

Study and Research Methods

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Introduction

- Success (a wish of every student)
- Failure (sometimes an unwanted reality): less than 10/20
- Failure in course implies repetition (time and financial implication)
- Failure in average (general and major): less than 12/20
- Consecutive probation: dismissal
- Calculation of the average: use the formula of mean
- What factors behind all these?
- What can be done to prevent such unwanted situations?
- Study and research... our intention

Example of Transcript

Course	Number of credits	Grades	
Micro computer applications	3	10	30
Applied Maths	3	7	21
Intro to Bible	2	14	28
Study and research methods	2	17	34
Etc...
Total	10		113

What is learning?

- Behaviorism...
- Cognitive Constructivism and Radical Constructivism...
- Socio Constructionism...

Behaviorism to understand learning

- Learning is a relatively permanent change in behaviour brought about by experience (Feldman, 2011).
- According to Ivan Pavlov (1927), *Classical conditioning* is a type of learning in which a neutral stimulus comes to bring about a response after it is paired with a stimulus that naturally brings about that response.
- According to Burrhus Frederic Skinner, *Operant conditioning* is learning in which a voluntary response is strengthened or weakened, depending on its favourable or unfavourable consequences (Skinner, 1957).
- Reinforcement (primary reinforcer vs secondary reinforcer)
- Positive punishment vs negative punishment

Cognitive Constructivism and Radical Constructivism

- According to Jean Piaget (1964), learning is the acquisition of specialized abilities for thinking about a variety of things.
- Learning is the acquisition of knowledge through the process of building accurate internal models or representations that reflect external structures that exist in the real world.
- Schema
- Accomodation
- Assimilation
- Equilibration
- Stages of cognitive development: sensori motor, preoperational, concrete operations, formal operations

Socio Constructionism

- Learning is the acquisition of knowledge through social interaction and language usage, thus is a shared experience and not individual experience, and happens in socio-cultural context in specific time and place (Vygotsky, 1978).
- Learning practices like tutoring, study groups are rooted in this theory of learning.

Factors influencing learning

- Physiological Factors
- Psychological Factors

Physiological factors

- All night cramming sessions, skipped meals, and skipped physical exercise can actually reduce the brain capacity for high performance for student and worker.
- Lim (2018) need adequate sleep, balanced diet that includes protein, fat, complex carbohydrates, and fiber improve learning and academic performance.
- Students should reduce fast food like soft drinks and processed food to increase their academic performance (Burrows, Burrows, Blanco, Reyes, & Gahagan, 2016).
- Regular physical exercises for effective learning and improve the academic performance.

Psychological factors of learning and performance, Also called personal characteristics

- Individuality
- Self-confidence
- Desire
- Will
- Motivation
- Conscience
- Perception
- Thought
- Communication
- Memory
- Imagination
- Humility
- Emotional engagement
- Listening
- Effective study skills
- Active and passive learning
- POWER learning

Individuality

- One's growth will be along lines as distinctly unique as his/her own individuality
- Physical self...
- Social self...
- Personal self...
- The self-concept is connected with the self-fulfilling prophecy
- This is a phenomenon that occurs when individuals hold a belief or expectation that affects their behaviours, thereby increasing the likelihood that those beliefs or expectations will come true.
- To get a clear understanding of one's self concept each individual needs to examine the roles he/she plays; identify his/her strength and weaknesses; construct his/her own definition of who he/she is and accept his/her entire self-concept.

Self confidence

- Self–confidence is the assurance in personal judgement, ability and power.
- Strengths, assets, opportunities, weaknesses, threats (SWOT)
- In fact, once you have known your weaknesses, you can direct particular aids to growth toward making weaknesses to strengths.
- Say, “My accounting tests this year are an improvement over what I did last year.”

Desire

- ⇒ A student's desire is to improve his/her grades and succeed in school.
- ⇒ Each student should desire the right:
 - to grow and live a significant life;
 - to train his/her intellect,
 - to develop his/her character
 - to acquire the ability to solve the new problems which shall confront him/her by applying the accumulated wisdom provided by education.

Will

- Willingness is the quality or state of being prepared to do something; readiness
- Feeling, thinking and willing are often designated as the three basic functions of the mind. Something is felt to be worthwhile, good to do or have; it is thought about, evaluated, measured mentally for advantage or importance; but unless **the mind wills** to accomplish it there remains only a dream or an intention unfulfilled.
- Will, Work and Wait ... WWW

Motivation

- Primary motivation: this situation in which an individual is forced to act because he loves the activity itself.
- Secondary motivation: a situation in which an individual is forced to act to achieve this activity in order to get something that has an arbitrary relationship with it (the activity)
- Are you studying for good jobs and money or because of love you have for this subject?

Conscience

- The moral sense of right and wrong
- A constant and hardworking companion, which helps you through the tangled web of conflicting desires, inclinations, and advice from many sources, to a set of standards, grown from your own personal convictions.
- Lawrence Kohlberg developed the ***moral development theory***
- people go through a *three levels sequence of moral reasoning* in a fixed order including:
 - Level 1. ***Pre-conventional morality*** where the concrete interests of the individual are considered in terms of rewards and punishments (Feldman, 2011).
 - Level 2. ***Conventional morality*** where people approach moral problems as members of the society. They are interested in pleasing others by acting as good members of the society (Feldman, 2011).
 - Level 3. ***Post-conventional morality*** where people use moral principles which are seen as broader than those of any particular society to live up to your own conscience and standards of honesty ((Feldman, 2011; Kohlbertge & Ryncarz, 1990).

Perception

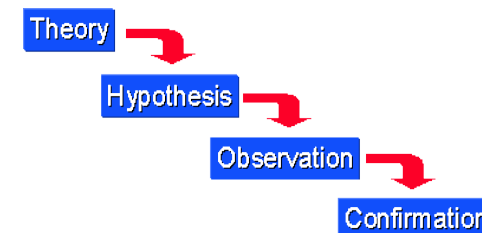
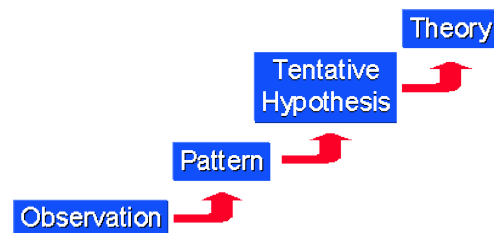
- the organization, identification and interpretation of sensory information in order to represent, understand and react on a given stimulus.
- A gift serving mind and senses
- The ability that makes meaningful experiences possible
- Beyond mere awareness of one's surroundings.
- Therefore, as much as perception is a gift that acquaints you with the world around you, be sure you are seeing when you look.

Thought

- Thinking is the manipulation of mental representation of information.
- Thinking underlies creativity, reasoning and decision making.
- The ability to generate unusual and appropriate response to a problem or a question using a divergent thinking or have the ability to produce response that are based primarily on knowledge and logic (common sense) using a convergent thinking (Feldman, 2011).
- Human vs animal
- Ability to chose from many perceptions
- *“Only the individual can think, and thereby create new values for society –nay, even set up new moral standards to which the life of the community conforms. Without creative, independently thinking and judging personalities the upward development of society is unthinkable as development of the individual personality without the nourishing soil of the community (Einstein, 1935, p.9).”*

Thought: inductive vs Deductive reasoning

Inductive Reasoning	Deductive Reasoning
<p>Definition: The process of reasoning that a general principle is true because the special cases you've seen are true.</p> <p>Characteristics:</p> <ul style="list-style-type: none">• It is NOT logically valid.• You begin with something specific and make a general statement.• It uses a series of observations to come to a conclusion.• Inferences are often used when reasoning this way. <p>Examples:</p>	<p>Definition: The process of demonstrating that if certain statements are accepted as true, then other statements can be shown to follow from them.</p> <p>Characteristics:</p> <ul style="list-style-type: none">• It is a logically valid explanation.• Most often used by scientists• It begins with a general statement and concludes something specific. <p>Examples:</p>
<p>How to build a theory using inductive reasoning?- qualitative approach</p>	<p>How to verify a theory using deductive reasoning?- quantitative approach</p>



Communication

- Sender to receiver and feedback
- Consider barriers too
- The community come from the same root word, and without the ability to communicate the community would not be possible.
- Through the gift of communication the person will receive his/her education, and the extent to which he/she develops the ability to communicate with others will help determine success or failure of his/her life.

Memory

- The memory is the faculty of the mind by which the information is **encoded** (recorded), **stored** (retained for the memory consolidation) and **decoded** (retrieved by recalling the information).
- Learning will make no sense if it is not retained by the person.
- Memory establishes links across diverse experiences.
- It is needed in developing social relationships, mastering cognitive competencies (mental capacities) and solving various problems.

Memory vs Tape recorder

- Memory appears like a tape recorder which records a song or music and plays whenever we demand.
- Our memory system does perform this but it is more dynamic and versatile than a tape recorder.
- But human memory differs from a tape recorder in many important ways. For instance, we remember not only verbal material but visual experiences, tactile impressions, feelings of pain and joy, motor skills, events, activities and so on.
- Second, retrieval of information can be exactly in the same way or in a different form.

Memory vs Tape recorder

- Third, the reception of new information depends a lot on what information we already have. Fourth, we neither receive nor retain all the information presented to us because there is great deal of selectivity in receiving the information. Fifth, all tape recorders have some limitation on recording but human memory can retain extremely large amounts of information.
- Finally, our memory system is an active system. It works on the information received. It may integrate, add, modify, omit or reorganize the information. It is not passive like a tape recorder which reproduces the information in its original form.

Factors affecting memory

- Conditions of learning, for example all the other factors like motivation, organization of the material, etc
- Emotional factors, for example repression
- Other factors?

Imagination

- The power of reproducing images stored in the memory under the suggestion of associated images (reproductive imagination) or the power of recombining former experiences in the creation of the new images directed at a specific goal or aiding in the solution of the problems (creative imagination)
- We distinguish **reproductive imagination** also known as imaginative memory which reproduces images already seen from **creative imagination** which uses images already acquired, it modifies, combines, and creates new ones.
- The *importance of imagination in learning situation* is to stimulate critical thinking skills, problem solving skills, creativity and innovation skills in learning situation.

Humility

- Humility will make the most single significant contribution to a student's education and growth, for it is the gift that makes him/her teachable
- It is good to know that the people who learn and grow are those who are ready to listen, who are not afraid to ask questions, who are alert to new ways of doing things, and who accept suggestions for improvement with enthusiasm.
- Use the gift of humility to make you teachable

Emotional engagement

- Is comprised of positive affective attitudes and interest of students in learning and assessment.
- This means that negative thoughts include depression, anger, fear, shame, jealousy, ***cognitive distortion*** characterized by attitude and behaviour of *magnification* of things that are not important, *minimization* of significant things, and ***emotional reasoning*** characterized with underestimation and overgeneralization of one's ability.
- The ***cognitive flexibility*** taken as learning on his or her mistakes and make a self-assessment or reappraisal is part of positive emotion.
- It is clear also that being honest, true, just, virtue, forgiveness, mind control, and a sound mind in the other hand (Hoy, Miskel, & Tarter, 2013).

Listening

- Listening is to give one's attention to secure cognitive, affective and behavioural processes.
- The following are active listening steps to improve concentration:
 1. *Maintain eye contact.* This shows how reliable warm, sociable, honest, confident and active the receiver is.
 2. *Don't interrupt.* When the speaker is talking, please let the message be conveyed to the audience. This is the sign of the mutual respect for effective communication. In the listening process, **attention** is an important factor which determines material to select and learn.
 3. *Ask question for clarification.* Questions may be open-ended, close-ended multiple questions, reflective questions,...
 4. *Repeat back what the speaker is saying in your own words.* Listen for total meaning of the message including contents and underlying attitude and feeling.

Global learning, partial learning and progressive partial learning

- Effective learning strategies includes using cognitive organizers, self-regulation including initiative, persistence, motivation and goal setting.
- In general, the learning process spread out with periods of rest seems to improve the outcome of learning while the learning which is concentrated does not result in good performance
- Learning the whole material in a single unity (global method)
- Learning some part of the material each time (partial method). According to the partial method, the material can be divided into several parts by the student who will then try to put them together after studying each part separately.
- The student can also use a cumulative learning method whereby he studies the first unit, then the second with the first, the third with the two first and so on. This method is known as the progressive partial method.

Active learning, passive learning and overlearning

- A student who plays an active role in the learning process generally gets better results than a passive student.
- This is illustrated in teaching when the student recites what he has learned. Indeed, actively discuss a new material of learning is more likely to favor the acquisition of this material than just reading it passively.
- Suggestions for getting involved in one's study

P.O.W.E.R. Learning

Prepare stands for setting goals

Organize stands for the physical and mental organization.

Work is related to the individual's motivation and the efforts made in order to get success.

Evaluate is an assessment of the match between a product or activity and the goals it was intended to meet.

Rethink involves critical thinking which is a process involving reanalysing, questioning, and challenging our underlying assumptions.

Some of its steps include the following: Reviewing how you have accomplished the task; questioning the outcome; identifying your underlying assumptions and challenging them; consider alternatives rejected earlier; consider what you would do if you had the opportunity to try things again and reconsider your initial goals(Feldman, 2009).

➤ Environmental factors

Social Environmental factors

- Academic environment
- The classroom climate and teacher interaction with students
- Management support and relationships
- Family and community involvement
- Peer Support
- Physical environment

Academic Environment

- *Academic environment* is composed of available services, systems and policies in Higher Learning Institution. According to Hoy, Miskel, & Tarter (2013), academic environment is characterized with a *culture of academic optimism*. This is composed with *cognitive* (collective efficacy), *affective* (faculty trust in parents or sponsors, teachers) and *behavioral* (academic emphasis-efficacy and trust) components.
- As a result, an *academic emphasis* which is the extent to which an Institution of Higher Education holds high expectation for its faculty staff, non teaching staff and students in one hand and the way the community supports those expectations in the other hand.
- The class should respect diversity in all its forms including culture for international students, gender responsive, disability accommodation without discrimination of any kind.

The classroom climate and teacher interaction with students

- At first, we must know that the school should be a family whose father is the teacher and children are students. Students must feel loved and love one another as members of the family.
- This family atmosphere, to a large extent, results from the behaviour of the teacher vis-à-vis his students. When students meet a dedicated teacher, a welcoming kindness, they are quickly attracted; they readily accept advice and reprimands. It is in this atmosphere that the student adapts easily and even with joy in school life.

Then students should develop cooperation by:

- Creating an importance to the group.
- Developing a mutual love and respect among themselves and with the teacher.
- Adapting to an established system of responsibilities
- Establishing their own goals and objectives with the teacher and classmates, etc
- Apart from academic support from instructors where a learner get guidance, peace of advices there

Management support and relationships

- *Leadership influence* from the top management of the higher education in shaping and clarifying the curriculum, mission statement and vision statement of the organization can affect learning and academic success.

Family and community involvement

- Parents, sponsors and community aspiration and expectation to students to enhance financial and moral support to students. This means that parents , sponsors, community at large with a positive attitude contribute positively to effective leaning and academic success in higher education

Peer support

- Peer influence has important role in improvement of academic achievement of student through mutual support, knowledge sharing and skills improvement and in mastery of learning. Peers are well placed to collaborate with their colleagues in academic life (Hoy et al, 2013).

- This may happen when students:
 - Compare or share notes with others after class in small groups.
 - Compare their highlighting and margin notes in groups.
 - Use library facilities by making
 - documentation in groups.
 - Observe the model from the instructor and identify the source of error.
 - Review the previous tests results in groups
 - Work hand in hand when a group assignment is given to us to work in groups.
 - Live in dormitories of the institution where I benefits intellectual gains of continuing learning with my classmates

Physical environment influencing learning and academic performance

- A student needs a suitable chair and a table or a desk where his *spinal code* is *vertical*. Supplies such as a pen, a pencil, a computer, calculator, a bag and a planner are needed for effective leaning and achieve academic success.
- Light, fresh air and ventilation, climate and global health.