for example, schools began to rely more on these tests to evaluate teachers and schools, leading many teachers to use a style of teaching that focuses on memorization (Morgan, 2016). In December of 2015, the passing of the Every Student Succeeds Act (ESSA) ended the high-stakes consequences previously attached to students' standardized test scores. However, ESSA requires students in grades 3 to 8 to be assessed through standardized tests every year (Wang, 2019).

ESSA is a policy that is more harmonious with Gardner's views on the type of learning that benefits students because it encourages teachers to meet the needs of students by implementing innovative methods, such as differentiated instruction. Under No Child Left Behind (NCLB), the policy ESSA replaced, schools did not have this option, and schools that continuously failed to meet their state's annual achievement targets faced the possibility of being shut down (Klein, 2015). The pressure teachers were under led many of them to teach to the test, using the kind of teaching that Gardner mentioned should be avoided.

While ESSA will likely reduce the type of teaching based on memorization that NCLB encouraged, some states have continued to use test scores

to hold teachers accountable (Close, Amrein-Beardsley, & Collins, 2019). This trend is unfortunate because some systems of education do not use standardized tests to evaluate teachers to avoid the problems associated with this practice. For example, Finland's education system has received tremendous attention because its approach to education differs greatly from the methods many other nations implement and does not involve the use of standardized tests to evaluate teachers. Although standardized tests are used in Finland, they are implemented *only* for curricular decisions and university admission (Morgan, 2018).

Since students vary greatly in the intelligences Gardner identified, teachers need to differentiate instruction to be effective for *all* their students. If they teach to develop several intelligences as they neglect others, they end up discriminating against the students who are strong in the intelligences they neglect but weak in those teachers choose to develop. It may seem impossible to adjust instruction according to the differences in intelligence levels among students in a given class. For example, how can a teacher achieve this goal in a class containing a student with a very hands-on way of learning, a learner with strong visual intelligence, and a pupil with highly developed linguistic skills? Gardner addressed this question, mentioning that the teacher can provide resources, materials, and software that present content in ways for each child to use her or his intelligences productively (Edutopia, 2009).

One of the problems of using standardized tests to assess students is that such tests usually do not measure many of the intelligences Gardner identified including the interpersonal, intrapersonal, musical, and bodily kinesthetic. Instead, these tests focus only on two: the linguistic and mathematical intelligences (Morgan, 2016). And when teachers are evaluated in part on how well their students perform on standardized tests, they often feel pressure to develop the intelligences these tests measure and ignore the others. Although ESSA reduced the use of standardized tests, it maintained many of the testing mandates the No Child Left Behind Act required (Blad, 2021).

In addition to the importance of having students do well on standardized tests, schools may avoid implementing instruction according to multiple intelligences (MI) theory based on the false belief that uniform instruction is fair. It may seem fair to assess all students in the same way and provide instruction uniformly because everyone is receiving the same treatment. However, this approach to instruction is based on the assumption that all students learn in a similar way. But according to MI theory, students weak in one intelligence will not learn as well if teachers deliver instruction only through the intelligence students may be weak in. For example, a child with weak verbal skills will likely perform less well than one with strong verbal skills if a teacher uses an instruction style that focuses primarily on learning through words and language. But if the child with weak verbal skills has strong spatial skills and if the teacher uses plenty of pictures, images, photos, and drawing activities, this child will have a much better chance of making academic gains.

According to Gardner (1999), teachers may ignore certain intelligences and focus primarily on providing instruction through language and logic for several reasons. First, they may be unaware that different students have different types of minds. Second, they may have a set of students who

vary greatly in the intelligences they are strong in and may feel incapable of accommodating each student. Third, they may be convinced that although students are different, they need to learn to be more alike to become members of a community. Teachers who ignore the intelligences students are strong in as they acknowledge the intelligences students are weak in are not only providing instruction unfairly but making certain students feel stupid (Gardner, 1999).

In a recent interview, Gardner expressed the importance of using students' strong areas when introducing them to topics in the traditional curriculum. Teachers who avoid proceeding this way as they focus primarily on pupils' weak areas increase the chances for students to develop low self-esteem (Hunter, 2021). It is crucial to allow students to develop the areas in which they are talented. In his recent interview, Gardner used physics to show how providing instruction through the intelligences commonly ignored may be achieved by teaching this subject using a method other than one focusing on a textbook. For example, students could understand physics topics through their bodily intelligence (Hunter, 2021).

Personalized Learning

Since uniform instruction is detrimental, one alternative for improving the teaching environment is to implement personalized instruction. This type of instruction involves a type of teaching that matches the different kinds of minds students have. Teachers who use this approach must first gain awareness of the types of minds their students possess by learning about students' interests, anxieties, goals, and strengths without stereotyping them (Gardner, 1999).

James Keefe (2007), a former high school principal, mentioned that personalized learning develops the entire range of human talents but that schooling is rarely personalized. This trend can contribute to catastrophic results. It can also lead the most creative people to be miserable in formal schools. For example, people like Charles Darwin, Sir Isaac Newton, Louis Pasteur, Orville Wright, Albert Einstein, and Marlon Brando failed to thrive in their schools (Keefe, 2007).

Personalized learning involves tailoring students' learning experiences according to their individual needs, skills, and interests. It allows students to follow an optimal learning path based on various types of instructional methods, which include group projects, instructional software, and individual and small-group time with teachers. This approach differs from the traditional way of teaching, which emphasizes leading the whole class to learn a common lesson (Childress & Benson, 2014).

Schools and teachers can personalize instruction in many ways. And there is no one optimal way to achieve this goal. Different views also exist about personalized learning. For some educators, it means adding a personal touch when dealing with students. For others, it involves modifying instruction based on their needs. The differences in ideas about personalizing instruction have led to confusion. Many educators know little about this approach or think that it is too difficult to implement. And others perceive it as a fad that will disappear like other ones that come and go quickly (Keefe, 2007).

These views are unfortunate because when implemented well, personalized learning can help students make strong academic gains. For instance, after providing support to teachers on differentiating instruction, the Summit Public Schools in California experienced impressive success in enhancing students' academic progress. Six of Summit's charter schools improved their reputation as institutions that prepare students well for college, although they served a considerable number of pupils from low-income families (Childress & Benson, 2014).

After analyzing data on the students who went to college, Summit administrators discovered that many pupils were not ready for college-level math. This problem led to a need to explore ways to enhance math preparation. Summit teachers then personalized learning by developing a blended math model with Khan Academy (Childress & Benson, 2014). Blended learning consists of a combination of different models of teaching and modes of delivery (Gonzales & Vodicka, 2012). This approach combines face-to-face and online instruction to customize learning for each student and makes content more accessible. When implemented well, it usually involves student choice or agency in their own learning (Pierce, 2017).

Fortunately, approaches based on personalized learning have increased considerably in recent years. ESSA is partly responsible for this trend because it authorizes Congress to provide funding for professional development. Districts can use this funding for supporting teachers to integrate technology into the curriculum to personalize instruction and implement blended learning (Center for Digital Education, 2017). It was recently estimated that at least three-fourths of U.S. school districts have used some form of blended learning (Pierce, 2017).

One of the ways teachers can implement blended learning is by converting their classrooms into "flipped classrooms." This approach to teaching personalizes instruction to a certain extent because it permits students more chances to learn at their own pace. Students learn at a level that matches their abilities because they receive instruction through a video at home rather than through a face-to-face setting. When teachers provide instruction through a traditional approach, they usually deliver content too slowly for some students and too quickly for others. However, when students have access to the content on a video they view at home, they can view difficult material over and over and spend little time on content they easily understand. When lecturing, teachers typically have little information on which content students understand, because they normally get this feedback after reviewing students' homework. In contrast, in a flipped classroom, students do much of their "homework" at school, allowing the teacher to provide more guidance to students who have difficulty, while offering more challenging work for those who find it easy (Morgan, 2014a).

Blended learning can be implemented in a variety of ways. But regardless of how teachers use this approach, it requires more time to plan. The planning involves preparing the variety of activities that will match students' abilities and appeal to their learning preferences. Although teachers may be intimidated by having to design different lessons based on students' needs, the progress students typically make is usually worth the extra effort teachers put forth (Pierce, 2017).

To plan well for personalizing or differentiating instruction, teachers need to have a strong understanding of the theories behind this approach to learning. As previously mentioned, Howard Gardner's theory of multiple intelligences is crucial for understanding how to provide instruction based on the different minds people have. Another critical theory for knowing how to personalize instruction is Lev Vygotsky's zone of proximal development.

Lev Vygotsky's Zone of Proximal Development

Gardner's theory of MI is similar in some ways to Lev Vygotsky's zone of proximal development. Indeed, differentiated instruction has been described as an approach to teaching based on both Gardner's MI theory and Lev Vygotsky's zone of proximal development (Morgan, 2014b). These two theories are alike in that they have similar implications in regard to teaching according to a level that matches students' abilities. As previously mentioned, Gardner indicated in one of his books that if teachers continuously teach students according to the intelligences they are weak in, students will feel stupid. Vygotsky's theory also suggested that if there is a mismatch between teachers' instructional methods and the skills of their students, negative outcomes will likely occur (Morgan, 2014b).

According to Lev Vygotsky, the zone of proximal development involves the level at which a learner can achieve a task with the guidance from a more capable peer or an adult (Vygotsky, 1978). According to this theory, teachers need to teach students having difficulty understanding a concept in a way that will allow them to comprehend the concept and proceed at their own pace. One way to fulfill this goal is by providing instruction through the intelligences students may be strong in for the purpose of developing their weak intelligences. For example, as noted earlier, children with weak verbal skills but strong spatial skills will much more likely improve their verbal skills if their teachers use plenty of pictures, images, photos, and drawing activities. But if teachers insist that their students can learn as well as those with more advanced verbal skills without such visual aids, those with weak verbal skills will likely feel frustrated.

Research on the chemicals the brain releases when students learn supports the idea that teachers need to instruct students according to students' abilities. If students are frustrated or bored because the instruction their teachers provide is too difficult or easy, their brains will likely release too much or too little of the chemicals needed for learning. As a result, they may experience a sense of withdrawal or behave inappropriately (Morgan, 2014b).

Teaching according to a level that matches students' abilities does not necessarily mean relying on the intelligences not commonly used during classroom instruction. Students can be taught according to the zone of proximal development simply by adjusting instruction so that it is neither too challenging nor too simple. However, in many cases, when teachers provide instruction through a wide variety of intelligences rather than a few, they make content easier for students who would otherwise have difficulty understanding it (Morgan, 2014b).

When teaching math, for example, teachers can make content easier to learn by allowing students to use manipulatives, which are physical objects such as pens. Such an approach creates opportunities for students to interact

physically with objects to learn new content (Carbonneau, Marley, & Selig, 2013). By using this method, teachers permit students to learn in part through their bodily-kinesthetic intelligence. The use of manipulatives also encourages students to connect concrete experiences to abstract concepts and usually makes math fun to learn (Tichenor, 2008).

Ideas on Enhancing Creativity

Personalizing instruction is not the only topic Gardner discussed regarding how the education of students might be improved. He also covered topics involving creativity and provided examples of how certain people developed their creative potential using each of the intelligences he identified. These people are important to study because they shared certain qualities allowing them to be creative. Educators, therefore, might attempt to promote the development of these qualities to enhance student creativity. Gardner also offered his ideas about what educators might do to promote creativity.

Before exploring some of the individuals he identified as exemplars in the area of creativity and his views on the approach most likely to promote creativity, it is important to explore his understanding of creativity. Gardner indicated that creativity occurs when someone produces something new that first seems odd but becomes accepted by people who have knowledge about it. The decisive test involves whether the domain the invention is associated with becomes changed as a result of the invention (Schreuder, 1997).

Another important aspect involving creativity is that it differs from intelligence. In fact, psychologists often perceive people with creative potential as those who think divergently. However, intelligent people are often perceived as those who think in a narrower way. Rather than generate a large number of possible answers, intelligent people tend to be thought of as those who can figure out the right one. Although creativity is correlated with intelligence, people can be highly intelligent with unimpressive creativity skills or be much more creative than intelligent (Gardner, 2011c).

Individuals with Extraordinary Creative Skills

Gardner (1995) chose examples of people who had extraordinary skills in each of his intelligences. These people included T. S. Eliot (linguistic), Sigmund Freud (intrapersonal), Pablo Picasso (spatial), Albert Einstein (logical-mathematical), Igor Stravinsky (musical), Mahatma Gandhi (interpersonal), and Martha Graham (bodily-kinesthetic). In thinking about the creativity of these individuals, he considered the interaction of three constituents:

1. The individuals themselves with their styles and needs.
2. The area of knowledge in which each person specialized.
3. The collection of people who offered awards and training and who made judgments regarding the products the individuals produced.

He noted that it makes no sense to think that creativity emerges by thinking about the individual without considering the field and the domain: "the possibility of creativity emerges only when an individual carries out work within a

domain and the field ultimately comes to value that work" (Gardner, 1995, p. 35).

In exploring the lives of the seven individuals, Gardner noticed some similarities in their personalities and in the way they lived their lives. One similarity was that they tended to reject standard practices and desired to try new things. For instance, Einstein rejected the paradigms of the physics of his time (Gardner, 2011c). These creative people also needed cognitive and affective support. Those who provided them with affective support loved them and assured them they were not crazy. And those providing cognitive support realized they were in the process of making an important discovery (Gardner, 1995).

Gardner found that these individuals had above average ability in more than one intelligence. For instance, Einstein had outstanding logical-mathematical skills as well as excellent spatial skills. And Freud not only had notable personal skills but also had excellent linguistic skills. These extraordinarily creative people were also difficult, demanding people at some point of their lives. Although it might be misleading to describe some of them as workaholics during their youth, all of them became so absorbed in their work to a degree that nothing else was more important. Gardner indicated that great creators are responsible for a number of breakthroughs during their lives and that it takes about 10 years for them to achieve each one (Gardner, 1995).

There were also differences among these people. For example, the breakthroughs they were responsible for reflected different ways of thinking. Freud's achievements and thought processes differed from Einstein's. For this reason, Gardner mentioned that there are various forms of creativity (Gardner, 2011c).

Environment for Promoting Creativity

One of the questions parents and educators may want to ask themselves is whether they want their children or students to grow up to be like one of the creative people just mentioned. When children stand out from others for doing things differently, they frequently get rejected (Schreuder, 1997). Considering that the creative people Gardner identified endured significant pressures and challenges, some adults may not perceive the experiences these individuals had as the ideal ones for their children. Fortunately, students can be creative as educators attempt to minimize the challenges associated with being creative. Promoting creativity is therefore a goal that educators should generally consider worthy and desirable to achieve. An environment encouraging discovery learning tends to be more motivating as well (Stapleton & Stefaniak, 2019).

The results of a nationally representative study conducted by Gallup and designed to explore the outcomes of assignments that promote creativity indicated that such assignments contribute to many benefits. Teachers who frequently assign creative activities were more likely to feel that their pupils show important components of learning, such as the development of problem-solving and critical-thinking skills. The majority of parents and teachers participating in the study felt that the most important educational strategies were those that promote creativity. Unfortunately, the study's findings indicated

that although creative work contributes to many academic benefits, such work is too often not assigned (Gallup, 2019).

Encouraging students to develop some of the qualities the seven creative people Gardner identified can allow educators to provide the kind of environment students need to be creative. So what did Gardner mention about the characteristics of people who achieve breakthroughs? First, such people know their domain well. For example, without knowledge of music, it is impossible to write music. Creative people are also risk takers who are not easily subdued. And they invent something at a time when there is a need for it. For instance, Einstein's theory would have been harder to accept had he developed it a century earlier than the time he came up with it (Schreuder, 1997).

Unfortunately, the encouragement of creativity is usually a low priority in many schools. Students who take risks and reject standard practices are likely to contribute to a disruptive environment. Gardner suggested that most teachers would probably prefer for the development of creativity to occur during extracurricular activities after school rather than deal with such an environment on a regular basis (Gardner, 1995). He suggested that the development of creativity is often considered a luxury, which progressive schools might promote. Wealthy parents who can provide more than a basic education for their children may be able to offer an environment that promotes creativity, but it is unrealistic to expect the average school to provide it. Schools may have good reasons for not emphasizing the development of creativity. In addition to the possibility of having to deal with a more disruptive environment, teachers need to teach various subjects and to encourage civility (Gardner, 1995).

However, as noted earlier, a creative environment usually contributes to many benefits. To provide such an environment, Gardner mentioned a few strategies. First, children need to know that taking chances is fine. They need to be supported because doing things in a different way increases the chances of being rejected. Children also need to know that there are limitations to the chances they can take. Although encouraging creativity requires educators to accept more responsibilities, they experience a strong sense of fulfillment when they guide someone who goes on to make an important contribution to society (Schreuder, 1997).

Importance of Developing Creativity at an Early Age

Children display works showing their creativity at an early age. Such works consist of the scribbles early drawers create and the stories young children tell. These examples show their willingness to take the risks that characterize great inventors. Gardner discussed that adults may even draw upon these early activities when they are involved in creative endeavors (Gardner, 1991).

To develop into one of the seven creative people Gardner identified, young people need to have the basic skills of the domain they will use to create new products and ideas. Gardner discussed that it is in the middle years of childhood that children are most suited to develop skills in a domain and that adolescence is the best time to combine these skills with the creativity that they often display during earlier years (Gardner, 1991).

In one of his essays, he described what he believed was the best approach to develop creativity during the early years. In this essay, he also mentioned the influence of John Dewey and Jean Piaget on the American education system. According to these Western thinkers, childhood is not just a time of transition to adulthood but a time when children display their genius. The Western view emphasizes that children are born knowing how to solve problems and that those responsible for raising them need to permit children to mature at their own pace. Schools should therefore refrain from strict instruction. Instead, they need to supply an environment that allows children to flourish (Gardner, 1989).

Although many American schools are criticized for their failure to promote creativity, innovation is generally tolerated. Indeed, Gardner mentioned that according to the American view, the ideal method for dealing with a new problem is to offer many chances to investigate it with little instruction from a teacher. This way of exploring is frequently considered the optimal approach for finding out one's competence in relation to a problem. Students who can solve problems in new ways should be praised. However, aid may be appropriate if they become frustrated. In offering aid, educators should refrain from providing answers. Instead, it is best to offer suggestions and hints. Gardner (1989) indicated that those who are responsible for the most innovative achievements tend to proceed in a novel direction and make decisions on their own.

Gardner's views about the ideal environment for learning are in many ways similar to Jerome Bruner's cognitive constructivist approach. In fact, Gardner mentioned that Bruner increased his awareness of many issues (Gardner, 2011b). According to Bruner's constructivist approach to learning, children construct new knowledge by exploring things in the world. The teacher's role during this process involves setting up an environment that will allow students to discover associations between concepts rather than playing the role of an authority figure (Stapleton & Stefaniak, 2019).

Regrettably, it is not unusual to observe teachers instruct students in a manner antithetical to the philosophy of teaching based on the constructivist approach (Ellis, 2010). Such teachers lead students to become dependent and dominate the class instead of playing the role of facilitators. In contrast, teachers who implement a style of teaching based on Bruner's ideas provide students with opportunities to explore. Such teachers create an environment that promotes creativity and motivation. Bruner's approach to learning encourages creativity because it creates opportunities for students to learn actively, creating chances for them to be exposed to new ideas. And active learning not only contributes to motivation but to retention as well (Stapleton & Stefaniak, 2019).

These are some of the reasons it can be important for children to have opportunities to explore at a young age. However, as Gardner noted, in order for creative people to produce valuable outcomes, they need to have the skills and knowledge of a domain. Parents and teachers might ask whether children should be instructed to develop skills first and then have chances to be creative later or whether they should be allowed to explore first and then have opportunities to develop skills later. Gardner believed that the preferred ap-

proach included devoting the first seven years of children's lives to a creative approach that focuses on exploring and that after this period, instruction could focus on basic skills (Gardner, 1989). He reached this conclusion as a result of his understanding of developmental psychology and his observations in various countries. However, he acknowledged that it is possible to implement an approach focusing on skill development that leads to creative products (Gardner, 1989).

Although Gardner believed that the early years of life needed to focus on an environment emphasizing exploration, he indicated that some skill acquisition during this period is important as well. And he warned of the danger of providing an environment that promotes too much creativity without enough skill building. Also dangerous is an environment that promotes too much skill building without allowing enough opportunities to develop creativity (Gardner, 1989).

Conclusion

Howard Gardner's theory of multiple intelligences has proven to be a crucial theory that sheds light on the different ways students learn and the need to deliver instruction according to their needs. When students are provided with instruction that matches their needs, they tend to learn more and remain engaged. Unfortunately, too many instructors overlook many of the intelligences identified in *Frames of Mind*. This practice is detrimental for several reasons. First, teachers who focus on developing a limited set of intelligences typically fail to take advantage of how students may be gifted in certain areas. Second, developing only a few intelligences oftentimes makes students weak in these intelligences feel inferior and prevents them from learning new content.

Promoting creativity during instruction appears to be as important as personalizing instruction based on Howard Gardner's MI theory. Requiring students to complete creative assignments develops students' problem-solving and critical-thinking skills. A classroom environment encouraging discovery learning will likely enhance student motivation and develop creativity. Such an environment is believed to allow students to retain new content for a longer period. By personalizing instruction in a manner that allows students to learn through an approach based on discovery learning, instructors can create an environment that benefits students in many ways.

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Brain and Learning

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SYNOPSIS

Introduction

Learning occurs when people interact, consciously or sub-consciously, with their surrounding environments, and thus this interaction creates learning experiences for them. It is known that as a result of learning experiences the people would have cognitive, affective and psychomotor behavioral changes. However, different views which put forwarded to in various times concerning how the learning occurs have led to different theories about learning. At this point, these theories which are just about to explain the nature of learning and its results can be classified as behaviorist, cognitive, affective and neurophysiologic or brain based theory.

The Purpose of the Study

In this study, the aim is to investigate the structure and function of brain, the ideas and models about brain and their reflection to education, learning and the main factors which effect learning with theoretical.

Methodology

The document analyses method (Karasar, 1995; Çepni, 2005) was used to discuss and present the existing theoretical knowledge written about the brain and learning in respect to neuroscience view drawn from the related literature. The knowledge mostly comes from major international sources.

Theoretical Discussions

The Structure and Function of Brain

Briefly stating, brain based theory mainly explains learning as a biochemical change. In order to understand the nature of this theory in a right way, it is regarded that both the structure of brain and its functions should be comprehended, and what the brain could make must be recognized. The brain looks like a web-knitted with neuron cells. The connections of recent and past information, and recalling the past information could be occurred by this web. The more frequent these synaptic connections are made, the more strengthen these are in the brain. If these are not made, then these could fade or be

forgotten. Thus, stimulating the brain with enriched experiences continuously is very important for the development of the brain (Thomas, 2001).

The Ideas and Models about Brain

Many studies have been done by various scientists in order to determine how people use their brain by means of advanced technologies. Based on these studies, various models have been developed about brain's structure. It is thought that if these models are known correctly, then brain research can be adapted to education more effectively. Hebb, Ornstein, Hermann and MacLean are the most acquaintance scholars who have implemented studies into this area recently. Hebb has described learning through neurological perspectives by explaining cell group and phase consecutiveness concepts. He has argued that how learning occurs could be clarified by observing differences in a brain before and after learning. Ornstein has executed researches about which functions are specialized in the left and right brain hemispheres. He has determined that the people who use one hemisphere more than the other are unsuccessful at some works which are related to less used brain hemisphere. Ornstein has observed an augmentation at general capacity of people who were guided to use both brain hemispheres coordinately. Hermann argues that investigating the brain as four different areas is much more suitable from examining it as left and right hemispheres. Hermann has separated the brain into four areas. He has symbolized left-top quarter of brain as A, left-bottom quarter of brain as B, right-bottom quarter of brain as C and right-top quarter of brain as D. Hermann has undertaken many researches with a sample of more than one million people to determine which quarter of brain they used mostly, and what these quarters' functions were specialized. Paul MacLean has offered the triune brain theory. According to this theory, brain were decomposed three areas as reptilian brain, limbic system and neocortex anatomically and chemically. He has stated that although these three layers perform different tasks, they work synchronously and interactively (Foster-Deffenbaugh, 1996; McFadden, 2001; Wortock, 2002; Özden, 2003).

Neuroscience and Its' Reflection to Education

Neuroscience is a branch of biology about brain and nerve system provides various data and related views. Recently, a working human brain could be observed by using advanced technologies such as MRI (Magnetic Resources Imaging), FMRI (Functional MRI), PET (Position Emission Tomography) and NMRI (Nuclear Magnetic Resources Imaging) (Taşçıoğlu, 1994). By these ways, a lot of factors; for example, memory, sensation, attention, patterning and their effects to learning could be scrutinized. Electrical investigation activities, clinic sample and brain imaging studies have generally been applied into electricity and electronic departments of universities and neurology and psychiatry departments of medicine faculties. Educators, particularly, are interested in brain and brain research, because it is a core organ which is directly related to learning.

Recent studies which have been done by different imaging techniques revealed new information that the human brain does not turn into constant situation. In reality, brain continuously changes and adapts renewals contrary to previous ideas. "Neural plasticity" which is developed by Marian Diamond is an important concept for education. Neural plasticity can be defined as the structural and chemical changeable ability of brain's response to its environment (Chudler, 2005). In other words, neural plasticity is the reorganization ability of nerve webs in the brain in response to the new life experiences. New information and skills which are obtained with teaching or experiences cause continually functional changing inside the brain.

Learning

Recent studies on neuroscience provide new description of learning which is different from the other theories. In respect to these studies, learning is to form new dendrites or new brain structure. Putting simply, people learn because brain can change its neural circuits (Weiss, 2000; Strickland, 2003; Wolfe, 2004).

Main Factors Effect to Learning

The main factors which affect learning can be enumerated as memory, patterning, attention, environment, sensation, motivation, nourishment and sleep. Memory is described as storage and re-usage capacity of information. It can be explained as firing of neuron bunches at cell dimension. The studies showed that frequent usage of brain makes neural webs strengthened. Patterning is brain's organization ability of information as categories. Patterning can be described as a great web or connected ways and tracks inside the brain. When newly learned information makes a person remember past information, the connection is built between neurons which consist of past information and other neurons which get new information in brain.

Attention is a basic element in learning and remembering is defined as focusing to think of an object or an event during a definite time. If a person does not exert upon a definite attention biologically, learning materializes difficulty. Learning can be increased with augmentation of attention. A learning environment must be designed in order to keep attention. Environment has very important role in the development of brain. An environment which provides students with sufficient health conditions, safety, regular nourishing, feedback, acceptance of the students as different individuals, giving permission for research and adapting neuroscientific data to learning environment is defined as a brain rich environment or an enriched environment.

Many researches also indicate that sensations have influence on learning and memory. Positive and negative feelings which are lived in learning environment cause different modifications in brain. Learning conditions which consisting of high level stress create fear. The effect of stress and fear in brain can be described as "downshifting". In this situation, someone performs safe behaviors to protect himself/herself instead of improving high level opinions. When someone lives downshifting, s/he does not take a risk, perceive probabilities. S/he feels himself/herself helpless and imagines restricted alternatives for treatment. Motivations and rewards make learning speed up too. It is determined that adequate nourishment abilities influence learning and remembering in positive way. Not only which foods should be eaten but also when these foods should be consumed in a day is also important. To maintain body and brain functions, a definite amount of water have to be drunk. Sleep which organizes cognitive and physical functions of body is basic component of learning. It is known that regular sleep affects the transfer of information into long term memory (Banikowski & Mehring, 1999; Ziylan, 2001; Strickland, 2003).

Results and Suggestions

Theoretical foundations, models about applications and evaluation principles ought to be clearer for brain based learning. In addition to neuroscientific data, psychological, sociological or philosophical dimensions must be taken into consideration to describe learning. Many teaching strategies which have been applied for many years and defined with experiments were gained a meaning with neuroscience and their reasons could be examined deeply. For this purpose when data provided from neuroscience harmonized with old knowledge could bring new descriptions into learning and discovery of nature of science could be provided.

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Al-ZARNUJI'S THOUGHT OF EDUCATION AND ITS IMPLEMENTATION AT *PESANTREN*

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ABSTRACT
The study aims to find out al-Zarnuji's basic concept of knowledge, learning material, ethic, strategy, process and his contribution as well as to explain conceptual model on the basis of his thought at the institutions. In *Pesantren* Kebon Jambu al-Islami, Buntet and Bendakerep Cirebon, the *Kitab Ta'lim al-Muta'allim* is used as main reference of learning ethic. The study used qualitative research method. Source and kind of data were determined by the researcher as information center with purposive trait as long as it is supposedly representative. The result indicates that the implementation of the book *Ta'lim al-Muta'allim* at those *pesantren*s was less satisfactory due to textual understanding. In order to effectively implement the book *Ta'lim al-Muta'allim* at those institutions, the contextual description is required.

Keywords: Al-Zarnuji, Learning, *Pesantren, Ta'lim al-Muta'allim.*

ABSTRAK
Makalah ini bertujuan untuk mengkaji konsep dasar pengetahuan, materi, etika, strategi, proses pembelajaran dan kontribusi al-Zarnuji, serta untuk menjelaskan model konseptual berdasarkan pemikirannya di lembaga pendidikan Islam. Kitab Ta'lim al-Muta'allim digunakan di Pesantren Kebon Jambu al-Islami, Buntet dan Bendakerep Cirebon, sebagai rujukan pada pembelajaran akhlak. Penelitian menggunakan metode penelitian kualitatif. Sumber dan jenis data ditentukan oleh peneliti sebagai pusat informasi dengan metoda purposif asalkan diduga mewakili. Hasil penelitian menunjukkan bahwa penerapan kitab Ta'lim al-Muta'allim di pesantren tersebut kurang memuaskan karena pemahaman tekstual. Untuk menerapkan secara efektif kitab Ta'lim al-Muta'allim di lembaga tersebut, deskripsi kontekstual sangat diperlukan.

Kata Kunci: Al-Zarnuji, Pembelajaran, Pesantren, Kitab Ta'lim al-Muta'allim.

INTRODUCTION

It goes without saying that in various *pesantrens* both traditional and modern, the book *Ta'lim al-Muta'allim* is used as a main reference in moral or ethic learning. This book is so popular that almost every *pesantren* student knows the book. Many scholars have examined the book in various points of view. Huda & Kartanegara (2015b) for example, have concluded that this book teaches three points: 1) the main goal of acquiring knowledge, it is classified as religious conservative-based ideology; 2) the basic concept of human character, it comes from a good interaction with a good environment; and 3) the importance of selecting good friends and teachers, this is done to produce good human character

In their subsequent paper, Huda and Kartanegara (2015a) explain that al-Zarnuji offers three formulations as the primary goal of education. *First*, to achieve Allah's approval; *second*, to guide each's development; and *third*, to possess the ability to interact socially. Huda et al. (2017) also explain that in the book *Ta'lim al-Muta'allim* it is firmly interpreted that education refers to a process of transferring knowledge and values simultaneously. Knowledge and value are two things that are inseparable in the learning process. The values resulting from the educational process are the values of Islamic character built on the basis of the Qur'an and hadith (Huda & Kartanegara, 2015a). Furthermore, Huda et al. (2017) describe the book *Ta'lim al-Muta'allim* introduces the learning process with a holistic approach. Learning with a holistic approach will enable resilient learners to cope with learning barriers.

In a recent study of the ethical grounds for a teacher, Huda et al. (2017) explains that al-Zarnuji emphasizes on several key aspects, namely: 1) professional ability; 2) critical thinking; 3) commitment; 4) interactive manner while teaching; 5) ability to play emotions while teaching; and 5) full of experience. In the same vein, Akhyar (2008) reviewed the book *Ta'lim al-Muta'allim* from aspects of learning method. The results of his research mention that the methods contained in the book is still very relevant if used in today's learning, such as methods of discussion *mudzākarah, munādzarah, muthāmbah*. Also, the principles of education described in the book *Ta'lim al-Muta'allim* are still very relevant to be used as a reference by teachers and students to achieve educational goals (Miftahuddin, 2006).

In addition to previous research on the content and learning methods contained in the book *Ta'lim al-Muta'allim*, there is also a study investigating this book from the systematic aspects of writing the book and methods to study the book. The study was conducted by Ummah and Wajdi (2016). Their research explains how al-Zarnuji began the book Ta'lim al-Muta'allim and the division of each chapter. Similarly, this study informs how we should study each of the books.

From the above descriptions, it is known that there have been a lot of research done about the book *Ta'lim al-Muta'allim*. Nevertheless, there is always another side that has never been studied. This study, for example, seeks to look at another aspect of this book, which is the implementation of the book study of *Ta'lim al-Muta'allim* in Islamic educational institutions. Nowadays, there is a trend in our society that *pesantren* is enthusiastically integrating religious education with the secular one as a response of demand in society which is more developing. However, there are some improper tendencies with Islamic educational principles. Among them are as though education has lost its ethical message, education has turned its goal of human creation aside and only orients on specific demand. This situation creates a dilemma and leads to educational crisis. Therefore, it is requisite to research educational model at the *pesantren* specifically in Kebon Jambu al-Islami Babakan Ciwaringin, Buntet and Bendakerep Cirebon which is still using the book *Ta'lim al-Muta'allim* as reference of learning method and ethics up to present. Related to this, there appears a basic question to discuss. The question is: how those *pesantrens* comprehend and implement basic concept of learning, subject matter, ethic of learning, strategy of learning and the process of learning to build ethical education in those institutions?

In the practice of teaching at the *pesantren*, the determination of a theoretical foundation for whole situation is less favorable measure. Because there is no single learning theory which is appropriate for entire situation. Each theory has distinct foundation and is usually compatible for certain situation. Therefore, the type of learning adhered on learning at the *pesantren* is the unity which means that it equips each other and it does not contradict each other.

Related to this, the focus of this research is the implementation of al-Zarnuji's educational thought on the education at *Pesantren* Kebon Jambu al-Islami, Buntet and Bendakerep Cirebon. In the end, this paper try to find out the conceptual model on the basis of al-Zarnuji's thought on the education at the *Pesantren* Kebon Jambu al-Islami, Buntet and Bendakerep Cirebon.

METHOD

This research used descriptive-qualitative method. To achieve the comprehensive and holistic reflection on learning at the *Pesantren* Kebon Jambu al-Islami Babakan Ciwaringin, Buntet and Bendakerep Cirebon, the researcher endeavors: 1) to take up the data from such situation; 2) to observe research setting and interview the informan in person; 3) to consider the process and event happened rather than the result or output attained; 4) to analize the data using inductive principle; 5) to interprete the data to comprehend the real situation; 6) to verify validity of data and information from the field and informan by matching them with data from other source.

The sequence of the research covered pre-observation, observation, intensively analytic action. In the implementation, pre-observation activity concerned with initial study of research setting, discussion of the book *Ta'lim al-Muta'allim*, literature study and compiling research design including the instruments of data collection. Observation, interview and documentation study were applied in the field activity. All collected data, then, were intensively and comprehensively analyzed and interpreted as well as concluded.

RESULTS AND DISCUSSION

The Book *Ta'lim al-Muta'allim*

Al-Zarnuji and Ismail (1995) with his monumental book, *Ta'lim al-Muta'allim*, is extremely popular in *pesantrens*. Moreover, this work becomes the gate for students to start learning. This book has been translated into various languages such as English, Urdu, Latin and Indonesian (Nakosteen, 1964). It is not precisely well-known who al-Zarnuji is. Plessner as quoted Sayyid Ahmad Utsman in *Min 'Alam al-Tarbiyyah al-'Arabiyyah al-Islâmiyyah*, asserted that al-Zarnuji was an Arabian philosopher not definitely known who he actually was. It was confirmed by Sayyid Ahmad Utsman that al-Zarnuji was known as the follower of Hanafite persuasion. He was the student of al-Farwani al-Marwani. He roughly lived in the end of sixth century or in the beginning of the seventh century. He lived in Khurasan, a small city with good Islamic educational environment with Hanafite persuasion. Based on his familial relation, al-Zarnuji was probably from Zarandji, a town in Persia and Sijistan, a city in the southern part of Heart (now Afghanistan). There was not adequately significant information to be accurate data. Apart from this speculation, however, there was something undeniable that al-Zarnuji lived in the era when Islam had had its setback on government and thought.

The book *Ta'lim al-Muta'allim* generally contains three primary aspects of discussion. *The first*, it contains the basis of learning comprising: a) *ilzâmiyat al-ta'lim* (learning obligation). Here, learning is an obligation and prevails all one's life; b) *aghrâdl al-ta'allum* (learning goal). Each Moslem is obliged to master religious knowledge and apply it to worship well to God as the purpose. *The second*, it contains *al-mawâd al-dirâsiyyah* (learning materials) covering: a) *'Ulûm fardl 'ain* (primary knowledge). In this case, the material of religious application lesson is put into curriculum. It is dominated by knowledge such as *fiqh* (Islamic law), *akhlak* (moral) and *tasawuf* (mysticism); b) *'Ulûm fardl kifâyah* (secondary knowledge) namely knowledge required to perfect

one's life. *The third*, it contains learning method consisting of: a) learning ethics comprising *al-niyyah* (intention) which is according to al-Zarnuji is learning principle and it becomes reference to guide and focus any activity to the purpose. To search for knowledge, it is not only by intention (*al-niyyah*) but also perseverance (*al-jidd*), resignation (*al-tawakkul*) and respect (*al-hurmah*). Students must respect their parents, teachers, friends and erudite people surrounding them; b) learning strategy covering *ikhtiyar al-ustādz* (selecting teacher). Al-Zarnuji quite spotlights the issue of educator a lot including the criteria of selected teacher. The characters of selected educator are more knowledgeable, more careful from committing a sin. *Ikhtiyār al-syarīk* (selecting companion), Al-Zarnuji and Ismail (1995) affirms that students should be perceptive to this matter by selecting appropriate companions so that they are able to motivate to attain success in seeking knowledge. *Tasyji' al-nafs* (self-motivating), al-Zarnuji spotlights the issue of students in the term of motivation. He utters that students should choose good school and knowledge they like; c) learning process consisting of *bidāyat al-sabq wa qadrih* (time of learning). According to Al-Zarnuji and Ismail (1995), a good time to begin learning is Wednesday and the proper time to learn is *baina al-isyāain* (at the time to perform west prayer and evening prayer) and at the time prior to performing dawn prayer. *Tadarruj fi al-tadrīs* (stage of learning), it is suggested for the teacher to make lesson briefer and easier so that it can be understood and remembered easily. Basic learner is desirable to memorize the lesson very well. *Tikrār al-durūs* (reviewing lesson), after memorizing, students are suggested to be able to comprehend the lesson by reviewing each material taught. Al-Zarnuji reveals, memorizing two letters is better than hearing two lessons all at once and comprehending two letters is better than memorizing two lessons all at once. *Daur al-ta'ammul fi al-ta'lim* (thinking process), *mudzākarah* (changing one's mind), *munāzharah* (public debate) and *muthārabah* (forum of discussion) are implementation methods of discussion. Discussion is the most effective method because of its dialog and dialectic character. *Al-Ta'lim al-Mutanāwib* (having apprentice), reflecting and rethinking to find the essence of knowledge. An appeal for having ability to reflect or actualize lessons taught is addressed to the students. Only by reflection, all matters can be solved. *Nashāih li al-muta'allim* (adjustment), Al-Zarnuji & Ismail (1995) argues that students never hold on to their own belief and thought but it is desirable that they place their trust in God to search for the truth from Him. It means that an effort of seeking knowledge, prayer and resignation are pedagogical unity that should be held by every seeker of knowledge. *Mu'taqadātu 'atbrib* (developing trust in its period) it is suggested that a learner not sweep in the evening, mop the floor with fabric, burn onionskin, wear trousers while sitting and wear turban while standing and many others.

Implementation of Learning Based on Book *Ta'lim al-Muta'allim* at the *Pesantren* Kebon Jambu al-Islami Babakan Ciwaringin, Buntet and Bendakerep Cirebon

From the educational practice at the three *pesantrens*, it was found a fact that learning concepts applied covered learning basis, subject matter, learning ethic, learning strategy and learning process. Based on the result of interview carried out at those institutions and fact observation in the field, it was known that the book *Ta'lim al-Muta'allim* became a guidebook to educate students. It was explained that: 1) the basis of learning in *Ta'lim al-Muta'allim* referred to Prophet Muhammad's words asserting that learning is obligation for each moslem and it was carried out during his lifetime; 2) *kyais* classified subject matter into two categories. *The first* is knowledge related to act of devotion in any kind of situation for each individual (Moslem). To learn this kind of knowledge is obligation for each moslem (*fard 'ain*). *The second* is knowledge concerning with issues affecting someone to certain reasons. To seek this knowledge is *fard kifāyah* (communal obligation); 3) *kyais* emphasized learning ethics on four matters namely intention (*niyyah*), perseverance (*al-jid*), resignation (*al-tawakkul*) and respect (*al-hurmah*); 4) learning strategy applied covered four respects. They were selecting subject (*ikhtiyār al-'ilm*), selecting teacher (*ikhtiyār al-ustādz*), selecting companion (*ikhtiyār al-syarīk*) and self-motivating

(*tarjiʻ al-nafs*); 5) learning process carried out with *kyais* comprised *bidāyat al-sabq* (time of learning). It was explained that the effective age to learn is in the young age and a good time to learn is between the time to perform west prayer and evening prayer and at the time prior to performing dawn prayer. When students had completed a lesson, they should move on other lesson. *Tadarruj fī al-taʻlīm* (stage of learning), students should learn in stages from the simple lesson to the complex one. *Tikrār al-durūs* (reviewing lesson), students should learn repeatedly. *Daur al-taʻāmmul fi al-taʻlīm* (thinking process), students should carry out discussion with their companions, change one's mind and do debate. Debate is a kind of discussion and discussion is to gain the truth. *Al-taʻlīm al-mutanāwib* (having apprentice), the process of reflecting and rethinking to find the essence of knowledge. Students are suggested to have competence to reflect or actualize the lessons taught. Only by reflection, all matters can be solved. *Nashāih fi al-muta'allim* (adjustment), Al-Zarnuji and Ismail (1995) argued that students never held on to their own belief and thought but it was desirable that they placed their trust in God to search for the truth from Him. It meant that an effort of seeking knowledge, prayer and resignation were pedagogical unity that should be held by every knowledge seeker. *Mu'taqadātu 'ashrib* (developing trust in its period), it was suggested that a learner should not sweep in the evening, mop the floor with fabric, burn onion skin, wear trousers while sitting and wear turban while standing and many others.

Based on the observation, it was found that at the *Pesantren* Kebon Jambu al-Islami, Buntet and Bendakerep Cirebon was influenced by the book *Ta'lim al-Muta'allim*. This is to say that the influence was so dominant. All concepts contained in *Ta'lim al-Muta'allim* were applied in the educational practice at those institutions. Unfortunately, the experience of the concepts implemented was less satisfactory due to textual comprehension of *Ta'lim al-Muta'allim*. The implementation of education has not functioned properly yet. In the continuously developing and competing age, the activity at those institutions centers upon studying Islamic religious knowledge without any actualization dealing with today's life demand. Whereas, the potential to develop a better educational process is extremely wide open. Educators still hold very infinite authority. Learner is like an empty glass filled by all educators without being able to do much. Moreover, it is deemed a *sūn al-adab* (bad moral) when there was student trying to be critical. The material is concerned with the matters related to the worship in *mahdlah* (relationship with divinity). It lacks of attention to pupils' future demand later to undergo life in the society, so that the greatness and depth of *Ta'lim* could not be maximally absorbed by *salafi pesantren* specifically Kebon Jambu al-Islami, Buntet and Bendakerep Cirebon.

To achieve learning objectives, al-Zarnuji's concept has clearly explained that learning process does not only depend on the educators' role but also learners can play the role as subject in educational process. It means the opportunities to develop pupils' creativity and intellect can be conducted by themselves besides others' role providing assistance to their development which is educators in this case. If examined more deeply, the concept in the *Ta'lim* has outlined this issue. There are some respects that are explained by Al-Zarnuji and Ismail (1995) related to educators' duties and responsibilities in optimizing learning. They are as follows.

1. Optimizing learners

It means being able to develop learners' inward attitude and mentality. This leads to the perfection of attitude and keeping away from the values which bring up negative implication to themselves. Al-Zarnuji and Ismail (1995) asserts that learners should rid themselves from all bad deeds and characters, own sincere and good intention, possess right principles, great soul, intact determination constantly to receive the best respects.

2. Optimizing educators

It implies that to optimize learners to be a good human and to achieve expected learning outcome, educators require to organize certain criteria. Educators should meet the criteria and

this becomes inevitable because the function attached to them is sufficiently significant. Al-Nahlawi (1995) concludes that educator has two functions. *The first,* the function of sanctification. It means that an educator functions as self-cleanser, caretaker, developer, and maintainer of human nature. *The second,* the function of teaching. It means that an educator has function as conveyor of knowledge and faith to human in order that they can apply all their knowledge in daily life. For educators it is their obligation to spare away their knowledge in order to glorify the knowledge, so that educators are not allowed to make their knowledge as their commodity because it degrades the greatness of knowledge (Al-Dîn, 1985, p. 125)

In this case the reason is actually rational because it shows the causal relationship between science and teaching in their perspective. On the other hand, the causality occurring when it is linked with the context of education today becomes questionable, because the expertise in the field of education teaching becomes the biggest alternative choice in the community as an economic business opportunity. Nevertheless, what can be drawn from the criterion is a sincere attitude of the educators in spreading their knowledge to the learners. In general, these criteria reveal the perfection of educators' characteristics and circumstances by having certain conditions so that they are feasible to be educators as they should be.

The next thing to do is to establish harmonious, loving, and dialogical relationship between learners and educators. This optimization is necessary to achieve sound learning process. Education is an individual issue with a broad demarcation. Therefore, an educator must have harmonious relationship with learners and learners should have a broad opportunity to take the advantage from educators regarding both moral and science (Al-Attas, 1984)

Al-Abrasyi and 'Athiyah (1984) states the creation of a loving personal relationship between educators and learners can be a factor in the success of teaching and learning process. The success of educators is marked by embedded trust and love between educators and learners. When educators love their students and they perceive educators' affection caress, the matters and difficulties in teaching will be easy to overcome and something difficult becomes easier. Students' hatred of a subject is often caused by their hatred of educators teaching the subject. On the contrary, students like a subject due to their enjoyment to the educators teaching the subject.

It is strictly stated that there must be a pedagogical contact in the educational process. This is to say that educators are able to know childhood realm (immaturity) of learners faced and at the same time learners are also able to reach their educators' maturity (Nawawi, 1993). Thus, it is extremely clear that harmonious situation between educators and learners is very significant.

3. Optimizing curriculum

Regarding the curriculum, Al-Zarnuji & Ismail (1995) has revealed that curriculum is basically divided into two categories namely fard 'ain (compulsory to learn) and fard kifâyah (optional to learn). Qur'an, Hadith, *Ushûl al-Dîn*, *al-Fiqh*, and *Akhlâk* (morality) are parts of *fardh 'ain* curriculum in categorization. Afterwards, the additional subjects are only part of developing primary curriculum (fardu 'ain curriculum). For al-Zarnuji, the important and noble curriculum must be prioritized rather than other curriculum (Al-Kailani, 1986). It means that learners can conduct a study of the above curriculum in a hierarchical manner. Learning any kind of science is permissible as long as it does not abandon the compulsory field of knowledge.

From the above exposure, if the content of material in curriculum developed by Al-Zarnuji & Ismail (1995) is distinguished, it can be classified into two categories. *The first,* basic curriculum as reference and paradigm of developing other disciplines. The first curriculum is concretely explained with the religious curriculum. *The second,* refers to developed curriculum which is beyond religious curriculum. The review applied in the second curriculum is based on basic curriculum so that the basic curriculum provides color to the developed curriculum. What al-Zarnuji does is actually a must. Knowledge must be affected by religion values, because when it

is not, it will be evil, pure, and simple. However, if it is affected by religion values, it will be a mercy for mankind (Arifin, 1996).

Therefore, to prioritize the curriculum of the Qur'an from others seems extremely appropriate. Because the Qur'anic curriculum is a distinguishing feature between Islamic education curriculum and other education curriculum (Al-Attas, 1978). The Qur'an is the greatest book as the source of education philosophy and teaching for Muslims. It is a must that Islamic education curriculum is compiled in accordance with the Qur'an as well as hadith as its complement (Ramayulis, 1982).

In term of curriculum, where Qur'an is the source, it seems that it has been convinced by Langgulung (1980). He mentions that dualism in the form of religious and secular knowledge is not characteristic of education based on the Qur'an. Even if it happens, it is caused by socio-political factors either from external environment or the internal one. Because the signs (verses) of God's omnipotence are manifested in human and universe aside from those available in the Qur'an, the thing to be preceded is commandment revealed and it is the first category of subject that must exist in education curriculum. The subject must have relationship with Qur'an and Hadith. It is called education with knowledge in the frame of revelation (Hasbullah, 1996). Thus, curriculum which is able to maximize learners is the curriculum which refers to religious dimension, specifically based on the Qur'an and developed in accordance with the needs and circumstances as well as demands of life.

4. Optimizing environment, facility and learning equipment.

These aspects are one of aspects which could not be separated from education. This is to say that facilities and learning equipment are factors that play role in the successful learning activities. In fact, the educational experts generally argue that the improvement of facilities and learning equipment is an inescapable condition to create educational goals (Daradjat, 1996). Al-Zarnuji & Ismail (1995) also notes that the thing included in a good facility and learning equipment is the environment itself with social interaction upholding ethical values and complementary relationships. The social interaction concerned is not free social intercourse without clear goals but it is social intercourse with limitation in accordance with one's respective ability. It is known from his statement that learners should not associate with their opposite sex because it will waste the opportunity and dissipate contribution. To have social interaction can be carried out when there is a good value. Moreover, in order to be friend, people should meet the criteria of good moral and upholding religion (Al-Dîn, 1985). Al-Zarnuji & Ismail (1995) asserts that the people to be a friend are those who own sincerity (*al-majd*), maintain themselves from bad deed (*wara'*), possess consistency of thinking (*shâhib al-thibâ' al-mustaqiem*). Thus, Al-Zarnuji & Ismail (1995) explicitly assumes that association as part of the environment and environment as an infrastructure as well as learning equipment take effect to the educational process. Since environment has a role in creating the successful education, the expected environment must be a conducive environment for learning namely a condition reflecting ethical and religious nuances.

Pesantren is not only required to be a religious institution with Islamic characteristic, but further it is demanded to play more role as principal and strong fort in maintaining and strengthening ethics and moral of nation. The *pesantren* should not only function as cultural filters, but it should also be able to become initiator and cultural controllers. The educational orientation proposed by the *pesantren* at a certain time should change or develop in accordance with the demands of era to be responded by the *pesantren*, because the *pesantren* which could not respond the demands of the era will gradually be abandoned by the community. Furthermore, this kind of the *pesantren* is considered incapable to serve students' needs as their competence for their future life in the community.

The societies still provide great hopes for education in the *pesantren*. They believe that education in the *pesantren* is able to serve other nuance to the learners compared to other educational institutions. In addition to providing a deeper understanding of Islam, the *pesantren* is also considered capable of creating a generation with good morality, which is nowadays not easy to do by other educational institutions. To gain society trust, the *pesantren* has to push ahead itself to be able to realize the hope of the society, so that it still exists and is able to compete with other educational institutions.

In developing the pattern of Islamic education in the *pesantren*, the educational system which is considered traditional should improve. In order to improve the quality and expand the educational development in the *pesantren*, it should take into consideration the following ideas.

a. The *pesantren* needs to develop more concrete educational objectives, not only relying on the image of its charismatic figures, but also having more orientation to the goals of Islamic education that refers to graduates' future competency standards. The graduates' competency standards demand graduates' profile with qualified skills including attitudes, knowledge, and skills. The graduates' competency standards are used as the guideline for assessment in determining students' graduation from the educational unit. The graduates' competency standard aims to improve intelligence, knowledge, personality, noble character, as well as skills to live independently and carry on further education (Anonimous, 2005). This development is in line with al-Zarnuji's concept stating that learning should be intended: to search for God's willingness, to gain happiness in hereafter, to get rid of ignorance, to develop and preserve Islam, to be grateful for having the grace of mind and healthy body.
b. The *pesantren* needs to develop the rational thinking applied in its educational system; namely the method of deductive, inductive, critical and causality thinking. It is carried out in order to enhance students' way of thinking from the traditional thinking method to the rational one. Because learning as a process in education. According to (Al-Zarnuji & Ismail, 1995), learning is to develop all the potential as effectively as possible physically and spiritually to learn, master, appreciate and spread away the knowledge gained either religious or secular knowledge (Anonimous, 2005).
c. *Pesantren* in this modern era also needs to develop a rational thinking about Islam by teaching the subject matter of philosophy in order that students have a comprehensive perspective on the understanding of religion.
d. The *pesantren* is obliged to improve students' ability to master the skills, science and technology, so that they are competitive and ready to compete with graduates from other educational institutions to get into working environment after graduating from the *pesantren*.
e. The *pesantren* should develop a collectively rational leadership system to improve its educational quality. It can be carried out by establishing the council of *kyai*. The council of *kyai* has the authority to appoint and dismiss the leader of the *pesantren* with certain term of office. for example four or five years. He can be appointed again as long as he still meets the requirements. The limitation of term of office is established in order that the leader of the *pesantren* beware of carrying out his duties. Because if he commits an offense, he can be dismissed by the council of *kyai*.
f. The *pesantren* needs to revise the concept. It does not only have function as students' homestay but also the place to educate students which is optimally utilized in order to form their character. The *pesantren* should function as a three-center education namely family education, school education, as well as community education. It requires the council of *kyai's* hard effort, obvious program, firm action, and continuous supervision, so that the function of the *pesantren* can be achieved maximally.

g. The *pesantren* in the future should be able to create learners to be a generation with strong faith, steady piety, high intellect, critical and dynamic mind, noble morality, various skills, and the mastery of science and technology. The alumni of this kind of the *pesantren* will be able to compete with alumni from other educational institutions, even one step ahead compared with others.
h. The *pesantren* should maintain simplicity. It should be strived to be maintained and transmitted into formal educational goals by working together. Simplicity It is included in the points of objectives of the *pesantren* that are not found in formal educational objectives, which have the opportunity to be developed and strived to become one of the goals of formal education. The reason is that simplicity can lead people to own lifestyle as they are, not to force themselves to live beyond their ability, not to be extravagant, but to be easily grateful for the grace received and to have high social awareness to the people requiring their help.
i. The *pesantren* should cultivate sincerity. It is also the educational goal in the *pesantren* that is not found in the formal educational objectives. Thus, sincerity is also the educational goal of *pesantren* that has the opportunity to continuously be developed and pursued to be one of the objectives of formal education because sincerity can educate people to have a *qanā'ah* (to go through life as it is) lifestyle, not to be greedy and to prioritize one's interests from theirs. By owning such lifestyle, people will not take one's rights, seize the things which do not belong to them moreover to grab people's property.
j. The *pesantren* needs to receive whole-hearted attention from all parties, the Ministry of Religious Affairs, the Ministry of Primary and Secondary Education, the Ministry of Research and Technology, government and those caring about education. By conducting good cooperation between superintendent of *pesantren* and various parties caring about *pesantren*, the *pesantren* whose alumni meet the demands in this current era or in the future can be realized so that it is optimally able to provide its contribution to the national development.

Al-Zarnuji & Ismail (1995) educational thought mentioned on book *Ta'lim al-Muta'allim* roughly written in 539 Hijriyah is appropriate with contemporary educational view. It exceeds the contemporary one instead. The book *Ta'lim al-Muta'allim* not only discusses the basis of learning, strategy of learning and process of learning but also explains integration of knowledge and ethic never touched by contemporary educational figures.

Al-Zarnuji's thoughts are applied a lot by *kyais* specifically at the *Pesantren* Kebon Jambu al-Islami, Buntet and Bendakerep Cirebon. From the implementation of book *Ta'lim al-Muta'allim*, those *pesantrens* have different quality on character (moral), obedience (adherence), respect and simplicity.

Conceptual Model of Ideal Learning at the *Pesantren* Kebon Jambu al-Islami Babakan Ciwaringin, Buntet and Bendakerep Cirebon

To complete the learning process at *Pesantren* Kebon Jambu al-Islami Babakan Ciwaringin, Buntet and Bendakerep Cirebon, it is offered the conceptual model as follow.

1. Idea.

Up to present, the *Pesantren* Kebon Jambu al-Islami Babakan Ciwaringin, Buntet and Bendakerep Cirebon have not conducted ideal learning yet. Therefore, innovative learning startegy by applying effective learning model is required in order that those institutions can briskly grow up. The effectiveness means there is reasonable compatibility between expectation and result and right conformity between praxis and established standard.

Conceptual models of ideal learning is meant to improve education at *pesantren*. They must develop more concrete educational goal oriented to competence of graduate's future, improve rational thought in the educational system, increase model of rational thought in Islam by

teaching philosophy, expand function of *pesantren* as three-centered-education (family, school and society). Developing student means not only to master religious knowledge but also to have skill and to master science and technology.

2. Implementation of conceptual model of ideal learning.

To achieve its success, there are some assumption to fulfil. They are as follows.

a. Human resource.

The human resource must have good and sufficient competence. It is suggested that *ustadzs* (moslem scholar) have educational background at *pesantren* and the formal one at least bachelor degree with specification of appropriate field.

b. Learning operational fund.

In learning process, funding can be categorized into general and specific funding. General funding is expenses allocated to defray educational facilities such as supplying and maintaining facility at *pesantren* and educational program at *pesantren*. This fund is gained from students' registration fee and other donation. Meanwhile, specific funding is expenses allocated to realization of learning process such as learning design, learning implementation and learning evaluation. This fund is obtained from students' monthly tuition (*syahriah*).

c. Facility.

Facility required in the implementation of ideal learning process can utilize available facilities at *pesantren*. This facility can be categorized into two categories: general facility and specific facility. Facilities included into general facilities are classroom, mosque, learning instrument appropriate with goal and subject matter taught, book reference and students' stationeries. Besides, the kinds of specific facilities are learning media such photo, picture, diagram, sketch, globe, poster, and so on to display the facts relevant to the subject matter and to implement students' comprehension. The environment of *pesantren* constitutes sufficient laboratory to implement students' comprehension guided by *kyai* and *ustadz*.

d. Good managerial processing.

1) Planning.

Ideal learning should be designed in such away that it is appropriate with the competence of *pesantren* which has specific content namely not only to be appropriate with orientation of *pesantren* but also to meet the demand of job and business field. In addition, the implementation of learning should be escorted with innovative programs such as intensification of learning with training material–equipped-modul.

2) Implementation

Learning program at those *pesantrens* basically has been carried out well. However, it is better to do learning approach flexibly and in a dynamic way using recently popular learning approach namely active, innovative, creative, effective, pleasant, gratifying, and substantive learning.

3) Supervising and Evaluation

Supervising activity should be routinely carried out. Besides, the aspect controlled should be clear. It is not only having ordinary visit. Supervising is not only to control or evaluate implementation of learning but also to check individuals' work including relationship among them.

All the explanation about the conceptual model of ideal learning at *pesantren* can be summarized at Figure 2.

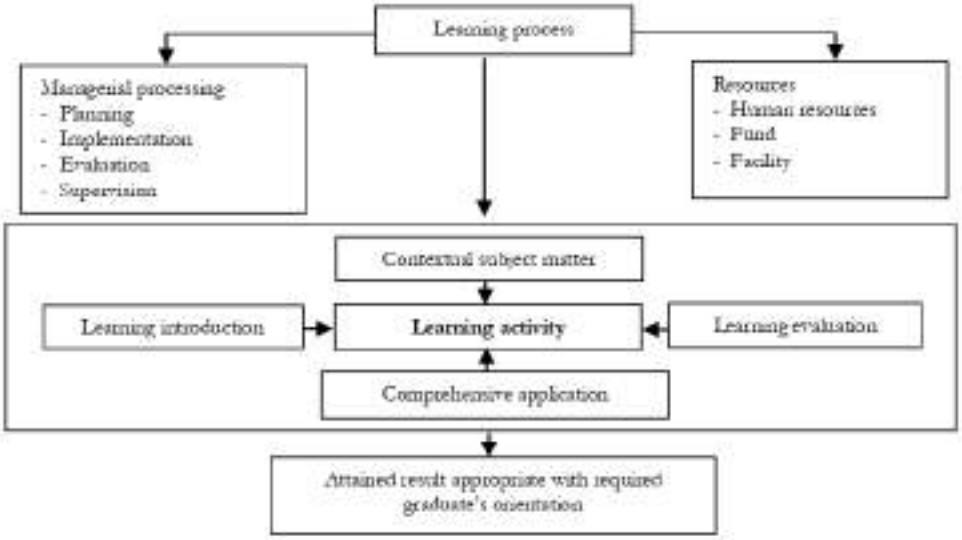

Figure 2. The Conceptual Model of Ideal Learning at *Pesantren*.

CONCLUSION

Conceptual models of ideal learning proposed to increase the quality of education at *pesantren*. This can be done by identifying the class, developing more concrete learning goal oriented to the competence of graduate's future, setting clear program with subject matter adjusted with students' need, developing rational pattern of thought in Islam by teaching philosophy. The educational process which promotes collective, pragmatic and compromising rational pattern will be better if the learning approach is applied in a dynamically and flexibly manner. It can be implemented by using recent popular learning approach namely active, innovative, creative, effective, pleasant, gratifying, and substantive learning, expanding function of *pesantren* as three-centered-education (family, school and society). Periodic and continuous evaluation can improve students' mastery of religious knowledge as well as science and technology also students' skill. To support its success, some factors should be met. They are human resource with good and sufficient competence, sufficient learning operational fund, good facility and good managerial processing covering planning, implementation, evaluation and supervising. In addition to this, the researcher provides some recommendations to the *Pesantren* Kebon Jambu al-Islami Babakan Ciwaringin, Buntet and Bendakerep Cirebon as follows: 1) it is required that those institutions develop learning process and combine *salafiyah* and *khalafiyah* model of learning implemented on their educational system so that students can be empowered to have skills on technology that is socially and economically useful; 2) it is needed that those institutions maintain an open mind and modify their educational system as learning method that can be received by all elements of the society so that educational system at those *pesantrens* becomes extremely inclusive; 3) it is necessary that those institutions carry out empowering, establishing and developing educators' knowledge by financing their study from bachelor degree, master degree up to doctoral degree; 4) it is requisite that those institutions develop their economy by establishing business sectors being able to increase ustadzs' prosperity so that it can make opportunity to develop organization especially developing educational institution to fulfill the demand of society either religious education or Islamic secular education.

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