

**CERTIFICATE ECDE RESEARCH NOTES**

**INTRODUCTION TO RESEARCH**

Specific objectives

By the end of the unit the learner should be able to;

1. Define terms related to research.
2. Explain the importance of research
3. Identify some areas of research.
4. Describe simple methods of collecting data
5. Classify simple ways of analyzing data
6. Discuss the basic ways of reporting research information
7. Explain use of research data in the improvement of ECDE services.
8. Undertake research project in ECDE

## DEFINITION OF TERMS

### *a) Research*

- This is systematic process of collecting and analyzing information to increase understanding of a phenomenon(a fact or situation that is observed to exist)
- It can also be defined as a process through which we attempt to resolve a problem, answer questions or increase understanding of a phenomenon with the support of data.

### Characteristics of a research

- It begins with a question or a problem.
- It is guided by specific research objectives, questions or hypothesis.
- It follows a specific plan of action or procedure.
- It involves collection and interpretation of data in order to solve a problem.

### *b) Data*

- This is information that has been collected, observed, generated or created to validate original research findings example table of numbers.
- Relevant information pertaining aspects of a study for example kind of nutrition children get, measuring height and weight of children to determine growth.

### *c) Analysis*

- This is the computation of measures and searching of patterns of relationships that exist among data for various variables that are being studied.

### *d) Research problem.*

- These are questions calling for an answer or a response.
- These are specific statements that clearly convey the purpose of research study.
- It can also refer to statements which focus on a phenomenon that a researcher desires to describe, predict, control or explain.

### *e) Hypothesis*

- These is conclusion of a given fact awaiting approval
- f) **Population**
- These are objects, subjects, events, animals having common observable characteristics.
- g) **Target population**-this the population in which the result of the study will be generalized or inferred to. Members of a population may be large, wide or scattered in one geographical area.
- h) **Sample**- is the small group obtained from the target population of the study.
- i) **Sampling**-is the process of selecting a number of individual for a study in research.

### **IMPORTANCE OF RESEARCH**

The following are some of the candid reasons why research is important in a community, school or a nation.

- a) *Research enables acquiring and generating of new knowledge especially on emerging challenges and issues.*
- b) *It is a basis for funding projects on findings of research done.*
- c) *Enhances curiosity and interest i.e man uses research to get crucial answers to crucial questions in mind.*
- d) *Provides solution to the daily emerging issues and challenges through findings and recommendations from the research.*
- e) *Used to demonstrate expertise and competency of scholars in areas of specialization.*
- f) *It helps in gathering information using scientific method*

Importance of research in Early childhood.

- a) *Improving teaching and learning- research provides new knowledge in matters of teaching and learning. It explores new approaches and technology in teaching and learning process.*
- b) *Policy development- Research findings usually result in recommendation for various stakeholders including policy makers at various levels.*
- c) *It provides knowledge that helps in understanding children. Issues such as how children learn, think, grow are best understood through research.*

d) *Enables us predict children's behavior. Observation of children under specific conditions can help us predict how they are likely to behave in various situations. Example children who have pleasant experiences with books are likely to become better readers.*

Question;

- a) State the importance of research to the community.
- b) What is the relevance of research in early childhood?

### **AREAS OF RESEARCH IN ECDE**

- a) *Child growth and development- The following are some of the aspects researched on; mental, language, social, emotional, psychomotor, moral and spiritual developments.*
- b) *Child rearing practices- research on child rearing practices generate the appropriate skills and describe the attributes. These attributes are very significant in molding the child to grow and develop holistically. Research may be carried out in children homes and orphanages, rehabilitation centres, rescue centres e.t.c*
- c) *Children learning- it is very important to carry out research on how children acquire knowledge. This will help the teacher and ECDE care givers to put in place all necessary strategies for interventions in their respective programmes.  
The methodology used may be child centered, teacher centered or participatory approach; the ways of teaching may be thematic, Montessori and play way.*
- d) *Transition in ECDE- research in this area can involve; transition of children from home, ECDE centers to Primary school, one activity area to another.*
- e) *Community involvement- it is a potential area in research, common structure and participation in ECDE is looked at. Activities done here involve; establishments of the school, initiating feeding programmes, funding the school, provision of teaching and learning materials, facilitating payment of teachers.*

f) *Health, nutrition and care- these are very crucial areas of learning that promote learning at ECDE centers. Research under this focuses on; feeding programmes initiated in schools, effect of immunization, facilitating the health of the child during learning, various types of care administrators to children at different ages.*

## **DATA COLLECTION METHODS**

The following instruments can be used in data collection;

- Questionnaires.
- Interview schedules
- Observation checklist.
- Rating scales
- Focus group discussion.
- Documentary analysis.

i) **Questionnaires** - *This is a series of questions asked to individuals to obtain statistically useful information about a given topic.*

*Advantages of a questionnaire*

- a) *It gives respondents adequate time to fill the questionnaire.*
- b) *Identity of the respondents is not required.*
- c) *It is relatively cheap.*
- d) *It covers larger geographical area.*
- e) *It reduces bias or errors that may occur with other methods.*

*Disadvantages*

- a) *Useful for literate respondents.*
- b) *It takes a lot of time(time consuming)*
- c) *It does not give respondents room for additional information.*
- d) *Some respondents might fail to attempt all the questions.*
- e) *It has low response rate.*
- f) *Researcher cannot*

- ii) **Interview schedules**- An interview is a technique that is primarily used to gain understanding of people's attitudes, references or behavior and the underlying reasons and motivations for this. Interviews can be undertaken one on one personal basis or in groups. An interview schedule is a list of questions in their sequence of presentations.

*Advantages*

- a) Information collected is real and factual.
- b) High likeliness of response to all questions
- c) Accurate data is obtained.

*Disadvantages*

- a) It is expensive
- b) The interviewer requires high level of skills
- c) It involves small samples since the interviewer needs a small number that s/he can manage well.

- iii) **Observation checklist**- This involves recording people's behavior, other aspects of objects and events in a systematic way. An observation checklist will be used incase what is to be observed is pre-deteremined.

The frequency of a behavior, objects or events may be possible to record during observation. The objective of the study will determine the concept of the checklist.

*Advantages of observation*

- a) It allows researchers to observe happenings as they occur in natural setting.
- b) Through observation the researcher can proof verbal reports by comparing them with critical behavior.
- c) The researcher is able to observe the impact of the environment on the subject.

*Disadvantages*

- a) Poor generalization of results.
- b) It is impossible to observe a large sample.

- iv) **Focus Group Discussion (F.D.G)**-They are unstructured interviews with small group of people, who interact with each other and a focus group leader (researcher). They make use of group dynamics to stimulate discussion, insights and generate ideas on a given topic of the study.

They are used to investigate what people think, how they think and why they think in the way in a given subject. It is useful technique in exploring cultural values, beliefs and practices.

#### *Advantages of F.G.D*

- a) A lot of information can be gathered
- b) No room for clarifying issues

#### *Disadvantages of F.G.D*

- a) Consumes a lot of time
- b) Difficulty in data analysis.
- c) It requires skilled leader.

- v) **Documentary analysis**- In documentary analysis, data collection will involve use of previously collected materials from secondary and primary sources. Data that is already documented after research can be used to give information or generate information.

#### *Advantages of documentary analysis*

- a) Information is acquired within a short period of time.
- b) Organized and arranged information is acquired
- c) It is not time consuming.
- d) It is not expensive.

#### *Disadvantages of documentary analysis*

- a) The information can be shallowed.
- b) It is possible to get outdated information.

## **DATA ANALYSIS**

It is the study/ getting much information about the collected data from the field (raw data) in order to understand and determine the facts or getting conclusion of the research problem. Data analysis can be reported inform of quantitative or qualitative analysis.

**Quantitative data**

This is analysis that utilizes numeral data and may involve use of numbers, charts, table and statistical test. Raw data can be analysed and presented in various forms such as frequencies, percentages, tallies, charts, mode, mean, medium and range.

**Frequency distribution:** this is the organization of raw data in table. A frequency distribution table (F.D.T) is used to organize data for acquisition of data.

**Example**

Pupils in grade 4 gave out their ages in years as follows;8,8,9,8,8,9,9,9,10,8,9,8,10,10,9,8,10,11,11,8,9,10,9,9,11,9,9,9. Draw a frequency distribution table for the given data.

Age(years)	Tally marks	Number of learners(frequency)
8	### ///	8
9	### ### //	12
10	###	5
11	///	3
		28

**Note:**

- Data grouping should be in ascending order e.g. from above 8, 9, 10, 11.
- Tally- the use of tallies is an approach where occurrence of each unique value is determined by use of graphical count/ strokes, as shown above.

**Mode:** this is measurement that appears most in a particular data. The mode is established by examining a set of scores and identifying the score that occurs most frequently.

**Example**

The following are marks acquired by preschool children in language activities 3, 4, 5,6,6,6,7,9,10,12. The mode is 6 since its value occurs most frequently in a sample.

Note: organize data in ascending order before identifying the mode.

**Medium:** this is the average of a set of scores or measurements. It is most frequently used measure of central tendency. It is calculated by adding all the scores and dividing the result by the number of counts

### **Example**

A teacher gave a test to ten students and the scores were as follows 10,12,20,15,10,18,16,8,5,12. Find the medium of the data.

$$\begin{aligned} \text{Medium} &= \frac{(\text{sum of the data})}{(\text{number of data})} \\ &= \frac{(10+12+20+15+10+18+16+8+5+12)}{10} \\ &= \frac{126}{10} \\ &= 12.6 \end{aligned}$$

Range: this is an aggregate of individuals in one rank or degree. Consider the data 3,3,5,9,10,7,12.

Maximum value=12, Minimum Value=3

$$\begin{aligned} \text{Range} &= (\text{maximum value}-\text{minimum value}) \\ &= (12-3) \\ &= 9 \end{aligned}$$

## **DATA PRESENTATION**

### **Bar Graph**

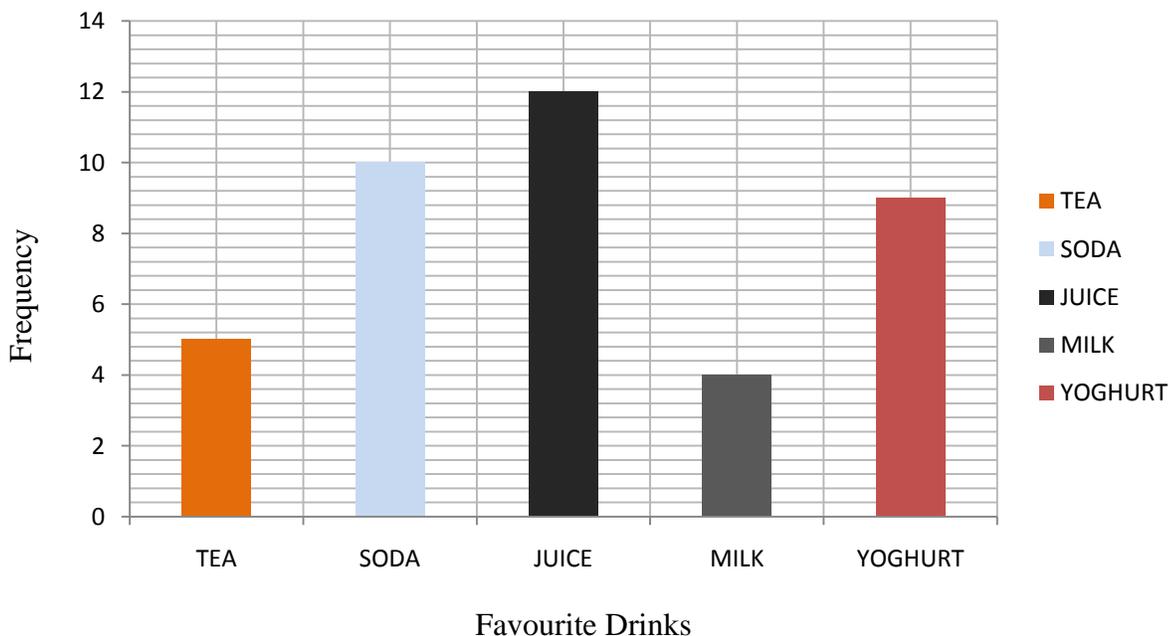
The table below shows the different drinks taken by different learners in ITTC academy use the information to draw Bar graph.

### **Steps for drawing a bar graph**

1. Choose a suitable scale for the axes; Horizontal axis: 1cm represents 1 drink, Vertical axis: 1cm represents 2 learners.
2. Draw the vertical axis (y-axis) and horizontal axis(x-axis).
3. Using the scales mark of vaules as in the table
4. Draw bars using the scale noting the height of the bar should be equal to the number of learners per drink.
5. Write the name of each bar, shade if necessary.
6. Write the title of the bar and label the axes.

Drink	Number of learners(frequency)
Tea	5
Soda	10
Juice	12
Milk	4
yorghut	9

### A BAR GRAPH SHOWING LEARNERS FAVOURITE DRINKS



#### Interpretation of the bar graph

- Which drink was the favourite among learners.-Juice
- Which drink was least favourite among the learners- Milk
- What total number of students drank milk and soda- $(10+4)=14$  learners.

### The pie chart

This is a circle divided into sectors. Each sector is proportional to the information it represents.

### Drawing a pie chart

Example 1

The table below shows how Nafula spent her free time at ITTC college.

Activity	Time In Hours
Reading	4
Helping in the library	3
Visiting friends	2
Sleeping	10
Other activities	5

Use the information in the table to draw a pie chart

Solution

- Add all the hours= $4+3+2+10+5=24$ hrs
- Express each activity as a fraction of 24hours
  - Reading= $\frac{4}{24}$ ,
  - helping in the library= $\frac{3}{24}$ ,
  - visiting friends= $\frac{2}{24}$ ,
  - Sleeping= $\frac{10}{24}$ ,
  - other activities= $\frac{5}{24}$
- 24 hours represents a complete circle, express time for each activity as part of a circle by multiplying each fraction by  $360^0$

$$\text{Reading} = \frac{4}{24} \times 360^0 = 60^0$$

$$\text{Helping in the library} = \frac{3}{24} \times 360^\circ = 45^\circ$$

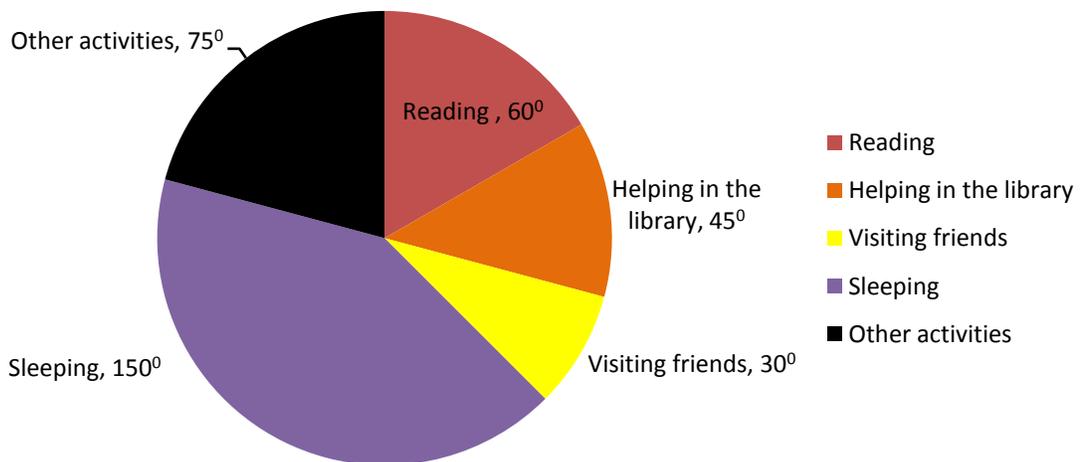
$$\text{Visiting friends} = \frac{2}{24} \times 360^\circ = 30^\circ$$

$$\text{Sleeping} = \frac{10}{24} \times 360^\circ = 150^\circ$$

$$\text{Other activities} = \frac{5}{24} \times 360^\circ = 75^\circ$$

- d) Using convenient radius draw a circle.
- e) Using a protractor mark out the sectors as calculated.
- f) Label the sectors and write title of the pie chart.

### Nafula Saturday activities



### Example 2

Margaret spent her January salary as follows; 25% on food, 35% on school fees, 20% on clothing and 20% on rent. Draw a pie chart to represent the above information.

### Solution

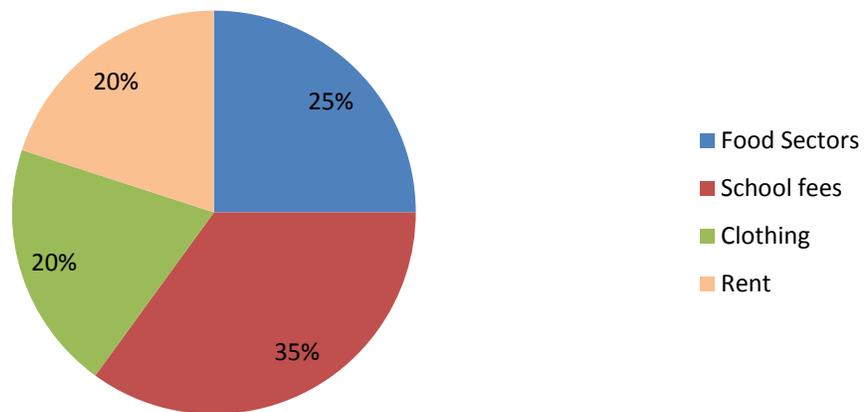
- a) Identify each sector as a degree

$$\text{Food sector} = \frac{25}{100} \times 360^\circ = 90^\circ$$

- School fees sector =  $\frac{35}{100} \times 360^\circ = 126^\circ$
- Clothing =  $\frac{20}{100} \times 360^\circ = 72^\circ$
- Rent =  $\frac{20}{100} \times 360^\circ = 72^\circ$

b) Draw a circle and measure to draw the different sectors

### A pie chart showing how margaret spent her January Salary



Line graph- is a way of summarizing how two variables vary depending on one another.

Example

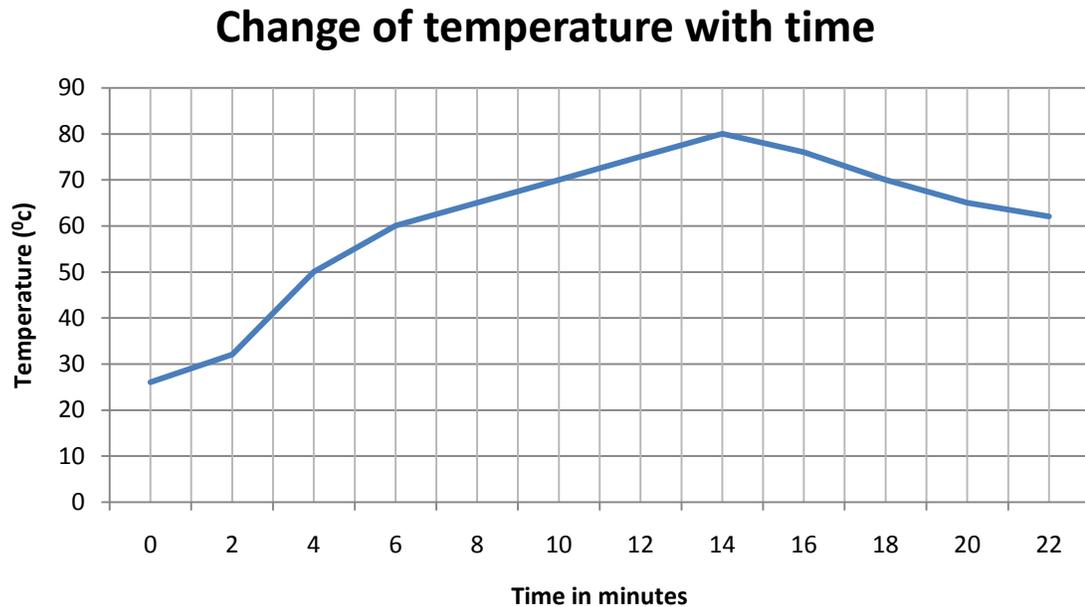
The table below shows the temperature at particular intervals. Use the information to draw a line graph.

Time(mins)	0	2	4	6	8	10	12	14	16	18	20	22
Temp ( $^\circ\text{c}$ )	26	32	50	60	65	70	75	80	76	70	65	62

Steps

- a) Determine suitable scale; Vertical scale: 1cm represents  $10^\circ\text{c}$ , Horizontal scale: 1cm represents 2 minutes.
- b) Using the scales draw and label the axes

- c) Plot points using corresponding values.
- d) Join all the points using straight to obtain line graph.
- e) Label the axes and write the title of the graph on top



### Interpretation

- a) After how many minutes was the temperature at its peak? 14 minutes
- b) What was the temperature after 8 minutes? 64<sup>0</sup>c.

### REPORTING RESEARCH INFORMATION

Dissemination of research findings is critical. The findings are for use by the community. Most research is funded using public money. The findings should be presented in simple and clear language devoid of technical terms;

- Presentation of bound and electronic copies to the sponsor and funding agency.
- Putting findings in a book form for general reading.
- Using newspapers serialization and reports on the findings.
- Presentation in journals, articles and magazine articles.
- Electronic publishing through internet, email alert services.

- Attendance to peer conferences and presentations of the research findings with the aim of disseminating the findings.
- Contacting other researchers personally with the hope of exposing the findings to them.
- Peer review of the work.
- Sending findings to the online library catalogues and other information related databases.
- Presentations of copies to policy and decision makers.

### USE OF RESEARCH DATA IN IMPROVING ECDE SERVICES

Information generated from the research findings can be used in many ways to improve ECDE services. This calls for a continuous research, monitoring and evaluation in ECDE. All research findings adds new information to the ECDE sectors and the data collected can be used to improve the following arears;

- a) Creating awareness- research findings can be used to sensitize community members, social workers, teachers, DICECE officers, policy makers , F.B.Os, administrators and N.G.Os. this will alert them on the needs and essential requirements to improve ECDE learning.
- b) E.C.D.E service intervention- this include various factors that affect different areas in ECDE which includes;
  - i) Nutrition- this will go a long way to improve children's health, survival growth and development.
  - ii) Education- research in education helps to improve methodologies, curriculum and syllabus development and also teaching and learning materials.
- c) Future planning- information gotten from research can be used for planning and decision making which is relevant for future use.
- d) Further research- motivates researchers to do more research on particular arears since simple research studies cannot tackle all issues.
- e) Sourcing for funds- data collected and research findings may be submitted to various authorities such as N.G.Os, Government ministries to solitice for funds that will help in improving various services provided in ECDE.

## **RESEARCH PROJECT IN ECDE**

**Research proposal-** This is the overview of the intended research describing the proposed presentation the researcher undergoes while conducting the study. A research proposal has 3 main chapters;

- i) Giving the background of the study
- ii) Literature review
- iii) Methodology.

There has been no agreed format for research proposal. This is because of different research projects for different organizations, institutions and disciplines. However there are some agreed components in all research proposals.

### **CHAPTER ONE: introduction**

It provides the basis for the study and has the following components:

- i) Introduction or study background/background information;*
  - Gives detailed background information to the study.
  - Introduces the reader to the foundations of the research topic and issues of the study (highlights specifically the historical development of the study issues and its relevance in current study)
  - Should highlight the sociological and educational implications of the study.
  - Should convince the reader on the need for research study
- ii) Statement of the problem;*
  - It is a statement of research gap that the study is addressing.
  - It is usually based on what sees as the issues that are important but which other researchers have not addressed.
  - It is explained in two or three paragraphs.
- iii) The purpose of the study;*
  - Explains what the research will achieve once completed.
  - The general statements indicate what will specifically be investigated

*iv) Objectives and research questions*

- Objectives provide specific aims of the study. They are closely related to research questions since research questions are derived from the objectives.

*v) Assumptions of the study;*

- A study assumption is a belief which is presumed to be true and is a necessary basis for the study.
- In case assumption is untrue the research will need to do adjustments to the assumption provided.

*vi) Scope and limitations;*

- Scope refers to extent of geographical, social and conceptual coverage in the study.
- Limitations are hindrances or anticipated constraints that determine the actual coverage or extent of the study e.g resources(time, funds).
- They should be well defined because they set the boundaries of the study.

*vii) Definition of terms;*

- Manipulates conventional terms to fit the study objectives.
- Meaning of a term should be directly related to the study.

## **CHAPTER TWO: literature review**

It is an existing literature on the topic under study. It shows what previous research says concerning the topic or issues under study. It requires extensive study to help the researcher identify the research gaps.

## **CHAPTER THREE: Methodology**

This chapter describes the research plan. It defines the basic methodological details to be used in the study. It outlines;

- Research design to be employed in the study e.g. survey method, case study.
- The location of the study and reason for the choice.
- Study population.

- Sampling techniques used e.g. random, stratified.
- Sample and sampling procedures.
- Research instruments used
- Data collection procedures.

#### **CHAPTER FOUR: data analysis and presentation.**

This is where data is interpreted, analysed and synthesized for other readers to understand and comprehend. Presentation of the final analysed and interpreted work is also discussed at this point of the research.

#### **CHAPTER FIVE: Summary, conclusions and recommendations**

Main features of the research are summarized and conclusions made according to the findings. The researcher may also give a personal opinion at this point. A researcher will always recommend to those coming after them in areas for future study or action plans.

Research Report- it provides information about the problem investigated, method of investigation and the findings, conclusions and recommendations. Reported speech is used and verbs are in the past tense.

#### **Components of a research report**

1. *Cover page; gives the title of the research proposal, students name, institution of study, supervisors name and date of presenting the research.*
2. *Dedication-it is made to people the researcher consider dear to them for certain reasons.*
3. *Declaration of research as students own work, also contains supervisors name.*
4. *Acknowledgement page, where researcher acknowledges the participation and contribution of others towards the success of the research.*
5. *Abstract or executive summary- gives summary of the research work.*
6. *Table of contents- it is a list of guides to show where specific information can be found in the research paper.*
7. *List of abbreviations and acronyms- are used when words are repeated in the study.*

8. *Introduction*

9. *Literature review*

10. *Methodology*

11. *Results and discussions (findings) summary, conclusions and recommendations.*

12. *References & Bibliography- reference gives credit of materials used for the research. The following is the acceptable way of writing a reference; name of the author, year of publication, title of the material, book, journal., place of publication, publisher. Bibliography on the other end guides the readers of other similar works that may have informed the work. They have not been cited but can enrich the proposal if read.*

13. *Appendices- contains material that is too detailed to include in the research report example letter of consent, instruments of data collection, budget e.t.c*

### **Types of report**

- a) Academic reports- these are completed academic reports such as dissertations, thesis, practicum and attachment reports. They are written by students in post secondary institutions e.g colleges
- b) Technical reports- are associated with community projects and are dictated by the uses and audience being presented to. Highly scientific reports are presented to scientists who have knowledge and expertise to understand information contained therein.

### **Importance of a research report**

- i) Highlights current trends in research
- ii) Enhances report writing skills
- iii) It is a way of documenting and archiving the findings obtained.
- iv) Important reference points in future discussions, policy formulations and studies
- v) To identify underlying problems.
- vi) Provides recommendations that may be used by policy makers, educationist and other stake holders.

## **ETHICAL CONSIDERATION IN RESEARCH**

Research ethical codes- define the different areas of responsibilities and expectations for the various groups involved. Ethical considerations protect the subjects against unprofessional conduct. The major ethical considerations in research include;

- a) Plagiarism-use of other peoples works without their consent or permission.
- b) Use of human beings- using human subjects in research without their knowledge. They can also manipulate researchers to part with money for them to continue with research.
- c) Confidentiality- the researcher is expected not to reveal certain information or identify subjects as requested by respondent.
- d) Voluntary participation and need for informed consent- the participants in any research should participate voluntarily with no coercion or persuasion. They should also not participate because of promised monetary gains.
- e) Permission to interview children- any researcher who desires to include children below the accepted consent age is expected to seek permission from the government, parents, teachers, doctors, since the law still takes them to be below consent age.
- f) Risk to human participants- researcher should consider risks involved in their research and disclose them to the people who are potentially to be studied.

## **QUESTIONS AND ANSWERS**

1. *Give reasons for monitoring and evaluation in research*
  - *To determine if the set goals and objectives are still on track.*
  - *Ensures the project operations are done in an objective way.*
  - *Ensures project control through regular supervision.*
  - *It is an effective way of making sure that the project complies with the required standards as specified by professional bodies.*
  - *Ensures proper implementation of the curriculum and the redress of any difficulties encountered in the process.*

- *The feedback obtained act as evidence and a basis for future project supervision.*
2. *State the main data collection methods in monitoring and evaluation.*
- *Survey*
  - *Case studies.*
  - *Observation.*
  - *Focus Group Discussion (FGD).*
  - *Interviews*
  - *Questionnaires*
3. *Use of monitoring and evaluation in research.*
- *The data is used to identify what ails the project.*
  - *Data collected can also be used to reduce loss of public and donor funds and to avoid fraud.*
  - *Making of informed decisions and policies for the good of the project.*
  - *Avoids loss of institutional records.*
  - *The data is used to identify the best management practices, which can support quality assurance and control.*
  - *The findings provide a knowledge base for the organization*
4. *Give ways of presenting research data.*
- a) *Tables- tabulation is a way of summarizing and displaying data. Tables are an orderly arrangement of data in rows and columns.*
  - b) *Graphs- it is a way of presenting information visually in order to show the relationship between variables. They include bar graphs (bar charts), circle graphs (pie charts) and line graphs.*
5. *Differentiate between research design and research methodology.*
- a) *Research design- it is a plan that guides the researcher in making decisions concerning when and how often to collect data, what data to gather, and from whom and where.*
  - b) *Research methodology- it deals with how the research is to be carried out.*
6. *Briefly explain the different types of research;*
- a) *Experiment research- it refers to the research world, which is seen, heard, touched, tasted, smelt and felt. It involves an experiment setting where variables under study are isolated in the laboratory.*

- b) *Basic research- it is a kind of research that has no immediate application or use at the time of conducting research, its findings may be used in the near future.*
  - c) *Action research- it is a type of research that is action oriented, it is conducted with the aim of making improvements.*
  - d) *Applied research- it is research whose findings have direct applications to the concerned people and their problems. It is designed to help solve particular existing problems rather than to acquire knowledge for knowledge sake.*
7. *List the criteria used to identify research topics and studies in ECDE.*
- a) *Teaching experience of a teacher and other educationists since they encounter issues pertaining to learning, parent involvement that require investigation.*
  - b) *Researcher's interest and expertise is very important in research.*
  - c) *Previous relevant research literature which may help identify gaps and weaknesses that have not been easily identify.*
  - d) *Emerging issues in ECDE which create gaps in knowledge that require investigation.*
  - e) *Verification of previously undertaken research.*
8. *State two benefits of filling in knowledge gaps in research(2017)*
9. *Give four considerations that an ECDE teacher trainee should observe to ensure confidentiality when undertaking research.(2017)*
10. *State four ways in which further research would improve delivery of services in ECDE.(2017)*
- *Research findings used to address specific issues in ECDE.*
  - *Verification of facts that may already be in existence*
  - *Help in comparing findings of different studies in order to make logical conclusion*
  - *Facilitates in getting indepth information on the problem being investigated.*
  - *Contributes knowledge to the scholarly world/ world of academia.*
11. *Define data as used in research- this refers to unorganized information such as alphabet, numbers, symbols that the researcher collects to represent ideas from which conclusions are inferred.*

12. Give the advantages of using frequency distribution tables for data presentation in research

- Easy to interpret since scores are arranged in descending order.
- Facilitates the summation of items/total number of respondents.
- Helps to determine easily how many times a certain score occurs.
- Facilitates detection of errors and omissions.
- Simple to create/ understand / present.

13. Highlight the benefits to a trainee in using observation method when collecting data in ECDE centre.

- It is direct method of collecting data
- Data collected is accurate and reliable
- It decreases dependency on respondents.
- Helps the teacher to capture non-verbal communication.
- It can be continuous and data can be collected for a long period of time.
- It is less demanding in nature.
- Through observation one can identify other problems.

14. Briefly give the considerations that an ECDE teacher trainee should make when undertaking preparations for data collection for research.

- The researcher should acquire authorization from relevant bodies allowing him/her to collect data
- The respondent should be fully informed about what is expected from them and given freedom to choose either to participate or not
- The researcher should treat the information received from respondents with utmost confidentiality.
- In case the responses are anxiety provoking the respondents has a right to be debriefed.
- The researcher should be honest and often with respondents and other researchers.
- The researcher should ensure that subjects are protected both psychologically and physically.

15. Identify ways in which research data would be useful in ECDE.

- *Helps to identify areas related to the research topics that need improvement/ further evaluation.*
- *Helps to highlight situations that needs to be addressed*
- *One is able to get adequate information for future preparation*
- *Highlights areas that need to be researched.*
- *It is a reliable method of assessing responsiveness and effectiveness of the study.*
- *Can be used for writing proposals or grants.*
- *Helps in identifying existing challenges and solutions sought for effective service delivery.*

16. *Give the qualities of an effective questionnaire*

- *Should be clear to avoid misunderstanding*
- *Questions should be focused /direct to convey one thought at a time.*
- *Logical flow of questions.*
- *Questions should have specific purpose related to the research.*
- *Must be objective/ provide intended result.*

17. *Give reasons why a researcher would make use of secondary data in study.*

- *Provides a basis for understanding the study*
- *Helps to identify gaps/ any additional information.*
- *Helps to build on the existing knowledge and support existing knowledge*
- *Gives roon for comparison given the numerous sources of data*
- *It is economical as it saves on time/ money/effort.*

18. *Identify sections that should be included chapter one of an ECDE research project.*

- *Introduction- gives a background to the problem which reveals the need for the study*
- *Statement of the problem- reveals the gap to be investigated.*
- *Purpose of the study- gives reason for carrying out the study*
- *Objectives of the study- gives aims and goals to be realized by the study.*

- *Significance of the study- the contributions the research will offer to the world of academia*
- *Definition of operational terms and abbreviations.*
- *Limitations and delimitations.*

19. *Define a research problem- this is an issue of concern that puzzles a researcher due to its effect that requires a solution based on evidence.*

20. *Jane is a teacher at mlachake ECDE centre. give ways through which she would identify a suitable research problem for study.*

- *Guidance from a mentor*
- *Media information provided by the different media sources.*
- *Ones personal experience.*
- *Social interactions with other learners.*
- *Filling in gaps/ further researcher.*

21. *Identify skills that an ECDE trainee would acquire from undertaking an ECDE research project.*

- *Interviewing*
- *Observation*
- *Analysis / interpretation*
- *Critical thinking*
- *Evaluation*
- *Recording/ documentation.*

22. *What is the meaning of data analysis- it is the systematic process of examining information in a survey/ experiment and making deduction from it.*

23. *The table below gives attendance of male and female participants in a children sensitization programme.*

days	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed
Male	22	28	30	22	55	30	33	22	40	37
female	36	38	39	42	45	50	50	55	55	58

a) Calculate the mean of male attendance during the programme

$$\text{Mean} = \frac{\text{sum of male participants}}{\text{number of days}}$$

$$= \frac{22+28+30+22+55+30+33+22+40+37}{10}$$

$$= \frac{289}{10}$$

$$= 28.9 \sim 29$$

b) What is the mode of male participants in the sensitization programme=  
22

c) Calculate the median for the female participants

36,38,39,42,45,50,50,55,55,58

The data is even hence median is between the 5<sup>th</sup> and 6<sup>th</sup> numbers.

$$= \frac{n}{2} \text{ and } \frac{n}{2} + 1$$

$$= \frac{10}{2} \text{ and } \frac{10}{2} + 1$$

=5<sup>th</sup> and 6<sup>th</sup> (count in the data for 5<sup>th</sup> number= 45 and 6<sup>th</sup> = 50 after organizing the data in ascending order)

$$= \frac{45+50}{2}$$

$$= \frac{95}{2}$$

$$= 47.5$$

d) Give reasons for the pattern of participation observed from the data

- Women are more involved in child rearing hence high level of participation.
- Men have given up on their roles with regards to children
- Traditionally women are left to handle issues related to do with children.
- More men than women are in formal employment hence tied in their places of work.