Research 1 Reviewer

I. Introduction to Research

What is Research?

- Research is a **scientific investigation** which includes **collection, analysis** and **interpretation** of information with the *individual's hypothesis.*
- It is a process of **finding solution to an existing problem or phenomenon.**

What is the Importance of Research?

1. **Collect essential information**
   - Research provides the researcher with all **crucial information in his field of work or study** before he starts working on it.
2. **Create changes**
   - The outcome of research raises a **claim for change** and at times is also victorious in **producing changes**.
3. **Improving standard of living**
   - Only through research can **new inventions and discoveries** come into life.
4. **For a safer life**
   - Research has made developments in the **fields of health, food technology, and so on** which **improved the life expectancy and health conditions** of the human race and helped eradicate certain diseases.
5. **To know the truth**
   - Research **investigated and exposed many established facts.**
6. **Explore history**
   - Research enabled us **to learn our forefathers and our planet's history.**
7. **Understanding Arts**
   - Research helps us understand the **works of artists in literature, paintings, sculptures, and so on.**

Nature of Inquiry and Research

Both involve investigative work in which you **seek information** about something by examining the object of your search.

Inquiry - It refers to looking for information by **asking various questions** about the thing you are curious about.

Research - It refers to discovering truths by **investigating on your chosen topic scientifically.** Going through a **systematic way** of doing things wherein you are to begin from **simplest to the most complex patterns of thinking.**

Inquiry

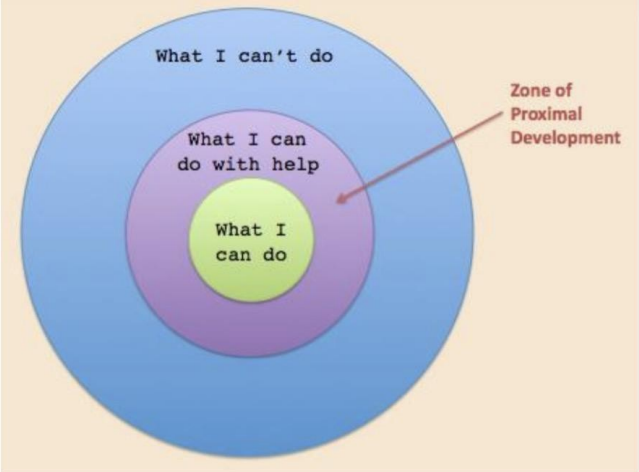
- It is a **learning process** that motivates you **to obtain knowledge or information.**
- It requires you to collect data, meaning, facts, and information about the object of your inquiry, and examine such data carefully.
- It makes you think in different ways.

Governing Principles / Foundation of Inquiry

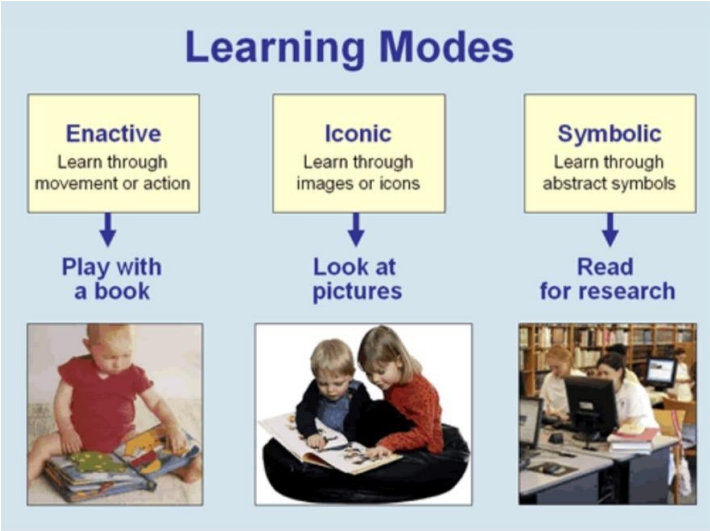
✓ **John Dewey's** *Theory of Connected Experiences for Exploratory and Reflective Thinking*

- Learning by experiencing

✓ **Lev Vygotsky's** *Zone of Proximal Development*



✓ **Jerome Bruner's** *Theory on Learner's Varied World Perceptions for their Own Interpretative Thinking of People and Things around Them*



Characteristics of Research

1. **Empirical**
   - Research is based on **direct experience or observation** by the researcher.
2. **Logical**
   - Research is based on **valid procedures and principles.**
3. **Cyclical**
   - Research **begins with a problem and ends with a problem.**
4. **Analytical**
   - Research uses **analytical procedures in collecting data**, whether historical, descriptive, experimental, or case study.
5. **Critical**
   - Research shows cautious and exact judgment.
6. **Methodical**
   - Research is performed in a **methodical manner** without prejudice using **systematic method.**

7. **Replicability**

- The research design and procedures are **replicated or repeated** to enable the researcher to arrive at valid and conclusive results.

Ethics of Research

Ethics - norms for conduct that distinguish between acceptable and unacceptable behavior.

Honesty

- **Strive for honesty in all scientific communications.** Honestly report data, results, methods, and procedures, and publication status. DO NOT fabricate, falsify, or misinterpret data. DO NOT deceive colleagues, research sponsors, or the public.

Objectivity

- Strive to **avoid bias** in the data analysis, interpretation, and other aspects of research where objectivity is expected. Avoid self-deception and disclose personal or financial interests.

Integrity

- **Keep your promises and agreements;** act with sincerity; strive for consistency of thought and action.

Carefulness

- Avoid **careless errors and negligence;** carefully and critically examine your own work and the work of your peers. Keep **good records of research activities,** such as data collection, research design, etc.

Openness

- Share data, results, ideas, tools, and resources. **Be open to criticism and new ideas.**

Respect for Intellectual Property

- **Honor copyrights, and other forms of intellectual property.** DO NOT use unpublished data, methods, or results without permission. **Never plagiarize.**

Confidentiality

- **Protect confidential communications,** such as papers or grants submitted for publication, personnel records, trade secrets, and patient records.

Responsible Publication

- Publish in order to advance research and scholarship, not to advance just your own career. **Avoid wasteful publication.**

Responsible Mentoring

- **Help educate, mentor, and advise students.** Promote their welfare and allow them to make their own decisions.

Non-Discrimination

- **Avoid discrimination** against colleagues or students on the basis of sex, race, ethnicity, and others.

Legality

- Know and obey **relevant laws and institutional and governmental policies.**

Animal Care

- **Show proper respect and care for animals** when using them in research. DO NOT conduct unnecessary or poorly designed animal experiments.

Human Subjects Protection

- **Minimizes harms and risks to maximize benefits;** take special precautions with vulnerable populations.

Basic Types of Research

1. **Descriptive Research**
   - It includes **surveys and fact-finding inquiries.**
   - Its main purpose is the **description** of the stage of affairs as it exists at present.
   - The researcher **has no control over the variables.**
2. **Correlational Research**
   - It shows the **relationship or connectedness of two factors, circumstances or variables** that affect the research.
3. **Applied/Action Research**
   - It aims at **finding a solution for an immediate problem** in a society or organization.
4. **Qualitative research**
   - It requires **non-numerical data,** which means that the research uses **words** rather than numbers to express the results or the investigation about the people's thoughts, feelings, beliefs, and views regarding the object of the study.
5. **Quantitative research**
   - It involves **measurement of data.**
   - It presents research findings referring to the **number of frequency** of something in numerical form.

Primary and Secondary Data

✓ **Primary data** are obtained through **direct observation or contact with people or objects.**
   - Interviews, surveys, diaries/journals

✓ **Secondary data** have already been **written about or reported on** and are available for reading purposes.
   - Academic sources (published journal articles, research papers, books, etc), public records, media

II. Quantitative vs. Qualitative Research

Qualitative Research	Quantitative Research
Methods include **focus group, interview,** and **review of documents** for *types of themes*	Methods include **structured surveys** and **review of records or documents** for *numerical information*
Smaller sample size	**Larger** sample size
More subjective: describes a problem or condition from the **point of view of those experiencing it**	**More objective:** provides **observed effects** (interpreted by researchers) of a program on a problem or condition.
Text-based	**Number**-based

Time expenditure lighter on the *planning phase* and heavier during the *analysis phase.*	**Time expenditure** heavier on the *planning phase* and lighter during the *analysis phase.*

Kinds of Qualitative Research

1. **Ethnography**
   - You **immerse yourself** in the **target participants' environment** to **understand** the goals, cultures, challenges, motivations, and themes that emerge.
   - Rather than relying on interviews or surveys, you **experience the environment first hand,** and sometimes as a ***"participant-observer."***
2. **Narrative**
   - About **collecting and telling a story** or stories (in detail). Researchers write narratives about ***experiences of individuals, describe a life experience, and discuss the meaning of the experience with the individual.***
3. **Phenomenological**
   - You use a combination of methods, such as **conducting interviews, reading documents, watching videos,** or **visiting places and events.** To understand the meaning, participants place on whatever's being examined. You rely on the **participants' own perspectives** to **provide insight into their motivations.**
4. **Grounded Theory**
   - Whereas a phenomenological study looks to describe the essence of an activity or event, ***grounded theory*** looks to **provide an explanation or theory behind the events**. You use *primarily interviews and existing documents* to **build a theory based on the data.**
5. **Case Study**
   - Rooted in several disciplines, including science, education, medicine, and law.
   - It is used when the researcher wants to focus on **how and why, the behavior is to be observed**, not manipulated, to **further understand a given phenomenon**, and if the boundaries between the context and phenomena are not clear.
   - Multiple methods can be used to gather data, including ***interviews, observation, and historical documentation.***

Strengths and Weaknesses of Qualitative Research

Strengths:

- Provides understanding and description of **people's personal experiences** of phenomena
- Enables data to be collected in **natural setting**
- Data collection is usually **cost-efficient**

Weaknesses:

- Data gathering is often **time-consuming**
- **Analysis of data takes longer time** than that of quantitative analysis
- **Interpretation of results is usually biased** because it is influenced by the researcher's perspective